



EXPLORING WHAT'S POSSIBLE

RECEIVED

By OCD District 1 at 1:12 pm, Aug 21, 2015

APPROVED

By OCD District 1 at 1:12 pm, Aug 21, 2015

APACHE CORPORATION

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

NEDU #157
(1RP-3607)

Termination Request

API No. 30-025-40696

Release Date: April 3rd, 2015

Unit Letter G, Section 3, Township 21S, Range 37E



PO Box 2948 | Hobbs, NM 88241 | Phone 575.393.2967

August 20, 2015

Dr. Tomáš Oberding, PhD

Hydrologist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240

**RE: Termination Request
Apache NEDU #157 (1RP-3607)
UL/G sec. 3 T21S R37E
API No. 30-025-40696**

Dr. Oberding:

Apache Corporation (Apache) has retained Basin Environmental Services Technologies, LLC (BEST) to address potential environmental concerns at the above-referenced site.

Background and Previous Work

The site is located approximately 5.5 miles north of Eunice, New Mexico at UL/G of sec. 3 T21S R37E. NM OSE, USGS and BEST installed monitor wells indicate that groundwater will be encountered at a depth of approximately +/- 75 ft bgs.

On April 3rd, 2015, Apache discovered a release of 225 barrels of produced water from a crack in a 2 inch fiberglass line. The release covered 6,853 square feet of pasture land. The well was shut in and the line repaired. Vacuum trucks were dispatched to the site and recovered 190 barrels of fluid. NMOCD was informed of the release on April 3rd, 2015, and an initial C-141 was sent to NMOCD on April 14th, 2015. NMOCD approved the initial C-141 the same day (Appendix A).

Four surface samples were taken from the release on April 6th, 2015. The samples were field tested for chlorides and organic vapors, and the samples were taken to a commercial laboratory for analyses. Beginning on April 8th, 2015, five verticals were installed at the site to determine the depth of contamination (Figure 1). As the verticals were installed, samples were taken at regular intervals and field tested for chlorides and organic vapors. Representative samples from each vertical were taken to a commercial laboratory for analyses. Vertical 1 returned laboratory chloride readings of 64 mg/kg at 11 ft bgs and 256 mg/kg at 12 ft bgs. Vertical 2 returned laboratory chloride readings of 80 mg/kg at 6 ft bgs and 144 mg/kg at 7 ft bgs. Vertical 3 returned laboratory chloride readings of 32 mg/kg at 12 ft bgs and 48 mg/kg at 13 ft bgs. Vertical 4 returned laboratory chloride readings of 96 mg/kg at 7 ft bgs and 48 mg/kg at 8 ft bgs. Vertical 5 returned laboratory chloride readings of 224 mg/kg at 13 ft bgs and 288 mg/kg at 14 ft

bgs. GRO and DRO readings for all verticals at all depths returned values of non-detect (Appendix B).

Based on the laboratory analyses, a Path Forward with an Addendum was submitted to NMOCD and BLM on April 22nd, 2015. The Path Forward stated that the area around Vertical 2 would be excavated to 6 ft bgs. Once the excavation was completed, discrete samples from the walls of the excavation would be taken and sent to a commercial laboratory to confirm that the contaminated soil had been removed.

The remainder of the release would be excavated to a depth of 4 ft bgs. Once the excavation was completed, discrete wall samples would be taken to confirm that the contaminated soil had been removed. At the base of the 4 ft bgs excavation, a 20-mil reinforced poly liner would be installed and properly seated. The excavated soil would be sent to a NMOCD approved facility for disposal, and clean soil would be imported to the site to serve as backfill. NMOCD approved the Path Forward with the Addendum on April 23rd, 2015.

Excavating for the Path Forward began on April 13th, 2015 (Figure 2). The southern area of the release was excavated to 4 ft bgs. Once the excavation was completed, discrete wall samples were taken and field tested for chlorides and organic vapors. The samples were then sent to a commercial laboratory for analyses. All wall samples returned laboratory chloride readings below regulatory standards. At the base of the 4 ft bgs excavation, a 20-mil reinforced poly liner was installed and properly seated.

