



EXPLORING WHAT'S POSSIBLE

# **APACHE CORPORATION**

P.O.Box 1849  
Eunice, NM 88231  
Phone 575.394.3159

## **Lockhart A-17 Battery**

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## **Termination Request**

API 30-025-38204

Release Date: February 8<sup>th</sup>, 2014

Unit Letter I, Section 17, Township 21S, Range 37E

**May 23<sup>rd</sup>, 2014**

**Geoffrey Leking**

New Mexico Energy, Minerals, & Natural Resources  
Oil Conservation Division, Environmental Bureau – District 1  
1625 N. French Dr.  
Hobbs, NM 88240-9273

**RE: Termination Request  
Apache Corporation – Lockhart A-17 Battery  
UL/I sec. 17 T21S R37E  
API No. 30-025-38204**

Mr. Leking:

Apache Corporation (Apache) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site.

**Background and Previous Work**

The site is located approximately 2.5 miles northwest of Eunice, New Mexico at UL/I sec. 17 T21S R37E. NM OSE and USGS records indicate that groundwater will likely be encountered at a depth of approximately 76 +/- feet.

On February 8<sup>th</sup>, 2014, Apache discovered a release of oil and produced water from a water transfer line. The transfer line froze and ruptured in two separate places. One area was inside the bermed, lined facility containment and the other occurred outside the containment wall. A total of 20 barrels of oil and 480 barrels of produced water were released over 10,603 square feet of facility and pasture land. A vacuum truck was called to the site and recovered a total of 450 barrels of fluid. NMOCD was notified of the release on February 10<sup>th</sup>, 2014 and an initial C-141 was sent to NMOCD for their approval (Appendix A).

RECS personnel were on site beginning on February 10<sup>th</sup>, 2014 to assess the release. Four points within the pasture area were sampled at the surface and with depth (Figure 1). The samples were field tested for chlorides and organic vapors, and representative samples were taken to a commercial laboratory for analysis (Appendix B). Vertical 1 was installed to a depth of 18 ft bgs. Laboratory chloride readings returned results of 816 mg/kg at 4 ft bgs and 352 mg/kg at 17 ft and 18 ft bgs. Vertical 2 was installed to a depth of 12 ft bgs. Laboratory chloride readings returned results of 2,120 mg/kg at 5 ft bgs, 224 mg/kg at 11 ft bgs and 128 mg/kg at 12 ft bgs. Vertical 3 was installed to a depth of 14 ft bgs. Laboratory chloride readings returned results of 1,730 mg/kg at 3 ft bgs, 160 mg/kg at 13 ft bgs and 208 mg/kg at 14 ft bgs. Vertical 4 was installed to a depth of 16 ft bgs. Laboratory chloride readings returned results of 1,040 mg/kg at

2 ft bgs, 176 mg/kg at 15 ft bgs and 48 mg/kg at 16 ft bgs. Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) readings returned results of non-detect in all verticals.

Based on the laboratory analysis of the site, a Corrective Action Plan (CAP) was submitted to NMOCD and approved on April 3<sup>rd</sup>, 2014. As part of the CAP, the pasture area would be excavated to a depth of 4 ft bgs. All excavated soils would be evaluated to use as backfill and any soils that did not meet requirements would be disposed of at a NMOCD approved facility. The remaining excavated soils would be blended on site with clean, imported soil. A sample of the blended backfill would be taken and field tested to verify that chloride levels were at or below 500 mg/kg and organic vapors were below 100 ppm. Wall samples would be taken to a commercial laboratory to determine that the remaining constituents were below regulatory standards. At the base of the 4 ft excavation, a 20-mil reinforced poly liner would be installed and properly seated (Figure 2). The site would be backfilled with the blended soil to surface level and contoured to the surrounding location.

Since the release in the facility occurred over a lined containment, the contaminated gravel overlaying the liner would be removed and taken to a NMOCD approved facility for disposal. Clean gravel would be imported to the site to replace the contaminated gravel.

CAP activities began on April 9<sup>th</sup>, 2014. The release area in the pasture was excavated to a depth of 4 ft bgs (Figure 3). Once the excavation was completed, wall samples from the excavation were taken and field tested for chlorides and organic vapors. The wall samples were then taken to a commercial laboratory for analysis. All wall samples returned laboratory chloride values below regulatory standards, except for the south wall #1, which returned a chloride value of 304 mg/kg. GRO and DRO for all wall samples returned values of non-detect. The excavated soil was evaluated on site and any soils that did not meet regulatory standards were taken to a NMOCD approved facility for disposal. A total of 224 cubic yards of contaminated soil from the pasture was taken to a NMOCD approved facility for disposal. The remainder of the excavated soil was set into four piles and blended on site with clean, imported soil. An eight point composite of each for the four piles was taken and field tested for chlorides and organic vapors. The composites were then taken to a commercial laboratory for analysis. All four blended piles returned laboratory chloride readings below 500 mg/kg and GRO and DRO readings of non-detect, except for stockpile 3, which returned a DRO value of 21.7 mg/kg (Appendix C).

The gravel over the lined battery facility was removed and replaced by clean gravel.

At the base of the 4 ft excavation, a 20-mil reinforced poly liner was installed and properly seated. The excavation was then backfilled with the blended soil to the surface and contoured to the surrounding location. On May 1<sup>st</sup>, 2014, the site was seeded with Blue Grama seed.

Photo documentation of all activities can be found in Appendix D.

Given that Apache has completed the Corrective Actions as approved by NMOCD, Apache respectfully requests 'remediation termination' and site closure. A final C-141 can be found in Appendix E.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-2967 or me if you have any questions or wish to discuss the site.

Sincerely,

A handwritten signature in dark ink, appearing to read 'J.C.W.' followed by a long, horizontal, slightly wavy line.

