



October 19, 2020

Mr. Bradford Billings  
State of New Mexico Oil Conservation Division  
1220 South St Francis Drive  
Santa Fe, NM 87505

RE: 1RP-4972 NEDU 613

Mr. Billings,

In compliance with 19.15.29.15(B) NMAC and the agreement submitted by Apache Corporation on November 8, 2018, Apache Corporation is submitting information related to closure for the release occurring February 13, 2013. Apache is respectfully submitting the closure report based on remediation and studies occurring in 2019 that demonstrate the site meeting the requirements of the agency. Unless further information is requested by NMOCD, Apache Corporation considers this release closed.

If there are any questions, please feel free to contact me by telephone at 432-631-6982 or by e-mail at [larry.baker@apachecorp.com](mailto:larry.baker@apachecorp.com).

Sincerely,

A handwritten signature in black ink that reads "Larry Baker". The signature is written in a cursive, flowing style.

Larry Baker  
Environmental Technician SR.  
Apache Corporation

Attachment: Closure Report Dated October 19, 2020



303 Veterans Airpark Lane Midland, TX 79705

## **Closure Report**

October 19, 2020

Re: NEDU 613  
Case # 1RP-4972

On 2/13/2018 a release occurred due to a steel flange inside the valve box corroded resulting in the release of fluid. The release area is located north of Eunice, New Mexico (GPS Coordinates 32.4807014, -103.1444626) in unit letter H section 15 township 21S range 37E. A search radius of 2000 meters for groundwater meters for groundwater wells was conducted utilizing data from the NMOSE and USGS. The average depth to groundwater is 45 feet below ground surface. A remediation plan was submitted and OCD approved the plan on 7/25/2018.

The release area was excavated to depths ranging from 3 to 4.4 feet. A 20 mil reinforced liner was installed in accordance with the OCD approved Plan. Final bottom and wall grab samples were collected in accordance with the OCD approved Plan. Two sample points Wall 5 and 10 were above table one standards for chlorides. On 10/09/2020 Apache Corporation collected samples at 1.5 feet at Wall 5 and 10 to confirm the walls were remediated in 2019. The samples collected were submitted to a commercial laboratory for analysis of chlorides. The laboratory results were below table one standards for releases less than or equal to 50 feet to groundwater. All excavation soil was hauled to an OCD approved facility and backfilled with clean imported top soil and re-seeded in accordance with the state land office.

Apache Corporation has completed the remediation in accordance with the OCD approved remediation plan and respectfully request closure of case # 1RP-4972.

Enclosed: C-141, Maps, Sample Data, Laboratory Data, Photos and Field Notes.

Submitted by;

*Bruce Baker*

**Environmental Technician**

[larry.baker@apachecorp.com](mailto:larry.baker@apachecorp.com)

**Cell# 432-631-6982**

**Off# 575-393-7106**

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 Street, Hobbs, NM 88240	Telephone No. (432) 631-6982
Facility Name NEDU 613	Facility Type Injection Well
Surface Owner State	Mineral Owner State
API No. 30-025-09919	

### LOCATION OF RELEASE

Unit Letter H	Section 15	Township 21S	Range 37E	Feet from the 1980'	North/South Line FNL	Feet from the 660'	East/West Line FEL	County Lea
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Latitude 32.4807014 Longitude -103.1444626

### NATURE OF RELEASE

Type of Release Produce Water	Volume of Release 30 Barrels	Volume Recovered 0
Source of Release injection line	Date and Hour of Occurrence 2/13/2018	Date and Hour of Discovery 2/13/2018 at 5:00 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Olivia Yu (NMOCD)	
By Whom? Jorge Rivera	Date and Hour 2/14/2018 at 3:00 p.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.\*

**RECEIVED**

By Olivia Yu at 8:22 am, Feb 21, 2018



Describe Cause of Problem and Remedial Action Taken.\*

A steel flange inside the valve box corroded resulting in the release of fluid. The line was isolated and repaired.

Describe Area Affected and Cleanup Action Taken.\*

The entire release was approximately 200 feet southeast of the pad and the release impacted the right of way and pasture.

