



303 Veterans Airpark Lane Midland, TX 79705

Remediation Plan

September 21, 2020

Re: NEDU 625

Case # NRM2019755640

Background:

On 6/23/2020 a release occurred due to a stuffing box failure. The release (GPS: 32.4790459, -103.1551971) is located north of Eunice, New Mexico in unit letter E section 15 township 21S range 37E. A groundwater survey was conducted utilizing NMOSE and USGS wells of record. The nearest well of record suggest the groundwater depth below the release to be 63 feet below ground surface.

On 9/1/2020 a vertical (SP1) was conducted utilizing a backhoe with samples collected in one foot intervals to a depth of 3 feet. All samples were submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. Horizontal 5 point surface composite samples were collected and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. Laboratory TPH results were above table one standards at the surface for releases 51-100 feet to groundwater.

Remediation Plan:

Apache Corporation proposes that the release area be excavated to a depth of 6 inches to 1 foot. Final 5 point bottom and wall composite samples will be collected not exceeding 200 square feet and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. All excavated soil (80 yards) will be hauled to an OCD approved disposal facility. Once laboratory results are below table one standards for releases 51-100 feet to groundwater the excavation will be backfilled with clean imported caliche and the pad restored. The remediation will be completed within six months of OCD approval of the plan.

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

Submitted by;

Bruce Baker

Environmental Technician

larry.baker@apachecorp.com

Cell# 432-631-6982

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>63</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Incident ID	
District RP	
Facility ID	
Application ID	

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.

Printed Name: Larry Baker Title: Environmental Tech SR.
Signature: Larry Baker Date: 9/21/2020
email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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.

Printed Name: Larry Baker Title: Environmental Tech SR.
Signature: Larry Baker Date: 9/21/2020
email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____



CP 00554 70 ft.
USGS 322902103093401 63 ft.

NEDU 625
SP1
HC4
HC3
HC2

Agency code = usgs

site_no list =

- 322902103093401

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload**USGS 322902103093401 21S.37E.16.222321**

Available data for this site

Groundwater: Field measurements



GO

Lea County, New Mexico

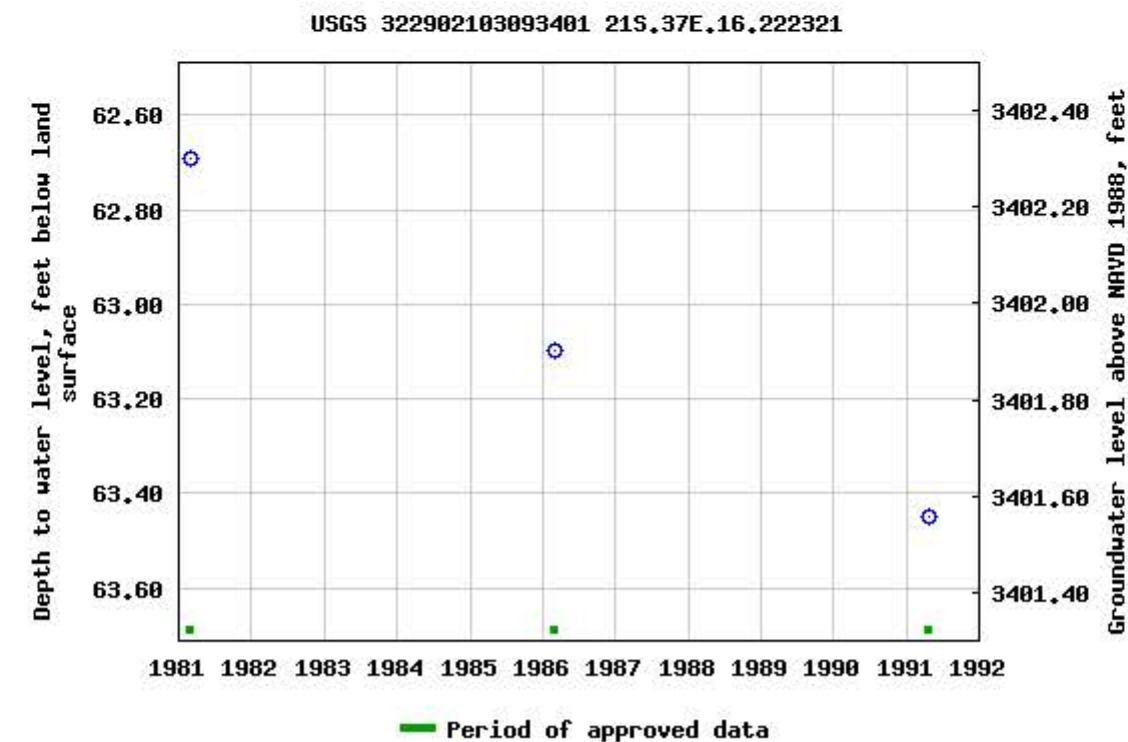
Hydrologic Unit Code 13070007

Latitude 32°29'02", Longitude 103°09'34" NAD27

Land-surface elevation 3,465 feet above NAVD88

The depth of the well is 80 feet below land surface.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)


Breaks in the plot represent a gap of at least one year between field measurements.