The northern area of the release was excavated to 6 ft bgs. Once the excavation was completed, discrete wall samples were taken and field tested for chlorides and organic vapors. The samples were then sent to a commercial laboratory for analyses. All wall samples returned laboratory chloride, GRO and DRO readings of non-detect.

The excavated soil was taken to a NMOCD approved facility for disposal. Clean soil was imported to the site to serve as backfill. A sample of the imported soil was taken to a commercial laboratory and returned a chloride reading of non-detect. Both excavations were backfilled with the imported soil and contoured to the surrounding location.

Photo documentation of the field activities can be found in Appendix C.

Given that Apache has removed the contaminated soil from the release, installed a liner and backfilled the site with clean soil, Apache respectfully requests 'remediation termination' and site closure. A final C-141 can be found in Appendix D.

BEST appreciates the opportunity to work with you on this project. Please call Kyle Norman 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 'L. Weinheimer', with a long, horizontal, slightly wavy line extending to the right.

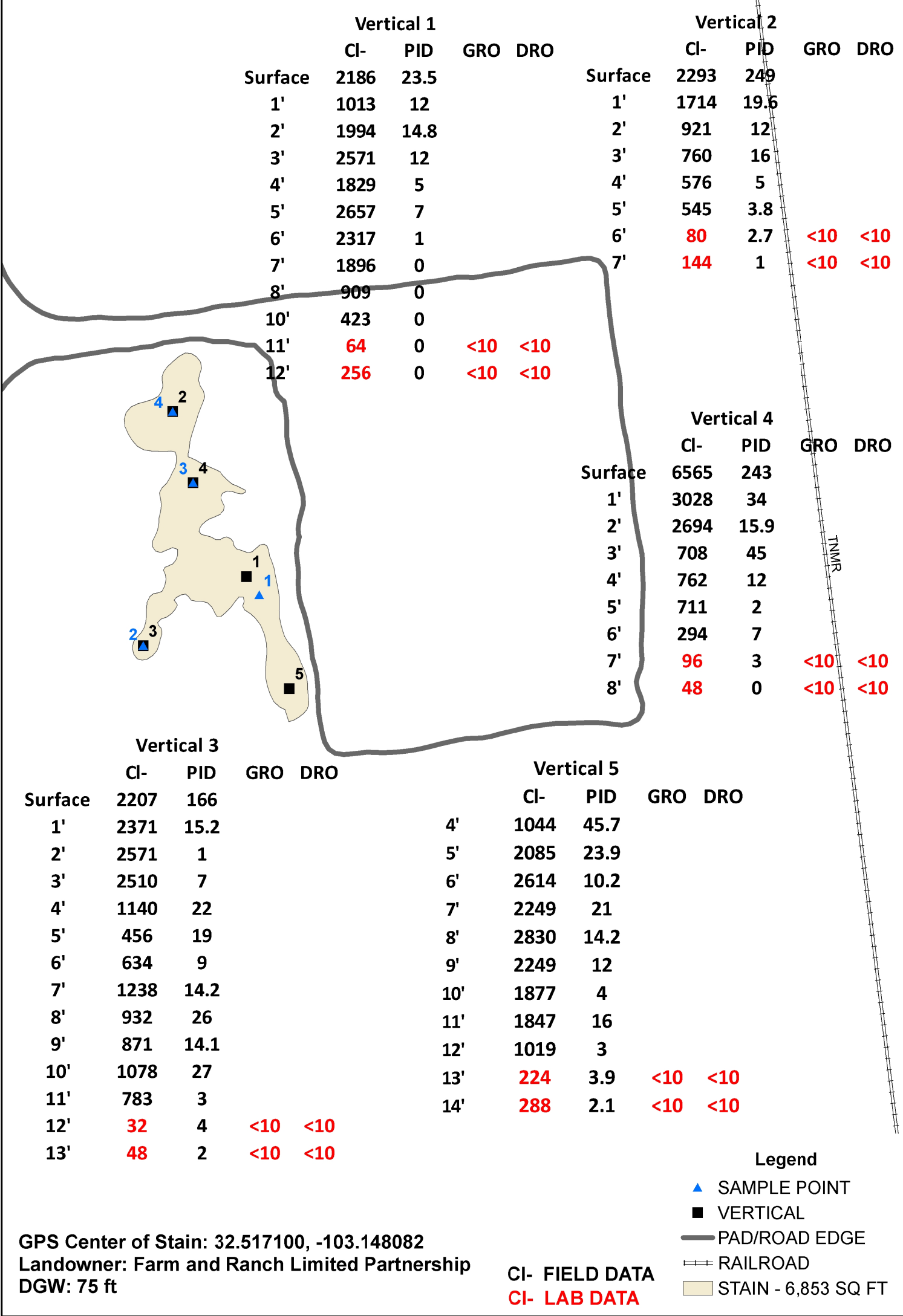
Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