Lara Weinheimer  
Project Scientist  
RECS  
(575) 441-0431

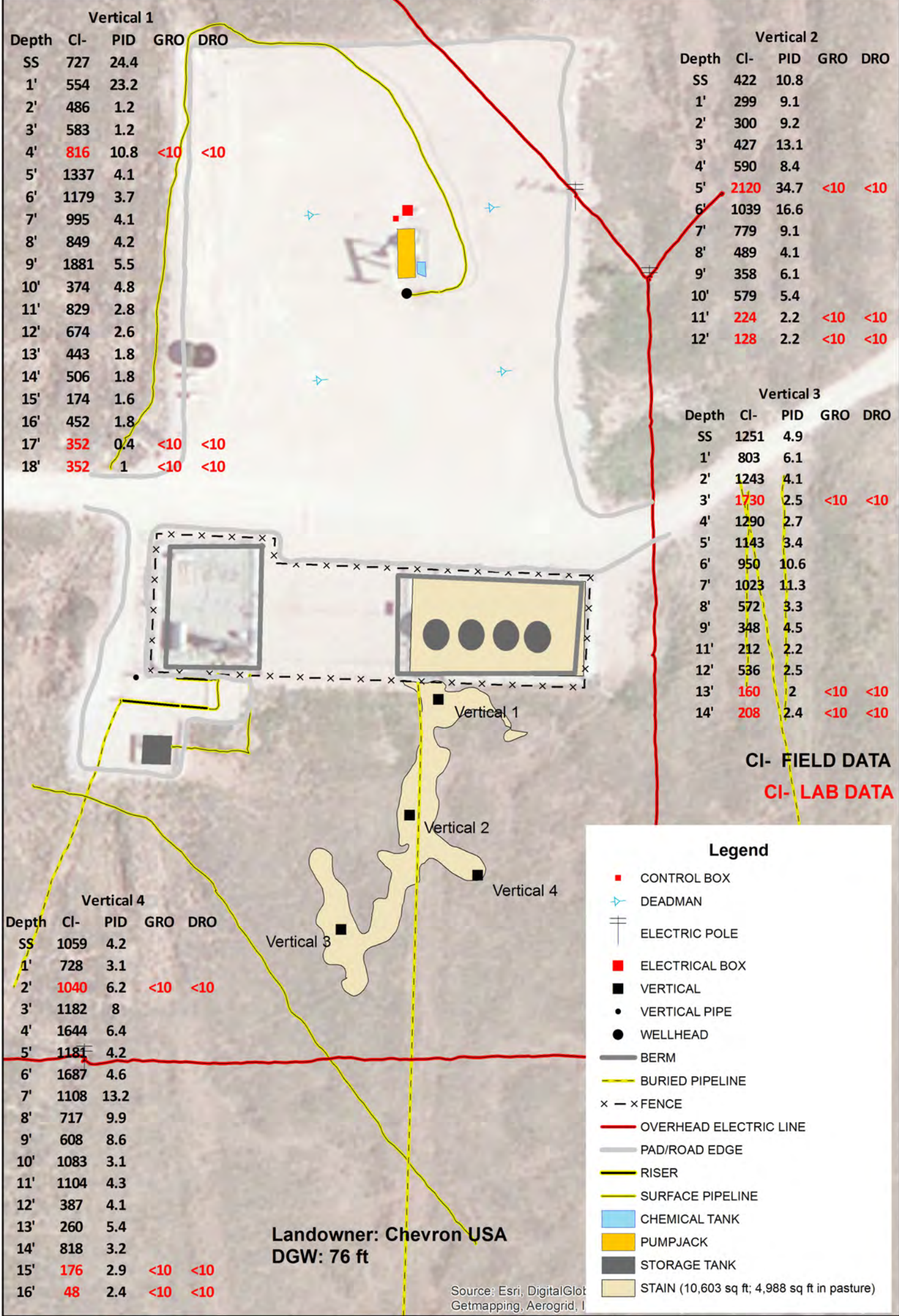
Attachments:

- Figure 1 – Vertical Sampling Data
- Figure 2 – Proposed Corrective Actions
- Figure 3 – Excavation Data
- Appendix A – Initial C-141
- Appendix B – Vertical Sampling Labs
- Appendix C – CAP Sampling Labs
- Appendix D – Photo Documentation
- Appendix E – Final C-141

# Figures



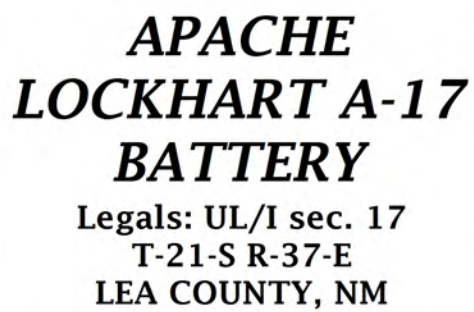
Vertical Sampling Data





[illegible]

Source: Esri, Digital  
Getmapping, Aero



# Figure 2

A north arrow is located in the top right corner, pointing North (N), South (S), East (E), and West (W). Below the north arrow is a scale bar with markings at 0, 60, and 120 feet. The scale bar is divided into four equal segments, each representing 30 feet.

0 60 120 Feet

GPS date: 2/27/14 AG  
Drawing date: 3/5/14  
Drafted by: L. Weinheimer



# Excavation Data

## West Wall Samples

	CI-	PID	GRO	DRO
#1	96	2.3	<10	<10
#2	80	1.1	<10	<10
#3	<16	1.1	<10	<10
#4	<16	1.3	<10	<10
#5	32	1	<10	14.4
#6	<16	1.6	<10	<10