[Download a presentation-quality graph](#)



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	CP 00554		2	2	16	21S	37E	672744	3595610* 
Driller License:	208	Driller Company:				VAN NOY, W.L.			
Driller Name:	VAN NOY, W.L.								
Drill Start Date:	06/01/1976	Drill Finish Date:				06/05/1976		Plug Date:	
Log File Date:	04/05/1977	PCW Rcv Date:						Source:	Shallow
Pump Type:		Pipe Discharge Size:						Estimated Yield:	
Casing Size:	5.00	Depth Well:				80 feet		Depth Water:	70 feet
Water Bearing Stratifications:					Top	Bottom	Description		
					75	80	Sandstone/Gravel/Conglomerate		
Casing Perforations:					Top	Bottom			
					64	80			

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

9/21/20 9:56 AM

POINT OF DIVERSION SUMMARY

Please Select a Coordinate System and enter the coordinates:

GCS_WGS_1984

Show





© 2020 Google

Google earth



Delineation Samples

Sample Date	Sample ID	Depth	Chloride Field	Chloride Lab	Benzene	Toulene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS Coordinates
9/1/2020	SP 1	S	4,964	8800	<0.050	<0.050	<0.050	<0.150	<0.300	<50.0	12500	4040	32.47915, -103.15515
9/1/2020		1'	178	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
9/1/2020		2'	179	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	83.7	19	
9/1/2020		3'	148	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	
9/1/2020	HC1	S	146	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.47922, -103.15512
9/1/2020	HC2	S	296	48.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.47901, -103.15519
9/1/2020	HC3	S	176	32.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.47908, -103.15539
9/1/2020	HC4	S	240	80.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	24	<10.0	32.47917, -103.15524



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

September 04, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #625

Enclosed are the results of analyses for samples received by the laboratory on 09/01/20 14:09.

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.

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: 09/01/2020
 Reported: 09/04/2020
 Project Name: NEDU #625
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/01/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ SURFACE (H002322-01)

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	09/02/2020	ND	1.90	94.8	2.00	7.17	
Toluene*	<0.050	0.050	09/02/2020	ND	1.92	96.0	2.00	6.59	
Ethylbenzene*	<0.050	0.050	09/02/2020	ND	1.91	95.6	2.00	6.32	
Total Xylenes*	<0.150	0.150	09/02/2020	ND	5.87	97.9	6.00	6.24	
Total BTEX	<0.300	0.300	09/02/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	8800	16.0	09/02/2020	ND	432	108	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<50.0	50.0	09/02/2020	ND	209	104	200	1.18		
DRO >C10-C28*	12500	50.0	09/02/2020	ND	225	113	200	2.08		
EXT DRO >C28-C36	4040	50.0	09/02/2020	ND						

Surrogate: 1-Chlorooctane 91.9 % 44.3-144

Surrogate: 1-Chlorooctadecane 655 % 42.2-156

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



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: 09/01/2020
 Reported: 09/04/2020
 Project Name: NEDU #625
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/01/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 1' (H002322-02)

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	09/02/2020	ND	2.09	105	2.00	4.21	
Toluene*	<0.050	0.050	09/02/2020	ND	2.11	106	2.00	4.33	
Ethylbenzene*	<0.050	0.050	09/02/2020	ND	2.10	105	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/02/2020	ND	6.05	101	6.00	4.43	
Total BTX	<0.300	0.300	09/02/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	09/02/2020	ND	400	100	400	3.92	QR-03

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	09/03/2020	ND	207	104	200	4.22	
DRO >C10-C28*	<10.0	10.0	09/03/2020	ND	218	109	200	7.80	QR-03
EXT DRO >C28-C36	<10.0	10.0	09/03/2020	ND					

Surrogate: 1-Chlorooctane 78.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 80.8 % 42.2-156

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



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: 09/01/2020
 Reported: 09/04/2020
 Project Name: NEDU #625
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/01/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 2' (H002322-03)

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	09/02/2020	ND	2.09	105	2.00	4.21	
Toluene*	<0.050	0.050	09/02/2020	ND	2.11	106	2.00	4.33	
Ethylbenzene*	<0.050	0.050	09/02/2020	ND	2.10	105	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/02/2020	ND	6.05	101	6.00	4.43	
Total BTX	<0.300	0.300	09/02/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	09/02/2020	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/03/2020	ND	207	104	200	4.22	
DRO >C10-C28*	83.7	10.0	09/03/2020	ND	218	109	200	7.80	
EXT DRO >C28-C36	19.0	10.0	09/03/2020	ND					

Surrogate: 1-Chlorooctane 83.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 90.5 % 42.2-156

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



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: 09/01/2020
 Reported: 09/04/2020
 Project Name: NEDU #625
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/01/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 3' (H002322-04)

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	09/02/2020	ND	2.09	105	2.00	4.21	
Toluene*	<0.050	0.050	09/02/2020	ND	2.11	106	2.00	4.33	
Ethylbenzene*	<0.050	0.050	09/02/2020	ND	2.10	105	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/02/2020	ND	6.05	101	6.00	4.43	
Total BTX	<0.300	0.300	09/02/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	<16.0	16.0	09/02/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/03/2020	ND	207	104	200	4.22	
DRO >C10-C28*	<10.0	10.0	09/03/2020	ND	218	109	200	7.80	
EXT DRO >C28-C36	<10.0	10.0	09/03/2020	ND					