Attachments:

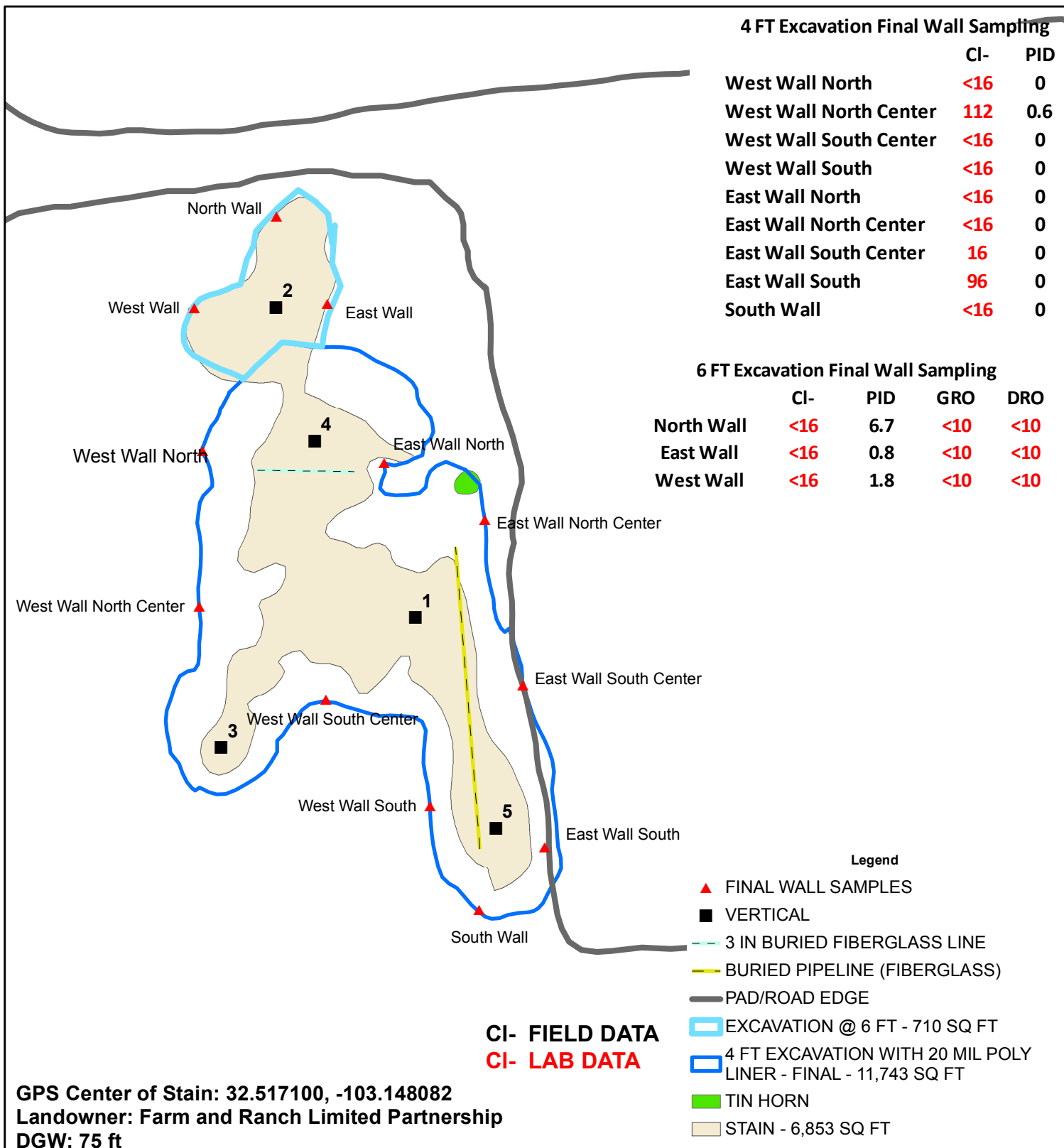
Figure 1 – Initial Sampling Data
Figure 2 – Excavation Data
Appendix A – Initial C-141
Appendix B – Laboratory Analyses
Appendix C – Photo Documentation
Appendix D – Final C-141