## South Wall Samples

	CI-	PID	GRO	DRO
#1	304	14.4	<10	<10
#2	<16	1.2	<10	<10

## North Wall Samples

	CI-	PID	GRO	DRO
#1	32	1.3	<10	<10

## Northwest Wall Samples

	CI-	PID	GRO	DRO
#1	<16	1.7	<10	<10

## Southeast Wall Samples

	CI-	PID	GRO	DRO
#1	<16	2.5	<10	<10

## Stockpile 1

	CI-	GRO	DRO
	480	<10	<10

## Stockpile 2

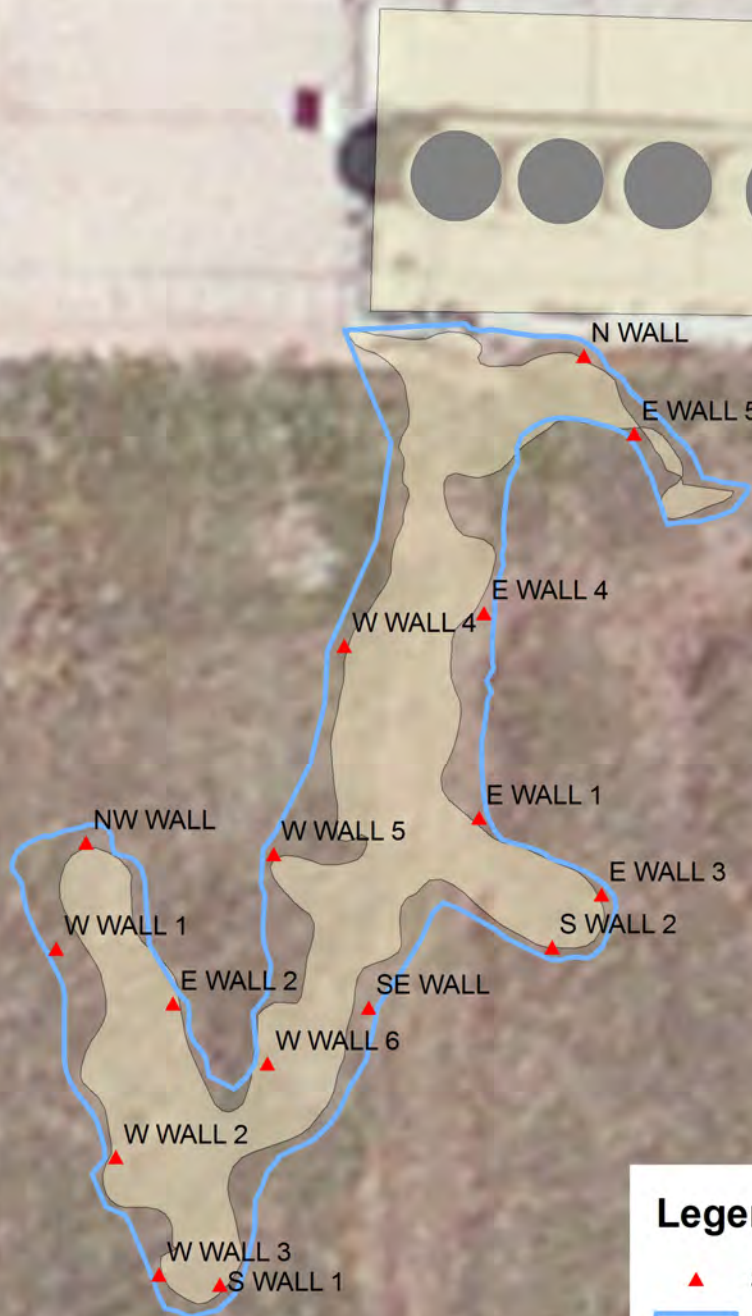
	CI-	GRO	DRO
	384	<10	<10

## Stockpile 3

	CI-	GRO	DRO
	352	<10	21.7

## Stockpile 4

	CI-	GRO	DRO
	192	<10	<10



## Legend

- ▲ SAMPLE POINT
- EXCAVATION @ 4 FT
- TANKS
- STAIN

Landowner: Chevron USA  
DGW: 76 ft

Source: Esri, DigitalGlobe, GeoEye, AeroGRID, IGN, ICF



## APACHE LOCKHART A-17 BATTERY

Legals: UL/I sec. 17  
T-21-S R-37-E  
LEA COUNTY, NM

## Figure 3



0 25 50  
Feet

GPS date: 4/14/14 AG  
Drawing date: 4/15/14  
Drafted by: T. Grieco



# Appendix A

Initial C-141

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., 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 August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

### Release Notification and Corrective Action

#### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Apache Corporation	Contact Bruce Baker	
Address 8 Ellison Lane Eunice, NM 88231	Telephone No. (432) 631-6982	
Facility Name Lockhart A -17 Battery (nearest WBDU # 69)	Facility Type Tank Battery	
Surface Owner Chevron	Mineral Owner	API No. 30-025-38204

#### LOCATION OF RELEASE

Unit Letter I	Section 17	Township 21S	Range 37E	Feet from the 2630'	North/South Line FSL	Feet from the 120'	East/West Line FEL	County Lea
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Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

#### NATURE OF RELEASE

Type of Release oil and produced water	Volume of Release 20 oil and 480 produced water	Volume Recovered 450 total fluid
Source of Release water transfer line	Date and Hour of Occurrence 2/8/14	Date and Hour of Discovery 2-8-14 at 10:30 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Geoffrey Leking	
By Whom? Bruce Baker	Date and Hour 2/10/14 at 9:00 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

The water transfer line froze and ruptured in two separate areas of the line. One area was inside the lined facility containment and the second outside the containment wall. A vacuum truck was dispatched to pick-up standing fluid. The line was repaired.

Describe Area Affected and Cleanup Action Taken.\*

The release affected two areas one inside the lined contained facility and the second area was in pasture (4,932 square feet). The standing fluid was picked up and the area was mapped and will be delineated and a corrective action plan will be submitted to NMOCD.

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.

#### OIL CONSERVATION DIVISION

Signature: <i>Bruce Baker</i>	Approved by Environmental Specialist:		
Printed Name: Bruce Baker			
Title: Environmental Technician	Approval Date:	Expiration Date:	
E-mail Address: larry.baker@apachecorp.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 2/20/14	Phone: (432) 631-6982		

\* Attach Additional Sheets If Necessary

# Appendix B

## Vertical Sampling Labs

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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March 03, 2014

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: LOCKHART A-17

Enclosed are the results of analyses for samples received by the laboratory on 02/25/14 16:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 02/25/2014  
Reported: 03/03/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 02/25/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: VERT 2 @ 5 FT (H400572-01)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>2120</b>	16.0	02/28/2014	ND	416	104	400	7.41	
TPH 8015M		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/01/2014	ND	217	108	200	3.10	
DRO >C10-C28	<10.0	10.0	03/01/2014	ND	212	106	200	0.309	
Surrogate: 1-Chlorooctane	90.8 %	65.2-140							
Surrogate: 1-Chlorooctadecane	93.0 %	63.6-154							