Surrogate: 1-Chlorooctane 94.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 101 % 42.2-156

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



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: 09/01/2020
 Reported: 09/04/2020
 Project Name: NEDU #625
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/01/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: HC 1 (H002322-05)

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	09/02/2020	ND	2.09	105	2.00	4.21	
Toluene*	<0.050	0.050	09/02/2020	ND	2.11	106	2.00	4.33	
Ethylbenzene*	<0.050	0.050	09/02/2020	ND	2.10	105	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/02/2020	ND	6.05	101	6.00	4.43	
Total BTX	<0.300	0.300	09/02/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	<16.0	16.0	09/02/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/03/2020	ND	207	104	200	4.22	
DRO >C10-C28*	<10.0	10.0	09/03/2020	ND	218	109	200	7.80	
EXT DRO >C28-C36	<10.0	10.0	09/03/2020	ND					

Surrogate: 1-Chlorooctane 78.9 % 44.3-144

Surrogate: 1-Chlorooctadecane 83.9 % 42.2-156

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



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: 09/01/2020
 Reported: 09/04/2020
 Project Name: NEDU #625
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/01/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: HC 2 (H002322-06)

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	09/02/2020	ND	2.09	105	2.00	4.21	
Toluene*	<0.050	0.050	09/02/2020	ND	2.11	106	2.00	4.33	
Ethylbenzene*	<0.050	0.050	09/02/2020	ND	2.10	105	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/02/2020	ND	6.05	101	6.00	4.43	
Total BTX	<0.300	0.300	09/02/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	09/02/2020	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/03/2020	ND	207	104	200	4.22	
DRO >C10-C28*	<10.0	10.0	09/03/2020	ND	218	109	200	7.80	
EXT DRO >C28-C36	<10.0	10.0	09/03/2020	ND					

Surrogate: 1-Chlorooctane 93.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 97.8 % 42.2-156

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



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: 09/01/2020
 Reported: 09/04/2020
 Project Name: NEDU #625
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/01/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: HC 3 (H002322-07)

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	09/02/2020	ND	2.09	105	2.00	4.21	
Toluene*	<0.050	0.050	09/02/2020	ND	2.11	106	2.00	4.33	
Ethylbenzene*	<0.050	0.050	09/02/2020	ND	2.10	105	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/02/2020	ND	6.05	101	6.00	4.43	
Total BTX	<0.300	0.300	09/02/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	32.0	16.0	09/02/2020	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/03/2020	ND	207	104	200	4.22	
DRO >C10-C28*	<10.0	10.0	09/03/2020	ND	218	109	200	7.80	
EXT DRO >C28-C36	<10.0	10.0	09/03/2020	ND					

Surrogate: 1-Chlorooctane 86.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 87.0 % 42.2-156

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



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: 09/01/2020
 Reported: 09/04/2020
 Project Name: NEDU #625
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 09/01/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: HC 4 (H002322-08)

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	09/02/2020	ND	2.09	105	2.00	4.21	
Toluene*	<0.050	0.050	09/02/2020	ND	2.11	106	2.00	4.33	
Ethylbenzene*	<0.050	0.050	09/02/2020	ND	2.10	105	2.00	4.48	
Total Xylenes*	<0.150	0.150	09/02/2020	ND	6.05	101	6.00	4.43	
Total BTX	<0.300	0.300	09/02/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	09/02/2020	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/03/2020	ND	207	104	200	4.22	
DRO >C10-C28*	24.0	10.0	09/03/2020	ND	218	109	200	7.80	
EXT DRO >C28-C36	<10.0	10.0	09/03/2020	ND					

Surrogate: 1-Chlorooctane 79.7 % 44.3-144

Surrogate: 1-Chlorooctadecane 81.9 % 42.2-156

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



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

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.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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

*=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.

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

FOKIM-006 R.S. 1 06/04/20

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

NEDU 625 9/1/20

SP1 @ Surface - 32.47915, -103.15515

$$10.0 / 30.1 = 3.01 = 1.65 = 4,964 \times 0741$$

SP1 @ 1'

$$10.1 / 30.1 = 2.98 = .06 = 178 \checkmark 0810$$

SP1 @ 2'

$$10.0 / 30.0 = 3 = .06 = 179 \checkmark 0812$$

SP1 @ 3'

$$10.1 / 30.0 = 2.97 = .05 = 148 0814$$

HC1 - 32.47922, -103.15512 0901

$$10.3 / 30.8 = 2.93 = .05 = 146$$

HC2 - 32.47901, -103.15519 0903

$$10.4 / 30.0 = 2.97 = .10 = 296$$

HC3 - 32.47908, -103.15539 0904

$$10.2 / 30.0 = 2.94 = .06 = 176$$

HC4 - 32.47917, -103.15524 0905

$$10.8 / 30.8 = 3.01 = .08 = 240$$