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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Bruce Baker	Approved by Environmental Specialist: 	
Title: Environmental Technician	Approval Date: 2/21/2018	Expiration Date:
E-mail Address: larry.baker@apachecorp.com	Conditions of Approval:	Attached <input checked="" type="checkbox"/>
Date: 2/20/2018 Phone: (432) 631-6982	see attached directive	

\* Attach Additional Sheets If Necessary

1RP-4972

nOY1805230371

pOY1805231050

Incident ID	
District RP	
Facility ID	
Application ID	

## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Larry Baker Title: Environmental Tech SR.  
Signature: Larry Baker Date: 10/19/2020  
email: larry.baker@apachecorp.com Telephone: 432-631-6982

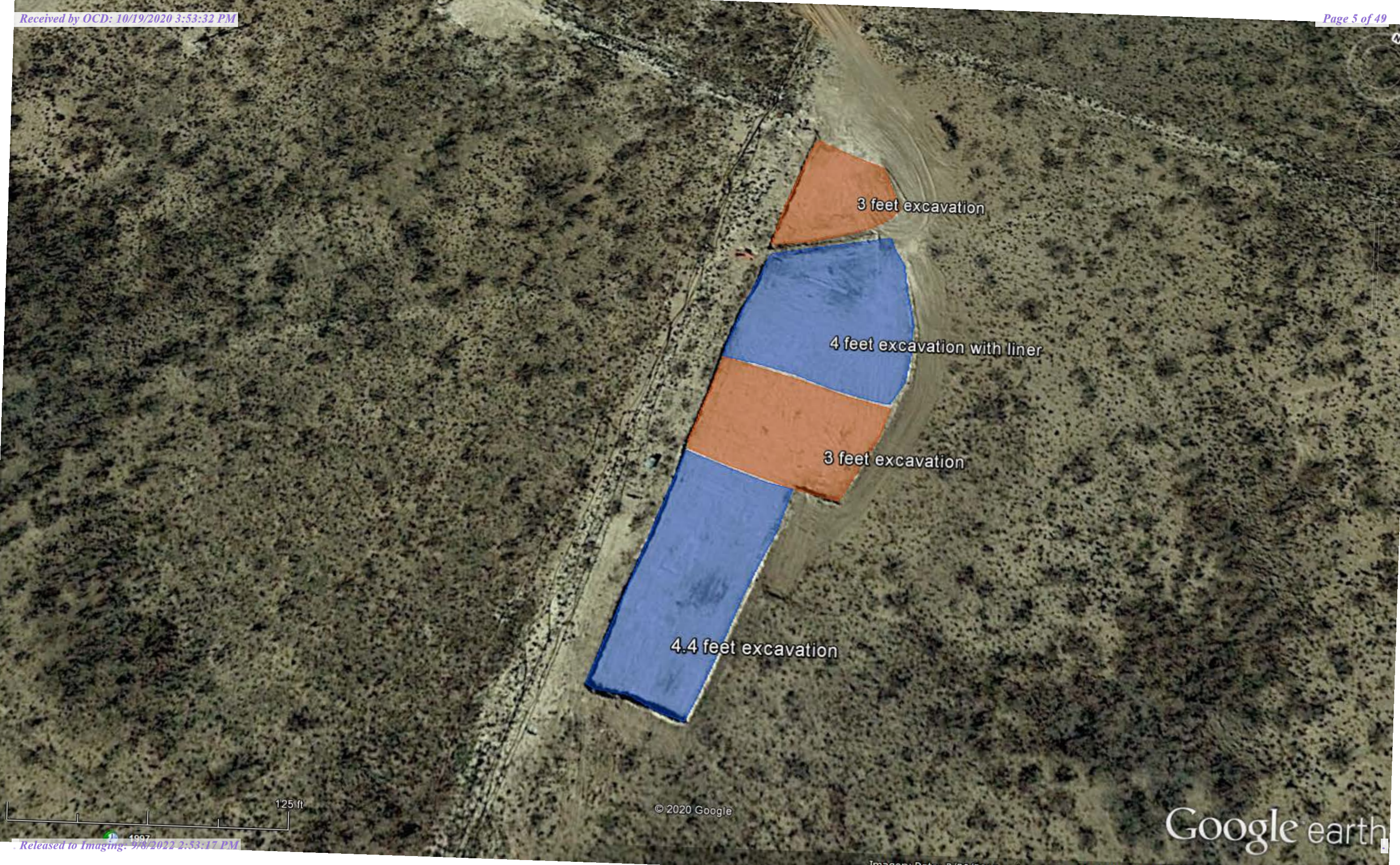
**OCD Only**

Received by: OCD Date: 10/19/2020

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Ashley Maxwell Date: 9/8/2022  
Printed Name: Ashley Maxwell Title: Environmental Specialist





3 feet excavation

4 feet excavation with liner

3 feet excavation

4.4 feet excavation

© 2020 Google

Google earth





© 2020 Google

Google earth



## Final Wall Samples

Date	Map ID	Sample ID	Depth	Lab Cl-	Benzene	Toluene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS
2/13/2019	W1	W Wall @ 4'4"		384	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4794228 -103.1436754
2/13/2019	W2	S Wall @ 4'4"		64.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4793059 -103.1435440
2/13/2019	W3	E Wall @ 4'4"		32.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4794578 -103.1434827
2/13/2019	W4	E Wall @ 3'		16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4797313 -103.1434414
2/14/2019	W5	W Wall @ 3'		672	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4797101 -103.1437180
10/9/2020	W5	W5		<16.0									
2/14/2019	W6	W Wall @ 4'		64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4798235 -103.1437670
2/14/2019	W7	E Wall @ 4'		96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4798699 -103.1434377
2/14/2019	W8	S Wall @ 3' 6"		144	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4797986 -103.1435883
2/15/2019	W9	N Wall Behind Pipeline		80	<0.050	0.114	0.067	<0.150	<0.300	<10.0	<10.0	<10.0	32.4799760 -103.1436238
2/15/2019	W10	W Wall @ 3'		992	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4800868 -103.1437626
10/9/2020	W10	W10		<16.0									
2/15/2019	W11	N Wall @ 3'		64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4801423 -103.1436174

2/15/2019	W12	S Wall @ 3'		368	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4800396 -103.1436862
2/15/2019	W13	E Wall @ 3'		80	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4800396 -103.1435913