Figures

Initial Sampling Data



Excavation Data



APACHE
NEDU #157
NMOCD Case #: 1RP-3607
UL G SECTION 3
T-21-S R-37-E
LEA COUNTY, NM

Figure 2



0 30 60
Feet

GPS date: 4/16/15 CF, 5/14/15 KH
Drawing date: 6/8/15
Drafted by: L. Weinheimer, 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	2350 W. Marland Blvd, Hobbs, NM 88240	Telephone No.	(432) 631-6982
Facility Name	NEDU #157	Facility Type	Fiberglass line

Surface Owner	Farm and Ranch Limited	Mineral Owner		API No.	30-025-40696
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BLM

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	3	21S	37E	1830	FNL	1744	FEL	Lea

Latitude N32.8117 Longitude W104.0582

NATURE OF RELEASE

Type of Release	Produced water	Volume of Release	225 bbls	Volume Recovered	190 bbls
Source of Release	2" in fiberglass line	Date and Hour of Occurrence	4/3/15	Date and Hour of Discovery	4/3/15

Was Immediate Notice Given?
☒ Yes ☐ No ☐ Not Required

If YES, To Whom?
Dr. Tomas Oberding

By Whom? Bruce Baker

Date and Hour 4/3/15

Was a Watercourse Reached?

☐ Yes ☒ No

If YES, Volume Impacting the Watercourse

If a Watercourse was Impacted, Describe Fully.*

RECEIVED

By OCD; Dr. Oberding at 1:47 pm, Apr 14, 2015

Describe Cause of Problem and Remedial Action Taken.* A fiberglass line cracked releasing fluid over the pasture. The well was shut in and line repaired. Vacuum trucks were dispatched to pick-up standing fluid.

Describe Area Affected and Cleanup Action Taken.*

The release area covered 6,853 sq ft of the pasture to the west of the #157 lease pad. A path forward will be submitted to NMOCD after delineation efforts.

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: <u>Bruce Baker</u>		OIL CONSERVATION DIVISION	
Printed Name: Bruce Baker		Hydrologist Approved by <u>Environmental Sciences</u>	
Title: Environmental Technician		Approval Date: <u>04/14/2015</u>	Expiration Date: <u>07/14/2015</u>
E-mail Address: <u>larry.baker@apachecorp.com</u>		Conditions of Approval: Site samples required. Delineate and remediate area as per NMOCD guides.	Attached <input type="checkbox"/>
Date: <u>4/13/15</u>	Phone: <u>(432) 631-6982</u>	Provide photographic documentation of remediation.	IRP-3607 873

* Attach Additional Sheets If Necessary

nTO1510449969

pTO1510452101

Appendix B

Laboratory Analyses

Basin Environmental Service Technologies (BEST)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967



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

April 10, 2015

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: NEDU #157

Enclosed are the results of analyses for samples received by the laboratory on 04/09/15 12:55.