**Sample ID: VERT 2 @ 11 FT (H400572-02)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>224</b>	16.0	02/28/2014	ND	416	104	400	7.41	
TPH 8015M		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/01/2014	ND	217	108	200	3.10	
DRO >C10-C28	<10.0	10.0	03/01/2014	ND	212	106	200	0.309	
Surrogate: 1-Chlorooctane	82.5 %	65.2-140							
Surrogate: 1-Chlorooctadecane	89.6 %	63.6-154							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 02/25/2014  
Reported: 03/03/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 02/25/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: VERT 2 @ 12 FT (H400572-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	02/28/2014	ND	416	104	400	7.41	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/01/2014	ND	217	108	200	3.10	
DRO >C10-C28	<10.0	10.0	03/01/2014	ND	212	106	200	0.309	
Surrogate: 1-Chlorooctane	77.5 %	65.2-140							
Surrogate: 1-Chlorooctadecane	82.7 %	63.6-154							

**Sample ID: VERT 3 @ 3 FT (H400572-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1730	16.0	02/28/2014	ND	416	104	400	7.41	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/01/2014	ND	217	108	200	3.10	
DRO >C10-C28	<10.0	10.0	03/01/2014	ND	212	106	200	0.309	
Surrogate: 1-Chlorooctane	75.6 %	65.2-140							
Surrogate: 1-Chlorooctadecane	81.9 %	63.6-154							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 02/25/2014  
Reported: 03/03/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 02/25/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: VERT 3 @ 13 FT (H400572-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	02/28/2014	ND	416	104	400	7.41	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/01/2014	ND	217	108	200	3.10	
DRO >C10-C28	<10.0	10.0	03/01/2014	ND	212	106	200	0.309	
Surrogate: 1-Chlorooctane	88.2 %	65.2-140							
Surrogate: 1-Chlorooctadecane	91.1 %	63.6-154							

**Sample ID: VERT 3 @ 14 FT (H400572-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	02/28/2014	ND	416	104	400	7.41	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/01/2014	ND	217	108	200	3.10	
DRO >C10-C28	<10.0	10.0	03/01/2014	ND	212	106	200	0.309	
Surrogate: 1-Chlorooctane	87.5 %	65.2-140							
Surrogate: 1-Chlorooctadecane	97.1 %	63.6-154							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be 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 in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <i>Amber Groves</i>		Date: <i>2-25-14</i>		Received By: <i>Jodi Munson</i>		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Add'l Phone #:	
		Time: <i>4:15</i>				Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Add'l Fax #:	
Relinquished By:		Date:		Received By:		REMARKS:  email results Knorman@rice-ecs.com Kjones@riceswd.com; jkamplain@rice-ecs.com hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; sedwards@rice-ecs.com; lflores@rice-ecs.com; agroves@rice-ecs.com			
		Time:							
Delivered By: (Circle One)				Sample Condition		CHECKED BY:			
Sampler - UPS - Bus - Other:				Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/>		<i>[Signature]</i>			
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					

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

~~#~~54



March 04, 2014

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: LOCKHART A-17

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Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 02/27/2014  
Reported: 03/04/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 02/25/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: VERT 1 @ 4 FT (H400603-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>816</b>	16.0	03/04/2014	ND	432	108	400	3.77	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/03/2014	ND	206	103	200	7.94	
DRO >C10-C28	<10.0	10.0	03/03/2014	ND	197	98.7	200	8.31	
Surrogate: 1-Chlorooctane	100 %	65.2-140							
Surrogate: 1-Chlorooctadecane	105 %	63.6-154							

**Sample ID: VERT 1 @ 17 FT (H400603-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>352</b>	16.0	03/04/2014	ND	432	108	400	3.77	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/04/2014	ND	216	108	200	2.10	
DRO >C10-C28	<10.0	10.0	03/04/2014	ND	202	101	200	1.52	
Surrogate: 1-Chlorooctane	99.2 %	65.2-140							
Surrogate: 1-Chlorooctadecane	104 %	63.6-154							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 02/27/2014  
Reported: 03/04/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 02/27/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: VERT 1 @ 18 FT (H400603-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	03/04/2014	ND	432	108	400	3.77	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/04/2014	ND	216	108	200	2.10	
DRO >C10-C28	<10.0	10.0	03/04/2014	ND	202	101	200	1.52	
Surrogate: 1-Chlorooctane	99.2 %	65.2-140							
Surrogate: 1-Chlorooctadecane	101 %	63.6-154							

**Sample ID: VERT 4 @ 2 FT (H400603-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1040	16.0	03/04/2014	ND	432	108	400	3.77	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/04/2014	ND	216	108	200	2.10	
DRO >C10-C28	<10.0	10.0	03/04/2014	ND	202	101	200	1.52	
Surrogate: 1-Chlorooctane	96.8 %	65.2-140							
Surrogate: 1-Chlorooctadecane	103 %	63.6-154							

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 02/27/2014  
 Reported: 03/04/2014  
 Project Name: LOCKHART A-17  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 02/27/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: VERT 4 @ 15 FT (H400603-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	03/04/2014	ND	432	108	400	3.77	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/04/2014	ND	216	108	200	2.10	
DRO >C10-C28	<10.0	10.0	03/04/2014	ND	202	101	200	1.52	
Surrogate: 1-Chlorooctane	99.2 %	65.2-140							
Surrogate: 1-Chlorooctadecane	102 %	63.6-154							

**Sample ID: VERT 4 @ 16 FT (H400603-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	03/04/2014	ND	432	108	400	3.77	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/04/2014	ND	216	108	200	2.10	
DRO >C10-C28	<10.0	10.0	03/04/2014	ND	202	101	200	1.52	
Surrogate: 1-Chlorooctane	94.1 %	65.2-140							
Surrogate: 1-Chlorooctadecane	98.6 %	63.6-154							