2/26/2019	W14	N Wall @ 4'		544	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4796089 -103.1436050

## Final Bottom Samples

Date	Map ID	Lab ID	Depth	Lab Cl-	Benzene	Toluene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS
2/13/2019	B1	SP 1 @ 4'4"	4' 4"	16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4794372 -103.1435997
2/13/2019	B2	SP 2 @ 4'4"	4' 4"	80.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4795908 -103.1436151
2/13/2019	B3	SP 3 @ 3'	3'	64.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4797523 -103.1435849
2/15/2019	B4	SP4 @ 3'	3'	48.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.4801083 -103.1436808





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

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October 09, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #613

Enclosed are the results of analyses for samples received by the laboratory on 10/09/20 12:32.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. 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, flowing style.

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 10/09/2020  
 Reported: 10/09/2020  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 10/09/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: W 5 (H002695-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/09/2020	ND	416	104	400	0.00		

**Sample ID: W 10 (H002695-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/09/2020	ND	416	104	400	0.00		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

### 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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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

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February 19, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #613

Enclosed are the results of analyses for samples received by the laboratory on 02/13/19 15:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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





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

**Analytical Results For:**

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

Received: 02/13/2019  
 Reported: 02/19/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/13/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 @ 4' 4" (H900583-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2019	ND	2.33	116	2.00	0.245	
Toluene*	<0.050	0.050	02/18/2019	ND	2.38	119	2.00	0.231	
Ethylbenzene*	<0.050	0.050	02/18/2019	ND	2.30	115	2.00	1.09	
Total Xylenes*	<0.150	0.150	02/18/2019	ND	6.71	112	6.00	0.610	
Total BTEX	<0.300	0.300	02/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 85.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	02/16/2019	ND	448	112	400	3.64		