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.

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: 04/09/2015
 Reported: 04/10/2015
 Project Name: NEDU #157
 Project Number: NONE GIVEN
 Project Location: EUNICE, NEW MEXICO

 Sampling Date: 04/09/2015
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Jodi Henson

Sample ID: VERTICAL 5 @ 13' (H500939-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	04/10/2015	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	04/09/2015	ND	181	90.7	200	1.65	
DRO >C10-C28	<10.0	10.0	04/09/2015	ND	186	92.8	200	2.24	
<hr/>									
Surrogate: 1-Chlorooctane	87.7 %	47.2-157							
Surrogate: 1-Chlorooctadecane	91.8 %	52.1-176							

Sample ID: VERTICAL 5 @ 14' (H500939-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	04/10/2015	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	04/09/2015	ND	181	90.7	200	1.65	
DRO >C10-C28	<10.0	10.0	04/09/2015	ND	186	92.8	200	2.24	
<hr/>									
Surrogate: 1-Chlorooctane	86.0 %	47.2-157							
Surrogate: 1-Chlorooctadecane	91.1 %	52.1-176							

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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*=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

Page 4 of 4

Company Name: ARCHP				BILL TO				ANALYSIS REQUEST									
Project Manager: BRUCE BAKER				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:				State: Zip:													
Project Location: NEDU # 157				Phone #:													
Sampler Name: Kyle Humphrey				Fax #:													
FOR LAB USE ONLY						MATRIX		PRESERV.		SAMPLING							
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME			
H500939																	
	1 VERT 5 @ 13 ft	61				/							4-9-15	12:00			
	2 VERT 5 @ 14 ft	61				/							4-9-15	12:00			

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Relinquished By:	Date: 4/9/15	Received By:	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Kyle Humphrey	Time: 12:55	Jodi Henson	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:		email: hconder@riceswd.com; lflores@rice-ecs.com;	
Delivered By: (Circle One)		Sample Condition	lweinheimer@rice-ecs.com; knorman@rice-ecs.com;	
Sampler - UPS - Bus - Other:		Cool Intact	jkamplain@rice-ecs.com; sedwards@rice-ecs.com;	
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	cursanic@rice-ecs.com	
			Environmental Tech: K Humphrey @rice-ecs.com	

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

samples taken & brought directly to lab.



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

April 14, 2015

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #157

Enclosed are the results of analyses for samples received by the laboratory on 04/08/15 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.

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, flowing style.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 04/08/2015
Reported: 04/14/2015
Project Name: NEDU #157
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 04/08/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: VERTICAL 1 @ 11' (H500932-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	04/10/2015	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	04/09/2015	ND	207	104	200	0.105	
DRO >C10-C28	<10.0	10.0	04/09/2015	ND	224	112	200	2.86	
Surrogate: 1-Chlorooctane	114 %	47.2-157							
Surrogate: 1-Chlorooctadecane	110 %	52.1-176							

Sample ID: VERTICAL 1 @ 12' (H500932-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	04/10/2015	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	04/09/2015	ND	207	104	200	0.105	
DRO >C10-C28	<10.0	10.0	04/09/2015	ND	224	112	200	2.86	
Surrogate: 1-Chlorooctane	116 %	47.2-157							
Surrogate: 1-Chlorooctadecane	115 %	52.1-176							

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 04/08/2015
Reported: 04/14/2015
Project Name: NEDU #157
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 04/08/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: VERTICAL 2 @ 6' (H500932-03)