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



# **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: <u>Apache</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																				
Project Manager: <u>Bruce Baker</u>				P.O. #:				<div>Chlorides</div> <div>TPH 8015 M</div> <div>BTEX</div> <div>Texas TPH</div> <div>Complete Cations/Anions</div> <div>TDS</div>																				
Address:				Company:																								
City: Hobbs State: NM Zip: 88240				Attn:																								
Phone #: Fax #:				Address:																								
Project #: Project Owner:				City:																								
Project Name: <u>Lockhart A-17</u>				State: Zip:																								
Project Location:				Phone #:																								
Sampler Name: Amber Groves				Fax #:																								
FOR LAB USE ONLY																												
Lab I.D.	Sample I.D.	(G)RAB OR (COMP.)	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME														
H4DD1623																												
1	Vert 1 @ 4ft	G	1			✓							2-25-14	8:35	✓	✓												
2	Vert 1 @ 17ft	G	1			✓							2-27-14	8:45	✓	✓												
3	Vert 1 @ 17ft 18ft 18ft 18ft	G	1			✓							2-27-14	8:50	✓	✓												
4	Vert 4 @ 2ft	G	1			✓							2-27-14	10:00	✓	✓												
5	Vert 4 @ 15ft	G	1			✓							2-27-14	10:20	✓	✓												
6	Vert 4 @ 11ft	G	1			✓							2-27-14	10:30	✓	✓												

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Relinquished By: <u>Amber Groves</u>	Date: <u>2-27-14</u>	Received By: <u>Jodi Benson</u>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #:
	Time: <u>4:40</u>		Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		email results Knorman@rice-ecs.com Kjones@riceswd.com; jkamplain@rice-ecs.com hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; sedwards@rice-ecs.com; lflores@rice-ecs.com; agroves@rice-ecs.com <u>regans@rice-ecs.com</u>
Delivered By: (Circle One)	Sample Condition	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<u>JA</u>	

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

#54

# Appendix C

## CAP Sampling Labs

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

---

April 11, 2014

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: LOCKHART A-17

Enclosed are the results of analyses for samples received by the laboratory on 04/10/14 16:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 04/10/2014  
 Reported: 04/11/2014  
 Project Name: LOCKHART A-17  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 04/10/2014  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Celey D. Keene

**Sample ID: SOUTH WALL 1 (H401098-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>304</b>	16.0	04/11/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/11/2014	ND	200	99.8	200	0.00301	
DRO >C10-C28	<10.0	10.0	04/11/2014	ND	214	107	200	0.554	
<i>Surrogate: 1-Chlorooctane</i>		119 %	65.2-140						
<i>Surrogate: 1-Chlorooctadecane</i>		108 %	63.6-154						

**Sample ID: SOUTH WALL 2 (H401098-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/11/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/11/2014	ND	200	99.8	200	0.00301	
DRO >C10-C28	<10.0	10.0	04/11/2014	ND	214	107	200	0.554	
<i>Surrogate: 1-Chlorooctane</i>		112 %	65.2-140						
<i>Surrogate: 1-Chlorooctadecane</i>		102 %	63.6-154						

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 04/10/2014  
Reported: 04/11/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/10/2014  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Celey D. Keene

**Sample ID: WEST WALL 1 (H401098-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	04/11/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/11/2014	ND	200	99.8	200	0.00301	
DRO >C10-C28	<10.0	10.0	04/11/2014	ND	214	107	200	0.554	
Surrogate: 1-Chlorooctane		116 %	65.2-140						
Surrogate: 1-Chlorooctadecane		107 %	63.6-154						

**Sample ID: WEST WALL 2 (H401098-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	04/11/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/11/2014	ND	200	99.8	200	0.00301	
DRO >C10-C28	<10.0	10.0	04/11/2014	ND	214	107	200	0.554	
Surrogate: 1-Chlorooctane		117 %	65.2-140						
Surrogate: 1-Chlorooctadecane		103 %	63.6-154						

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 04/10/2014  
Reported: 04/11/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/10/2014  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Celey D. Keene

**Sample ID: WEST WALL 3 (H401098-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/11/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/11/2014	ND	200	99.8	200	0.00301	
DRO >C10-C28	<10.0	10.0	04/11/2014	ND	214	107	200	0.554	
Surrogate: 1-Chlorooctane		124 %	65.2-140						
Surrogate: 1-Chlorooctadecane		114 %	63.6-154						

**Sample ID: EAST WALL 1 (H401098-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/11/2014	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/11/2014	ND	200	99.8	200	0.00301	
DRO >C10-C28	<10.0	10.0	04/11/2014	ND	214	107	200	0.554	
Surrogate: 1-Chlorooctane		116 %	65.2-140						
Surrogate: 1-Chlorooctadecane		104 %	63.6-154						

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 04/10/2014  
 Reported: 04/11/2014  
 Project Name: LOCKHART A-17  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 04/10/2014  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Celey D. Keene

**Sample ID: EAST WALL 3 (H401098-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/11/2014	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/11/2014	ND	200	99.8	200	0.00301	
DRO >C10-C28	<10.0	10.0	04/11/2014	ND	214	107	200	0.554	
Surrogate: 1-Chlorooctane		114 %	65.2-140						
Surrogate: 1-Chlorooctadecane		99.9 %	63.6-154						

**Sample ID: NORTHWEST WALL (H401098-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/11/2014	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/11/2014	ND	200	99.8	200	0.00301	
DRO >C10-C28	<10.0	10.0	04/11/2014	ND	214	107	200	0.554	
Surrogate: 1-Chlorooctane		119 %	65.2-140						
Surrogate: 1-Chlorooctadecane		102 %	63.6-154						

Cardinal Laboratories

\* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Cardinal Laboratories

\*=Accredited Analyte

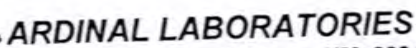
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Celey D. Keene, Lab Director/Quality Manager





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:						<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>																	
Project Manager:						P.O. #:	Chlorides TPH 8015 M  BTEx Texas TPH Complete Cations/Anions TDS																		
Address:						Company:																			
City: Hobbs State: NM Zip: 88240						Attn:																			
Phone #: Fax #:						Address:																			
Project #: Project Owner:						City:																			
Project Name:						State: Zip:																			
Project Location:						Phone #:																			
Sampler Name:						Fax #:																			
FOR LAB USE ONLY		Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV.	SAMPLING															
						GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME									
H401098	01 Southwall	G	1					✓					✓	4-10-14	9:00	✓	✓								
	02 Southwall 2	G	1					✓					✓	4-10-14	10:50	✓	✓								
	03 West wall 1	G	1					✓					✓	4-10-14	10:45	✓	✓								
	04 West wall 2	G	1					✓					✓	4-10-14	2:00	✓	✓								
	05 West wall 3	G	1					✓					✓	4-10-14	2:05	✓	✓								
	06 East wall 1	G	1					✓					✓	4-10-14	1:30	✓	✓								
	07 East wall 3	G	1					✓					✓	4-10-14	12:45	✓	✓								
	08 Northwest wall	G	1					✓					✓	4-10-14	1:00	✓	✓								