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	02/15/2019	ND	168	83.8	200	11.3	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	170	85.1	200	8.22	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 74.5 % 41-142

Surrogate: 1-Chlorooctadecane 73.8 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 02/13/2019  
 Reported: 02/19/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/13/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 2 @ 4' 4" (H900583-02)**

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/18/2019	ND	2.33	116	2.00	0.245		
Toluene*	<0.050	0.050	02/18/2019	ND	2.38	119	2.00	0.231		
Ethylbenzene*	<0.050	0.050	02/18/2019	ND	2.30	115	2.00	1.09		
Total Xylenes*	<0.150	0.150	02/18/2019	ND	6.71	112	6.00	0.610		
Total BTEx	<0.300	0.300	02/18/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 85.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	02/16/2019	ND	448	112	400	3.64	

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	02/15/2019	ND	168	83.8	200	11.3	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	170	85.1	200	8.22	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 72.7 % 41-142

Surrogate: 1-Chlorooctadecane 71.4 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 02/13/2019  
 Reported: 02/19/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/13/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: W WALL @ 4' 4" (H900583-03)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
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Toluene*	<0.050	0.050	02/18/2019	ND	2.38	119	2.00	0.231	
Ethylbenzene*	<0.050	0.050	02/18/2019	ND	2.30	115	2.00	1.09	
Total Xylenes*	<0.150	0.150	02/18/2019	ND	6.71	112	6.00	0.610	
Total BTX	<0.300	0.300	02/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 91.2 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	02/16/2019	ND	448	112	400	3.64	

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	02/15/2019	ND	168	83.8	200	11.3	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	170	85.1	200	8.22	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 74.6 % 41-142

Surrogate: 1-Chlorooctadecane 73.5 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/13/2019  
 Reported: 02/19/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/13/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S WALL @ 4' 4" (H900583-04)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2019	ND	2.33	116	2.00	0.245	
Toluene*	<0.050	0.050	02/18/2019	ND	2.38	119	2.00	0.231	
Ethylbenzene*	<0.050	0.050	02/18/2019	ND	2.30	115	2.00	1.09	
Total Xylenes*	<0.150	0.150	02/18/2019	ND	6.71	112	6.00	0.610	
Total BTEX	<0.300	0.300	02/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.7 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/16/2019	ND	448	112	400	3.64	

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	02/15/2019	ND	168	83.8	200	11.3	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	170	85.1	200	8.22	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 81.0 % 41-142

Surrogate: 1-Chlorooctadecane 79.6 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 02/13/2019  
 Reported: 02/19/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/13/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: E WALL @ 4' 4" (H900583-05)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2019	ND	2.33	116	2.00	0.245	
Toluene*	<0.050	0.050	02/18/2019	ND	2.38	119	2.00	0.231	
Ethylbenzene*	<0.050	0.050	02/18/2019	ND	2.30	115	2.00	1.09	
Total Xylenes*	<0.150	0.150	02/18/2019	ND	6.71	112	6.00	0.610	
Total BTX	<0.300	0.300	02/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 81.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/16/2019	ND	448	112	400	3.64	

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	02/15/2019	ND	168	83.8	200	11.3	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	170	85.1	200	8.22	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 78.0 % 41-142

Surrogate: 1-Chlorooctadecane 76.9 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 02/13/2019  
 Reported: 02/19/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/13/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 3 @ 3' (H900583-06)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2019	ND	2.33	116	2.00	0.245	
Toluene*	<0.050	0.050	02/18/2019	ND	2.38	119	2.00	0.231	
Ethylbenzene*	<0.050	0.050	02/18/2019	ND	2.30	115	2.00	1.09	
Total Xylenes*	<0.150	0.150	02/18/2019	ND	6.71	112	6.00	0.610	
Total BTX	<0.300	0.300	02/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.4 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	02/16/2019	ND	448	112	400	3.64		

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	02/15/2019	ND	168	83.8	200	11.3	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	170	85.1	200	8.22	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 76.0 % 41-142