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	04/10/2015	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	04/09/2015	ND	207	104	200	0.105	
DRO >C10-C28	<10.0	10.0	04/09/2015	ND	224	112	200	2.86	
Surrogate: 1-Chlorooctane	111 %	47.2-157							
Surrogate: 1-Chlorooctadecane	107 %	52.1-176							

Sample ID: VERTICAL 2 @ 7' (H500932-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	04/10/2015	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	04/09/2015	ND	207	104	200	0.105	
DRO >C10-C28	<10.0	10.0	04/09/2015	ND	224	112	200	2.86	
Surrogate: 1-Chlorooctane	114 %	47.2-157							
Surrogate: 1-Chlorooctadecane	109 %	52.1-176							

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	04/08/2015	Sampling Date:	04/08/2015
Reported:	04/14/2015	Sampling Type:	Soil
Project Name:	NEDU #157	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: VERTICAL 3 @ 12' (H500932-05)

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	04/10/2015	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	04/09/2015	ND	207	104	200	0.105	
DRO >C10-C28	<10.0	10.0	04/09/2015	ND	224	112	200	2.86	
Surrogate: 1-Chlorooctane	114 %	47.2-157							
Surrogate: 1-Chlorooctadecane	117 %	52.1-176							

Sample ID: VERTICAL 3 @ 13' (H500932-06)

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	04/10/2015	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	04/09/2015	ND	207	104	200	0.105	
DRO >C10-C28	<10.0	10.0	04/09/2015	ND	224	112	200	2.86	
Surrogate: 1-Chlorooctane	113 %	47.2-157							
Surrogate: 1-Chlorooctadecane	110 %	52.1-176							

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 04/08/2015
Reported: 04/14/2015
Project Name: NEDU #157
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 04/08/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: VERTICAL 4 @ 7' (H500932-07)

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	04/10/2015	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	04/09/2015	ND	207	104	200	0.105	
DRO >C10-C28	<10.0	10.0	04/09/2015	ND	224	112	200	2.86	
Surrogate: 1-Chlorooctane	113 %	47.2-157							
Surrogate: 1-Chlorooctadecane	116 %	52.1-176							

Sample ID: VERTICAL 4 @ 8' (H500932-08)

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	04/10/2015	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	04/09/2015	ND	207	104	200	0.105	
DRO >C10-C28	<10.0	10.0	04/09/2015	ND	224	112	200	2.86	
Surrogate: 1-Chlorooctane	116 %	47.2-157							
Surrogate: 1-Chlorooctadecane	110 %	52.1-176							

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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Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: <u>Apache</u>		BILL TO		ANALYSIS REQUEST																						
Project Manager: <u>Bruce Baker</u>		P.O. #:																								
Address:		Company: <u>Apache</u>																								
City:	State:	Zip:	Attn:																							
Phone #:	Fax #:	Address:																								
Project #:	Project Owner:		City:																							
Project Name: <u>NEDU #157</u>		State:														Zip:										
Project Location: <u>NEDU #157</u>		Phone #:																								
Sampler Name: <u>Kyle Humphrey</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>H500932</u>																										
	<u>1 Vert 1 @ 11 ft</u>	<u>6</u>	<u>1</u>			<u>1</u>				<u>1</u>			<u>4-8-15</u>	<u>11:00</u>	<u>1</u>	<u>1</u>										
	<u>2 Vert 1 @ 12 ft</u>	<u>6</u>	<u>1</u>			<u>1</u>				<u>1</u>				<u>11:05</u>	<u>1</u>	<u>1</u>										
	<u>3 Vert 2 @ 6 ft</u>	<u>6</u>	<u>1</u>			<u>1</u>				<u>1</u>				<u>2:00</u>	<u>1</u>	<u>1</u>										
	<u>4 Vert 2 @ 7 ft</u>	<u>6</u>	<u>1</u>			<u>1</u>				<u>1</u>				<u>2:05</u>	<u>1</u>	<u>1</u>										
	<u>5 Vert 3 @ 12 ft</u>	<u>6</u>	<u>1</u>			<u>1</u>				<u>1</u>				<u>2:10</u>	<u>1</u>	<u>1</u>										
	<u>6 Vert 3 @ 13 ft</u>	<u>6</u>	<u>1</u>			<u>1</u>				<u>1</u>				<u>2:15</u>	<u>1</u>	<u>1</u>										
	<u>7 Vert 9 @ 7 ft</u>	<u>6</u>	<u>1</u>			<u>1</u>				<u>1</u>				<u>3:00</u>	<u>1</u>	<u>1</u>										
	<u>8 Vert 4 @ 8 ft</u>	<u>6</u>	<u>1</u>			<u>1</u>				<u>1</u>				<u>3:05</u>	<u>1</u>	<u>1</u>										