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PLEASE NOTE: Liability and Damages: No claim, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing within 90 days of the date of the analysis. All claims including those for negligence and any other cause whatsoever, including without limitation, business interruption, loss of use, or loss of profits incurred by client, its subsidiaries, service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruption, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <i>Amber Groves</i>	Date: <i>4-10-14</i>	Received By: <i>C. Lychee</i>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #:
Relinquished By:	Time: <i>4:05</i>	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Fax #:
Delivered By: (Circle One)	Date:	Sample Condition	REMARKS: <i>Rush</i> email results knorman@rice-ecs.com hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; kjones@riceswd.com; Lpena@riceswd.com; sedwards@rice-ecs.com agroves@rice-ecs.com <i>* Samples brought directly to lab.</i>
Sampler - UPS - Bus - Other:	Time:	Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>88°C</i>	
CHECKED BY: (Initials) <i>CL</i>			

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

\* Samples brought directly to lab.

April 14, 2014

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: LOCKHART A-17

Enclosed are the results of analyses for samples received by the laboratory on 04/11/14 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 04/11/2014  
Reported: 04/14/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/11/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Celey D. Keene

**Sample ID: WEST WALL 4 (H401113-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/14/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/14/2014	ND	184	92.1	200	5.84	
DRO >C10-C28	<10.0	10.0	04/14/2014	ND	192	96.0	200	9.09	
Surrogate: 1-Chlorooctane	104 %	65.2-140							
Surrogate: 1-Chlorooctadecane	102 %	63.6-154							

**Sample ID: WEST WALL 5 (H401113-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	04/14/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/14/2014	ND	184	92.1	200	5.84	
DRO >C10-C28	14.4	10.0	04/14/2014	ND	192	96.0	200	9.09	
Surrogate: 1-Chlorooctane	103 %	65.2-140							
Surrogate: 1-Chlorooctadecane	102 %	63.6-154							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425Received: 04/11/2014  
Reported: 04/14/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVENSampling Date: 04/11/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Celey D. Keene**Sample ID: WEST WALL 6 (H401113-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/14/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/14/2014	ND	184	92.1	200	5.84	
DRO >C10-C28	<10.0	10.0	04/14/2014	ND	192	96.0	200	9.09	
Surrogate: 1-Chlorooctane	110 %	65.2-140							
Surrogate: 1-Chlorooctadecane	103 %	63.6-154							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





# **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: <u>Apache</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>									
Project Manager: <u>Bruce Baker</u>				P.O. #:				<div style="display: flex; flex-direction: column; align-items: center;"> <div>Chlorides</div> <div>TPH 8015 M</div> <div>BTEX</div> <div>Texas TPH</div> <div>Complete Cations/Anions</div> <div>TDS</div> </div>									
Address:				Company:													
City: Hobbs State: NM Zip: 88240				Attn:													
Phone #: Fax #:				Address:													
Project #: Project Owner:				City:													
Project Name: <u>Lockhart A-17</u>				State: Zip:													
Project Location:				Phone #:													
Sampler Name: <u>Amber Groves</u>				Fax #:													
FOR LAB USE ONLY		Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		MATRIX		PRESERV.		SAMPLING			
						GROUNDWATER				WASTEWATER							
						SOIL				OIL							
						SLUDGE				OTHER:							
						ACID/BASE:				ICE / COOL							
						OTHER:											
										DATE		TIME					
		<u>H401113-</u>															
		<u>01 West wall 4</u>				<u>G</u>		<u>1</u>								<u>4-11-14 7:45</u>	
		<u>02 West wall 5</u>				<u>G</u>		<u>1</u>								<u>4-11-14 7:50</u>	
		<u>03 West wall 6</u>				<u>G</u>		<u>1</u>								<u>4-11-14 9:15</u>	

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be 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 in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <u>Amber Groves</u>		Date: <u>4-11-14</u>	Received By: <u>Ally Heene</u>		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
		Time: <u>2:15</u>			Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Relinquished By:		Date:	Received By:		REMARKS:	
		Time:			email results	
Delivered By: (Circle One)		Sample Condition		CHECKED BY: (Initials)		
Sampler - UPS - Bus - Other:		Cool Intact		<u>cmh</u>		
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
				agroves@rice-ecs.com		

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

#54



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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April 16, 2014

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: LOCKHART A-17

Enclosed are the results of analyses for samples received by the laboratory on 04/14/14 16:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 04/14/2014  
Reported: 04/16/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/14/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: STOCKPILE 1 (H401130-01)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>480</b>	16.0	04/15/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2014	ND	190	95.1	200	0.196	
DRO >C10-C28	<10.0	10.0	04/15/2014	ND	205	103	200	0.435	
Surrogate: 1-Chlorooctane	114 %	65.2-140							
Surrogate: 1-Chlorooctadecane	104 %	63.6-154							

**Sample ID: SOUTHEAST WALL (H401130-02)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/15/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2014	ND	190	95.1	200	0.196	
DRO >C10-C28	<10.0	10.0	04/15/2014	ND	205	103	200	0.435	
Surrogate: 1-Chlorooctane	117 %	65.2-140							
Surrogate: 1-Chlorooctadecane	104 %	63.6-154							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 04/14/2014  
 Reported: 04/16/2014  
 Project Name: LOCKHART A-17  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 04/14/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: EAST WALL 2 (H401130-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	04/15/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2014	ND	190	95.1	200	0.196	
DRO >C10-C28	71.5	10.0	04/15/2014	ND	205	103	200	0.435	
Surrogate: 1-Chlorooctane		105 %	65.2-140						
Surrogate: 1-Chlorooctadecane		97.1 %	63.6-154						