Surrogate: 1-Chlorooctadecane 75.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 02/13/2019  
 Reported: 02/19/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/13/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: E WALL @ 3' (H900583-07)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2019	ND	2.33	116	2.00	0.245	
Toluene*	<0.050	0.050	02/18/2019	ND	2.38	119	2.00	0.231	
Ethylbenzene*	<0.050	0.050	02/18/2019	ND	2.30	115	2.00	1.09	
Total Xylenes*	<0.150	0.150	02/18/2019	ND	6.71	112	6.00	0.610	
Total BTEX	<0.300	0.300	02/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 85.4 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	02/16/2019	ND	448	112	400	3.64		

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	02/15/2019	ND	168	83.8	200	11.3	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	170	85.1	200	8.22	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 76.0 % 41-142

Surrogate: 1-Chlorooctadecane 73.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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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A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager



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+ Cardinal cannot accept verbal changes. Please fax written changes to (575) 302-3326



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February 20, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #613

Enclosed are the results of analyses for samples received by the laboratory on 02/14/19 15:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/14/2019  
 Reported: 02/20/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: W WALL @ 3' (H900607-01)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/20/2019	ND	2.16	108	2.00	0.635	
Toluene*	<0.050	0.050	02/20/2019	ND	2.20	110	2.00	1.11	
Ethylbenzene*	<0.050	0.050	02/20/2019	ND	2.12	106	2.00	1.32	
Total Xylenes*	<0.150	0.150	02/20/2019	ND	6.03	101	6.00	1.76	
Total BTX	<0.300	0.300	02/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 84.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	672	16.0	02/18/2019	ND	416	104	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	02/15/2019	ND	171	85.3	200	7.91	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	167	83.7	200	9.01	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 82.2 % 41-142

Surrogate: 1-Chlorooctadecane 80.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 02/14/2019  
 Reported: 02/20/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: W WALL @ 4' (H900607-02)**

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/20/2019	ND	2.16	108	2.00	0.635		
Toluene*	<0.050	0.050	02/20/2019	ND	2.20	110	2.00	1.11		
Ethylbenzene*	<0.050	0.050	02/20/2019	ND	2.12	106	2.00	1.32		
Total Xylenes*	<0.150	0.150	02/20/2019	ND	6.03	101	6.00	1.76		
Total BTEx	<0.300	0.300	02/20/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 81.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/18/2019	ND	416	104	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	02/15/2019	ND	171	85.3	200	7.91	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	167	83.7	200	9.01	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 80.2 % 41-142

Surrogate: 1-Chlorooctadecane 77.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/14/2019  
 Reported: 02/20/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: N WALL @ 4' (H900607-03)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/20/2019	ND	2.16	108	2.00	0.635	
Toluene*	<0.050	0.050	02/20/2019	ND	2.20	110	2.00	1.11	
Ethylbenzene*	<0.050	0.050	02/20/2019	ND	2.12	106	2.00	1.32	
Total Xylenes*	<0.150	0.150	02/20/2019	ND	6.03	101	6.00	1.76	
Total BTX	<0.300	0.300	02/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 84.9 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	02/18/2019	ND	416	104	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	02/15/2019	ND	171	85.3	200	7.91	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	167	83.7	200	9.01	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 79.7 % 41-142

Surrogate: 1-Chlorooctadecane 76.4 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/14/2019  
 Reported: 02/20/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: E WALL @ 4' (H900607-04)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/20/2019	ND	2.16	108	2.00	0.635	
Toluene*	<0.050	0.050	02/20/2019	ND	2.20	110	2.00	1.11	
Ethylbenzene*	<0.050	0.050	02/20/2019	ND	2.12	106	2.00	1.32	
Total Xylenes*	<0.150	0.150	02/20/2019	ND	6.03	101	6.00	1.76	
Total BTEx	<0.300	0.300	02/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 85.9 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	02/18/2019	ND	416	104	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	02/15/2019	ND	171	85.3	200	7.91	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	167	83.7	200	9.01	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 79.7 % 41-142