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Relinquished By: <u>[Signature]</u>	Date: <u>4-8-15</u>	Received By: <u>[Signature]</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
	Time: <u>16:15</u>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:		<u>J. Komphorn @ Rice - pes.com</u>	
Delivered By: (Circle One)			<u>K. Humphrey @ Rice - pes.com</u>	
Sampler - UPS - Bus - Other:	<u>4.8°C</u>	Sample Condition	<u>Larry Baker @ Apache Corp. com</u>	
		Cool Intact		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
		CHECKED BY: <u>[Signature]</u>		

April 21, 2015

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #157

Enclosed are the results of analyses for samples received by the laboratory on 04/16/15 16:52.

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.

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 CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

 Received: 04/16/2015
 Reported: 04/21/2015
 Project Name: NEDU #157
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 04/15/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: W WALL NORTH CENTER @ 4' (H501003-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	04/20/2015	ND	400	100	400	3.92	

Sample ID: W WALL SOUTH CENTER @ 4' (H501003-02)

Chloride, SM4500CI-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	04/20/2015	ND	400	100	400	3.92	

Sample ID: W WALL SOUTH @ 4' (H501003-03)

Chloride, SM4500CI-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	04/20/2015	ND	400	100	400	3.92	

Sample ID: E WALL NORTH CENTER @ 4' (H501003-04)

Chloride, SM4500CI-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	04/20/2015	ND	400	100	400	3.92	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 04/16/2015
Reported: 04/21/2015
Project Name: NEDU #157
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 04/15/2015
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: E WALL SOUTH CENTER @ 4' (H501003-05)

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	04/20/2015	ND	400	100	400	3.92	

Sample ID: E WALL SOUTH @ 4' (H501003-06)

Chloride, SM4500CI-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	04/20/2015	ND	400	100	400	3.92	

Sample ID: W WALL NORTH @ 4' (H501003-07)

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	04/20/2015	ND	400	100	400	3.92		

Sample ID: E WALL NORTH @ 4' (H501003-08)

Chloride, SM4500CI-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	04/20/2015	ND	400	100	400	3.92		

Sample ID: SOUTH WALL @ 4' (H501003-09)

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	04/20/2015	ND	400	100	400	3.92	

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

Cardinal Laboratories

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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

Page 5 of 5

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

#54



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

May 11, 2015

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #157

Enclosed are the results of analyses for samples received by the laboratory on 05/04/15 13:50.

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.

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, flowing style.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 05/04/2015
Reported: 05/11/2015
Project Name: NEDU #157
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 05/04/2015
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Amanda Ponce

Sample ID: IMPORTED TOPSOIL (H501157-01)**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	05/06/2015	ND	416	104	400	3.77	

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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



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Relinquished By: 		Date: 5/4/15		Received By: 		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #:	
Relinquished By:		Time: 1:30		Received By:		Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Fax #:	
Delivered By: (Circle One)		Time:		Sample Condition		REMARKS:	
Sampler - UPS - Bus - Other: 1.8 c #54				Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> Yes		email results: hconder@rice-ecs.com; knorman@rice-ecs.com; jkamplain@rice-ecs.com; lflores@rice-ecs.com; lweinheimer@rice-ecs.com; cursanic@rice-ecs.com; sedwards@rice-ecs.com environmental tech: K Humphrey @rice-ecs.com company: larry.baker@apachecorp.com	
				CHECKED BY: (Initials) 			