**Sample ID: EAST WALL 4 (H401130-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	04/15/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2014	ND	190	95.1	200	0.196	
DRO >C10-C28	<10.0	10.0	04/15/2014	ND	205	103	200	0.435	
Surrogate: 1-Chlorooctane	104 %	65.2-140							
Surrogate: 1-Chlorooctadecane	94.4 %	63.6-154							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 APACHE - EUNICE  
 BRUCE BAKER  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

 Received: 04/14/2014  
 Reported: 04/16/2014  
 Project Name: LOCKHART A-17  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 04/14/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: EAST WALL 5 (H401130-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	04/15/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2014	ND	190	95.1	200	0.196	
DRO >C10-C28	<10.0	10.0	04/15/2014	ND	205	103	200	0.435	
Surrogate: 1-Chlorooctane	109 %	65.2-140							
Surrogate: 1-Chlorooctadecane	102 %	63.6-154							

**Sample ID: NORTH WALL (H401130-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	04/15/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2014	ND	190	95.1	200	0.196	
DRO >C10-C28	<10.0	10.0	04/15/2014	ND	205	103	200	0.435	
Surrogate: 1-Chlorooctane	110 %	65.2-140							
Surrogate: 1-Chlorooctadecane	97.9 %	63.6-154							

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 04/14/2014  
Reported: 04/16/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/14/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: STOCKPILE 2 (H401130-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	04/15/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2014	ND	190	95.1	200	0.196	
DRO >C10-C28	<10.0	10.0	04/15/2014	ND	205	103	200	0.435	
Surrogate: 1-Chlorooctane		107 %	65.2-140						
Surrogate: 1-Chlorooctadecane		96.0 %	63.6-154						

**Sample ID: STOCKPILE 3 (H401130-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	04/15/2014	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/15/2014	ND	190	95.1	200	0.196	
DRO >C10-C28	21.7	10.0	04/15/2014	ND	205	103	200	0.435	
Surrogate: 1-Chlorooctane		115 %	65.2-140						
Surrogate: 1-Chlorooctadecane		106 %	63.6-154						

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



# **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

*\* Rush \**

## **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Company Name: <u>Apache</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																		
Project Manager: <u>Bruce Baker</u>				P.O. #:				<div style="display: flex; flex-direction: column; align-items: center;"> <div>Chlorides</div> <div>TPH 8015 M</div> <div>BTEX</div> <div>Texas TPH</div> <div>Complete Cations/Anions</div> <div>TDS</div> </div>																		
Address: <u>Larry.baker@apachecorp.com</u>				Company:																						
City: Hobbs State: NM Zip: 88240				Attn:																						
Phone #: Fax #:				Address:																						
Project #: Project Owner:				City:																						
Project Name: <u>Dalhart #17</u>				State: Zip:																						
Project Location:				Phone #:																						
Sampler Name: <u>Amber Groves</u>				Fax #:																						
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING																		
Lab I.D.	Sample I.D.	(GRAB OR C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME												
<u>H40130</u>																										
<u>1</u>	<u>Stock pile 1</u>	<u>G</u>	<u>1</u>			<u>✓</u>							<u>4-14-14</u>	<u>8:45</u>	<u>✓</u>	<u>✓</u>										
<u>2</u>	<u>Southeast wall</u>	<u>G</u>	<u>1</u>			<u>✓</u>							<u>4-14-14</u>	<u>11:00</u>	<u>✓</u>	<u>✓</u>										
<u>3</u>	<u>East wall # 2</u>	<u>G</u>	<u>1</u>			<u>✓</u>							<u>4-14-14</u>	<u>11:05</u>	<u>✓</u>	<u>✓</u>										
<u>4</u>	<u>East wall 4</u>	<u>G</u>	<u>1</u>			<u>✓</u>							<u>4-14-14</u>	<u>12:20</u>	<u>✓</u>	<u>✓</u>										
<u>5</u>	<u>East wall 5</u>	<u>G</u>	<u>1</u>			<u>✓</u>							<u>4-14-14</u>	<u>3:00</u>	<u>✓</u>	<u>✓</u>										
<u>6</u>	<u>North wall</u>	<u>G</u>	<u>1</u>			<u>✓</u>							<u>4-14-14</u>	<u>3:10</u>	<u>✓</u>	<u>✓</u>										
<u>7</u>	<u>Stockpile 2</u>	<u>G</u>	<u>1</u>			<u>✓</u>							<u>4-14-14</u>	<u>4:00</u>	<u>✓</u>	<u>✓</u>										
<u>8</u>	<u>Stockpile 3</u>	<u>G</u>	<u>1</u>			<u>✓</u>							<u>4-14-14</u>	<u>4:15</u>	<u>✓</u>	<u>✓</u>										

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Relinquished By: <u>Amber Groves</u>	Date: <u>4-14-14</u> Time: <u>4:50</u>	Received By: <u>Jodi Nenson</u>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Fax #:
Delivered By: (Circle One)	Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: <u>JAN</u>	REMARKS:
Sampler - UPS - Bus - Other:			email results knorman@rice-ecs.com hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; kjones@riceswd.com; Lpena@riceswd.com; sedwards@rice-ecs.com agroves@rice-ecs.com

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

*#54*

*\* Sample id changed as per Jacob. 4/16/14 ch*

April 23, 2014

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: LOCKHART A-17

Enclosed are the results of analyses for samples received by the laboratory on 04/23/14 13:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

APACHE - EUNICE  
BRUCE BAKER  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 04/23/2014  
Reported: 04/23/2014  
Project Name: LOCKHART A-17  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 04/23/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: STOCKPILE 4 (H401224-01)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>192</b>	16.0	04/23/2014	ND	416	104	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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RPD	Relative Percent Difference
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***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

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Celey D. Keene, Lab Director/Quality Manager