Surrogate: 1-Chlorooctadecane 76.5 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 02/14/2019  
 Reported: 02/20/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S WALL @ 3' 6" (H900607-05)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/20/2019	ND	2.16	108	2.00	0.635	
Toluene*	<0.050	0.050	02/20/2019	ND	2.20	110	2.00	1.11	
Ethylbenzene*	<0.050	0.050	02/20/2019	ND	2.12	106	2.00	1.32	
Total Xylenes*	<0.150	0.150	02/20/2019	ND	6.03	101	6.00	1.76	
Total BTX	<0.300	0.300	02/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 85.9 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	02/18/2019	ND	416	104	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	02/15/2019	ND	171	85.3	200	7.91	
DRO >C10-C28*	<10.0	10.0	02/15/2019	ND	167	83.7	200	9.01	
EXT DRO >C28-C36	<10.0	10.0	02/15/2019	ND					

Surrogate: 1-Chlorooctane 69.3 % 41-142

Surrogate: 1-Chlorooctadecane 66.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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---

### 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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A handwritten signature in black ink, appearing to read "Celey D. Keene", is written over a horizontal line.

---

Celey D. Keene, Lab Director/Quality Manager



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

+ Cardinal cannot accept verbal change. Please for written change to (575) 202-2228





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

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February 21, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #613

Enclosed are the results of analyses for samples received by the laboratory on 02/15/19 15:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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



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

**Analytical Results For:**

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

Received: 02/15/2019  
 Reported: 02/21/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: N WALL BEHIND PIPELINE (H900624-01)**

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/20/2019	ND	1.92	96.0	2.00	4.30	
<b>Toluene*</b>	<b>0.114</b>	0.050	02/20/2019	ND	1.95	97.3	2.00	3.96	
<b>Ethylbenzene*</b>	<b>0.067</b>	0.050	02/20/2019	ND	1.97	98.7	2.00	3.53	
Total Xylenes*	<0.150	0.150	02/20/2019	ND	5.78	96.3	6.00	3.39	
Total BTEX	<0.300	0.300	02/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.4 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>80.0</b>	16.0	02/19/2019	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	02/18/2019	ND	177	88.7	200	11.3	
DRO >C10-C28*	<10.0	10.0	02/18/2019	ND	182	91.1	200	9.86	
EXT DRO >C28-C36	<10.0	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 69.5 % 41-142

Surrogate: 1-Chlorooctadecane 67.0 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/15/2019  
 Reported: 02/21/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: W WALL @ 3' (H900624-02)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/19/2019	ND	1.92	96.0	2.00	4.30	
Toluene*	<0.050	0.050	02/19/2019	ND	1.95	97.3	2.00	3.96	
Ethylbenzene*	0.060	0.050	02/19/2019	ND	1.97	98.7	2.00	3.53	
Total Xylenes*	<0.150	0.150	02/19/2019	ND	5.78	96.3	6.00	3.39	
Total BTEx	<0.300	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.6 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	992	16.0	02/19/2019	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	02/18/2019	ND	177	88.7	200	11.3	
DRO >C10-C28*	<10.0	10.0	02/18/2019	ND	182	91.1	200	9.86	
EXT DRO >C28-C36	<10.0	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 74.4 % 41-142

Surrogate: 1-Chlorooctadecane 73.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 02/15/2019  
 Reported: 02/21/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 4 @ 3' (H900624-03)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/19/2019	ND	1.92	96.0	2.00	4.30		
Toluene*	<0.050	0.050	02/19/2019	ND	1.95	97.3	2.00	3.96		
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.97	98.7	2.00	3.53		
Total Xylenes*	<0.150	0.150	02/19/2019	ND	5.78	96.3	6.00	3.39		
Total BTEx	<0.300	0.300	02/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.8 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	02/19/2019	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	02/19/2019	ND	187	93.6	200	7.12	
DRO >C10-C28*	<10.0	10.0	02/19/2019	ND	200	99.8	200	0.645	
EXT DRO >C28-C36	<10.0	10.0	02/19/2019	ND					