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

Appendix C

Photo Documentation

Basin Environmental Service Technologies (BEST)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

Apache NEDU #157

Unit Letter G, Section 3, T21S, R37E



Installing verticals, facing northeast

4/8/15



Installing verticals, facing east

4/8/15



Excavating site, facing north

4/13/15



Excavating site, facing north

4/13/15



Excavating site, facing south 4/13/15



Continue excavating, facing northwest 4/14/15



Excavation completed, facing northeast 4/16/15



Leveling base of 4 ft excavation, facing south 4/16/15



Excavation prior to liner installation, facing northeast
4/16/15



Installing liner, facing south
4/16/15



Installing liner, facing west
4/16/15



Liner installation completed, facing northeast
4/16/15



Liner installation completed, facing southeast 4/16/15



Importing top soil, facing north 5/4/15



Backfilling site, facing northeast 5/4/15



Excavating north area, facing west 5/14/15



Exporting soil, facing east

5/14/15



Excavation to the north completed, facing northwest

5/14/15



Importing soil to backfill north excavation, facing west

5/14/15



Backfilling site, facing east

5/14/15

Appendix D

Final 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	2350 W. Marland Blvd, Hobbs, NM 88240	Telephone No.	(432) 631-6982
Facility Name	NEDU #157	Facility Type	Fiberglass line

Surface Owner	BLM	Mineral Owner		API No.	30-025-40696
---------------	-----	---------------	--	---------	--------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	3	21S	37E	1830	FNL	1744	FEL	Lea

Latitude 32.517100 Longitude -103.148082

NATURE OF RELEASE

Type of Release	Produced water	Volume of Release	225 bbls	Volume Recovered	190 bbls
Source of Release	2" in fiberglass line	Date and Hour of Occurrence	4/3/15	Date and Hour of Discovery	4/3/15
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Dr. Tomas Oberding		
By Whom?	Bruce Baker	Date and Hour	4/3/15		
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.* A fiberglass line cracked releasing fluid over the pasture. The well was shut in and line repaired. Vacuum trucks were dispatched to pick-up standing fluid.

Describe Area Affected and Cleanup Action Taken.*☐ The release area covered 6,853 sq ft of the pasture to the west of the #157 lease pad. Four surface samples were taken from the release on April 6th, 2015. Beginning on April 8th, 2015, five verticals were installed at the site to determine the depth of contamination. Representative samples from each vertical were taken to a commercial laboratory for analyses. Based on the laboratory analyses, a Path Forward with an Addendum was submitted to NMOCD and BLM on April 22nd, 2015. NMOCD approved the Path Forward with the Addendum on April 23rd, 2015. Excavating for the Path Forward began on April 13th, 2015. The southern area of the release was excavated to 4 ft bgs. Once the excavation was completed, discrete wall samples were taken and sent to a commercial laboratory for analyses. All wall samples returned laboratory chloride readings below regulatory standards. At the base of the 4 ft bgs excavation, a 20-mil reinforced poly liner was installed and properly seated. The northern area of the release was excavated to 6 ft bgs. Once the excavation was completed, discrete wall samples were taken and sent to a commercial laboratory for analyses. All wall samples returned laboratory chloride, GRO and DRO readings of non-detect. The excavated soil was taken to a NMOCD approved facility for disposal. Clean soil was imported to the site to serve as backfill. A sample of the imported soil was taken to a commercial laboratory and returned a chloride reading of non-detect. Both excavations were backfilled with the imported soil and contoured to the surrounding location.

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

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Approved by Environmental Specialist: *Jamie Hays*

Approval Date: 08/21/2015

Expiration Date: ///

Conditions of Approval:

Attached ☐

1RP 3607

* Attach Additional Sheets If Necessary