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(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Apache</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>											
Project Manager: <u>Bruce Baker</u>				P.O. #:				<div style="display: flex; flex-direction: column; align-items: center;"> <div>Chlorides</div> <div>TPH 8015 M</div> <div>BTEX</div> <div>Texas TPH</div> <div>Complete Cations/Anions</div> <div>TDS</div> </div>											
Address: <u>Larry.baker@apachecorp.com</u>				Company:															
City: Hobbs State: NM Zip: 88240				Attn:															
Phone #: Fax #:				Address:															
Project #: Project Owner:				City:															
Project Name: <u>Lockhart A-17</u>				State: Zip:															
Project Location:				Phone #: Fax #:															
Sampler Name: <u>Amber Groves</u>				DATE				TIME											
FOR LAB USE ONLY		Lab I.D.		Sample I.D.		GRAB OR (C)OMP.		# CONTAINERS		MATRIX		PRESERV.		SAMPLING					
										GROUNDWATER									
										WASTEWATER									
										SOIL									
										OIL									
										SLUDGE									
										OTHER:									
										ACID/BASE:									
										ICE / COOL									
										OTHER:									
												4-23-14		12:15					

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Relinquished By: <u>[Signature]</u>		Date: <u>4-23-14</u>	Received By: <u>[Signature]</u>		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By: <u>[Signature]</u>		Time: <u>1:15</u>	Received By: <u>[Signature]</u>		Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One)		Sample Condition		CHECKED BY: <u>[Signature]</u>		
Sampler - UPS - Bus - Other:		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		email results		
		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		knorman@rice-ecs.com hconder@rice-ecs.com;		
				Lweinheimer@rice-ecs.com; kjones@riceswd.com;		
				Lpena@riceswd.com; sedwards@rice-ecs.com		
				agroves@rice-ecs.com		

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

#54

# Appendix D

## Photo Documentation

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967



# Apache Lockhart A-17

Unit Letter I, Section 17, T21S, R37E



Initial release area, facing southwest 2/10/14



Initial release area, facing east 2/10/14



Initial release photo, facing northwest 2/10/14



Sampling release area, facing west 2/10/14





Installing vertical, facing east

2/25/14



Taking sample of vertical, facing northwest

2/25/14



Excavating site, facing southeast

4/9/14



Sampling the excavation's walls

4/10/14





Exporting soil, facing north

4/10/14



Continue excavating, facing north

4/11/14



Blending soil, facing east

4/14/14



Final excavation, facing south

4/17/14





Final excavation, facing south

4/17/14



Final excavation, facing northeast

4/17/14



Installing liner, facing northwest

4/17/14



Installing liner, facing north

4/17/14





Liner installation completed, facing south 4/17/14



Liner installation completed, facing northeast 4/17/14



Backfilling site, facing southeast 4/17/14



Importing soil, facing northwest 4/23/14





Site backfilled, facing northeast

5/1/14



Site backfilled, facing northwest

5/1/14



Site backfilled, facing southeast

5/1/14



Site backfilled, facing south

5/1/14





Disking soil to prepare for seeding, facing northwest  
5/1/14



Seeding the site, facing southwest  
5/1/14



Site completed, facing north  
5/1/14



Site completed, facing south  
5/1/14



# Appendix E

Final C-141

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 2948 Hobbs, NM 88241  
Phone 575.393.2967

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., 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 August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Apache Corporation	Contact	Bruce Baker
Address	8 Ellison Lane, Eunice, NM 88231	Telephone No.	(432) 631-6982
Facility Name	Lockhart A-17 Battery (nearest WBDU #69)	Facility Type	Tank Battery

Surface Owner	Chevron	Mineral Owner		API No.	30-025-38204
---------------	---------	---------------	--	---------	--------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	17	21S	37E	2630'	FSL	120'	FBL	Lea

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

NATURE OF RELEASE

Type of Release	oil and produced water	Volume of Release	20 oil and 480 produced water	Volume Recovered	450 total fluid
Source of Release	water transfer line	Date and Hour of Occurrence	2/8/14	Date and Hour of Discovery	2-8-14 at 10:30 a.m.
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Geoffrey Leking		
By Whom?	Bruce Baker	Date and Hour	2/10/14 at 9:00 a.m.		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* The water transfer line froze and ruptured in two separate areas on the line. One area was inside the lined facility containment and the second outside the containment wall. A vacuum truck was dispatched to pick-up standing fluid. The line was repaired.

Describe Area Affected and Cleanup Action Taken.\* A total of 10,603 square feet of facility and pasture land was affected by the release. RECS personnel were on site beginning on February 10<sup>th</sup>, 2014 to assess the release. Four points within the pasture area were sampled at the surface and with depth. Representative samples were taken to a commercial laboratory for analysis. Based on the laboratory analysis of the site, a Corrective Action Plan (CAP) was submitted to NMOCD and approved on April 3<sup>rd</sup>, 2014. CAP activities began on April 9<sup>th</sup>, 2014. The release area in the pasture was excavated to a depth of 4 ft bgs. Once the excavation was completed, wall samples from the excavation were taken and field tested for chlorides and organic vapors. The wall samples were then taken to a commercial laboratory for analysis. All wall samples returned laboratory chloride values below regulatory standards, except for the south wall #1, which returned a chloride value of 304 mg/kg. GRO and DRO for all wall samples returned values of non-detect. The excavated soil was evaluated on site and any soils that did not meet regulatory standards were taken to a NMOCD approved facility for disposal. A total of 224 cubic yards of contaminated soil from the pasture was taken to a NMOCD approved facility for disposal. The remainder of the excavated soil was set into four piles and blended on site with clean, imported soil. An eight point composite of each for the four piles was taken and field tested for chlorides and organic vapors. The composites were then taken to a commercial laboratory for analysis. All four blended piles returned laboratory chloride readings below 500 mg/kg and GRO and DRO readings of non-detect, except for stockpile 3, which returned a DRO value of 21.7 mg/kg. The gravel over the lined battery facility was removed and replaced by clean gravel. At the base of the 4 ft excavation, a 20-mil reinforced poly liner was installed and properly seated. The excavation was then backfilled with the blended soil to the surface and contoured to the surrounding location. On May 1<sup>st</sup>, 2014, the site was seeded with Blue Grama seed.

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>Bruce Baker</i>	OIL CONSERVATION DIVISION		
Printed Name: Bruce Baker	Approved by Environmental Specialist:		
Title: Environmental Technician	Approval Date:	Expiration Date:	
E-mail Address: larry.baker@apachecorp.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 5-28-2014	Phone: (432) 631-6982		

\* Attach Additional Sheets If Necessary