Surrogate: 1-Chlorooctane 75.4 % 41-142

Surrogate: 1-Chlorooctadecane 73.5 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/15/2019  
 Reported: 02/21/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: N WALL @ 3' (H900624-04)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/19/2019	ND	1.92	96.0	2.00	4.30		
Toluene*	<0.050	0.050	02/19/2019	ND	1.95	97.3	2.00	3.96		
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.97	98.7	2.00	3.53		
Total Xylenes*	<0.150	0.150	02/19/2019	ND	5.78	96.3	6.00	3.39		
Total BTX	<0.300	0.300	02/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	02/19/2019	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	02/19/2019	ND	187	93.6	200	7.12	
DRO >C10-C28*	<10.0	10.0	02/19/2019	ND	200	99.8	200	0.645	
EXT DRO >C28-C36	<10.0	10.0	02/19/2019	ND					

Surrogate: 1-Chlorooctane 86.7 % 41-142

Surrogate: 1-Chlorooctadecane 82.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/15/2019  
 Reported: 02/21/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S WALL @ 3' (H900624-05)**

BTEx 8021B			mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/19/2019	ND	1.92	96.0	2.00	4.30		
Toluene*	<0.050	0.050	02/19/2019	ND	1.95	97.3	2.00	3.96		
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.97	98.7	2.00	3.53		
Total Xylenes*	<0.150	0.150	02/19/2019	ND	5.78	96.3	6.00	3.39		
Total BTEx	<0.300	0.300	02/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.0 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	02/19/2019	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	02/19/2019	ND	187	93.6	200	7.12	
DRO >C10-C28*	<10.0	10.0	02/19/2019	ND	200	99.8	200	0.645	
EXT DRO >C28-C36	<10.0	10.0	02/19/2019	ND					

Surrogate: 1-Chlorooctane 87.4 % 41-142

Surrogate: 1-Chlorooctadecane 81.5 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 02/15/2019  
 Reported: 02/21/2019  
 Project Name: NEDU #613  
 Project Number: NEDU #613  
 Project Location: NONE GIVEN

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: E WALL @ 3' (H900624-06)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/19/2019	ND	1.92	96.0	2.00	4.30		
Toluene*	<0.050	0.050	02/19/2019	ND	1.95	97.3	2.00	3.96		
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.97	98.7	2.00	3.53		
Total Xylenes*	<0.150	0.150	02/19/2019	ND	5.78	96.3	6.00	3.39		
Total BTX	<0.300	0.300	02/19/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	02/19/2019	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	02/19/2019	ND	187	93.6	200	7.12	
DRO >C10-C28*	<10.0	10.0	02/19/2019	ND	200	99.8	200	0.645	
EXT DRO >C28-C36	<10.0	10.0	02/19/2019	ND					

Surrogate: 1-Chlorooctane 87.3 % 41-142

Surrogate: 1-Chlorooctadecane 81.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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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A handwritten signature in black ink, appearing to read "Caley D. Keene".

---

Caley D. Keene, Lab Director/Quality Manager

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February 27, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: DEDU #613

Enclosed are the results of analyses for samples received by the laboratory on 02/26/19 16:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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".

Celey D. Keene

Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 02/26/2019  
 Reported: 02/27/2019  
 Project Name: DEDU #613  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

Sampling Date: 02/26/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: N WALL @ 4' (H900735-01)**

BTEX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2019	ND	2.20	110	2.00	1.43	
Toluene*	<0.050	0.050	02/27/2019	ND	2.05	103	2.00	1.71	
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.15	108	2.00	0.696	
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.46	108	6.00	0.107	
Total BTEX	<0.300	0.300	02/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	02/27/2019	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	02/27/2019	ND	232	116	200	1.60	
DRO >C10-C28*	<10.0	10.0	02/27/2019	ND	276	138	200	11.4	
EXT DRO >C28-C36	<10.0	10.0	02/27/2019	ND					

Surrogate: 1-Chlorooctane 74.9 % 41-142

Surrogate: 1-Chlorooctadecane 74.9 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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---

### 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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A handwritten signature in cursive script, appearing to read "Celey D. Keene", written in black ink.

---

Celey D. Keene, Lab Director/Quality Manager

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dump truck  
out Cont. Dirt  
3-11-19 - 3  
3-12-19 - 1

→ 47  
3-5-19 49  
3-6-19 55 11  
3-7-19 50 10  
3-8-19 50 10  
3-11-19 ~~42~~ 52  
3-12-19 46

Cont.  
Dirt

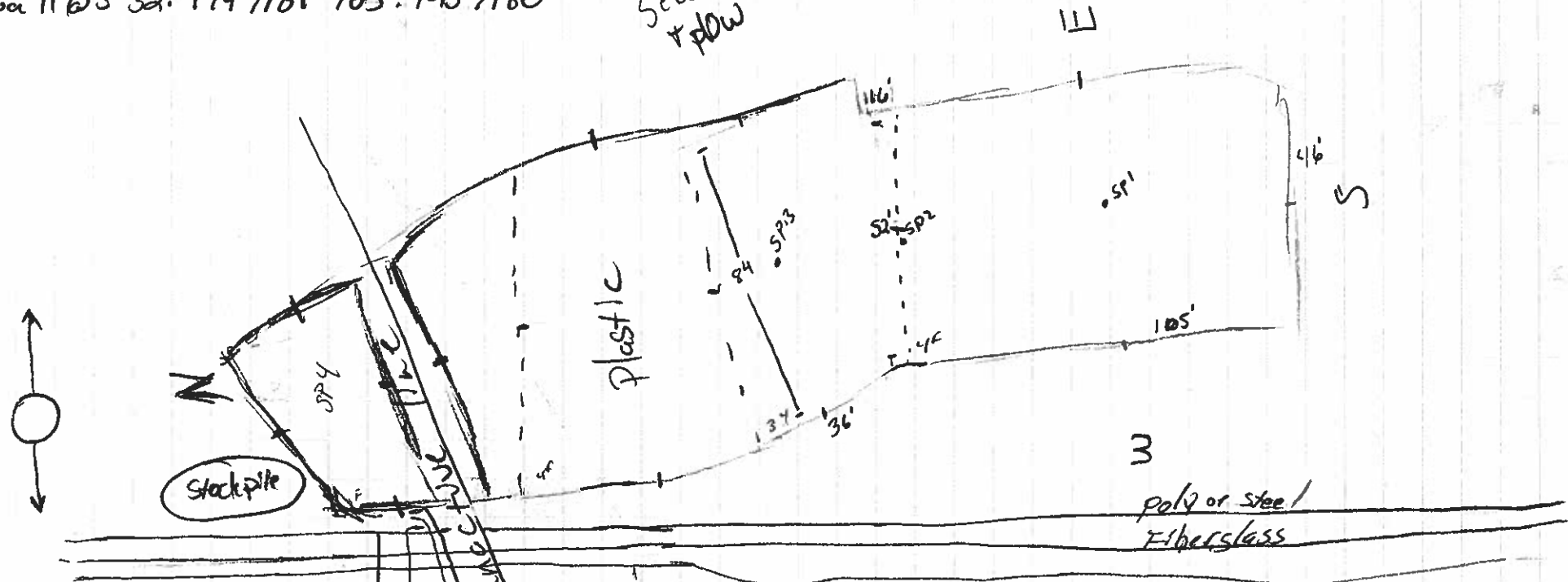
Page 48 of 49

80  
40  
29  
27  

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205

4/15/19  
Seed  
+ pow



2.4800481 s2c1000  
103.1438323  
45 clean  
14541  
2.4800028 D174  
103.1438055

E. wall @ 4' 32.4798699-103.1434377  
 NW wall @ 4' 32.4798660-103.1437613  
 S wall @ 4' 32.4798235-103.1437670  
 SW wall @ 3' 6" 32.4797986-103.1435893

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W wall @ 3' 32.4800868-103.1437626  
 NW wall behind pipe line 32.4799760-103.1436238  
 E wall @ 3' 32.4800394-103.1435913



**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
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Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
  
Action 10741

CONDITIONS

Operator: APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID: 873
	Action Number: 10741
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	9/8/2022