



June 25, 2021

NMOCD Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, NM 87505

Re: Remediation Plan  
Apache Corporation – EAU Emulsion Line  
Incident ID: nAB1606057005

To Whom It May Concern

RXSoil, Inc. is pleased to submit the remediation plan for the on-site remediation of impacted soil for the above release.

Sincerely,

Jace Caraway  
Chief Operating Officer  
RXSoil, Inc.  
(940) 210-2051

Zach Robbins  
Technical and Engineering Analyst  
RXSoil, Inc.  
(210) 400-7645

RXSoil, Inc.  
201 Main St. Ste. 1360, Fort Worth, TX 76102

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## I. Introduction

On behalf of Apache Corporation, RXSoil, Inc. ("RXSoil") has prepared this work plan that describes remediation of the release of nAB1606057005.

The release occurred on 2/24/2016 in Unit Letter C, Section 11, Township 18S, Range 27E (see *Figure 1* for Vicinity Map) at approximate coordinates 32.76804, -104.25103.

## II. Site Assessment/Characterization

1. **Site Map** – See *Figure 2*
2. **Depth to ground water** – Nearest water well (listed in *Appendix A*) has a reported depth to water of 50'. The release is within a high-potential karst area, as identified in the Bureau of Land Management GIS. This remediation will follow guidelines for a release with a depth to groundwater of <50' BGS.
3. **Wellhead protection area** – There are no known water sources within a half mile of the release.
4. **Distance to nearest significant watercourse** – The nearest water way is 1,900' away from the release area at its closest point (see *Figure 3*). This is a stream connecting to the Pecos River approximately 27,000' downstream.
5. **Soil/waste characteristics** – A recent delineation was performed in January of 2020 and a follow-up was performed in April of 2021 to determine extent of the plume. Sample points are shown in *Figure 4* with results summarized in *Appendix B*. Lab data is displayed in *Appendix C*. Further delineation will occur during excavation. Sampling will be conducted to confirm proper excavation and will consist of sampling sidewalls and the bottom of excavation using composites representing <200 square feet. Excavation will continue throughout the spill area to clean material per strictest thresholds given in Table I. Excavation will be guided by field data and confirmed via a third-party laboratory.

## III. Remediation Plan

The most recent delineation map can be seen in *Figure 2* with results in *Appendix B*. As stated in **Section II**, further delineation will be conducted throughout excavation.

RXSoil's core process of on-site remediation was used to address the contamination. RXSoil will supervise all excavation with approval from area utilities owners via NM 811.

RXSoil will construct an above-ground treatment cell (see *Figure 2* for projected placement). Berms will be constructed around the perimeter of the cell area. A 20-mil reinforced poly liner will be placed on the surface and up the sides of the berms to contain treatment. A proprietary drainage and collection system will be installed prior to filling the cells. All contaminated soil will be placed in the contained treatment cell for treatment. It is estimated 5,000 cubic yards will require remediation.

Once all contaminated material is in the treatment cell, chemical treatment will begin. To confirm

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102

successful treatment, confirmation samples will be gathered from the bottom 12" of the treated soil with one sample representing no more than 100 cubic yards as agreed upon in previous work. If a sample were to test above threshold, treatment would continue in that area until the soil tested clean, per strictest Table I guidelines for impacted soils.

Sidewall and bottom samples will be taken using a stainless-steel hand shovel while remediation samples will be taken using a stainless-steel bucket auger. All tools are to be decontaminated before each sample, as specified in *Field Equipment Cleaning and Decontamination* (EPA, 2015). This includes wiping the equipment clean, water-rinsing the equipment, washing the equipment in detergent and water, and rinsing the equipment in water.

Samples will temporarily be transferred to a new plastic bag in the field. Once in a location safer for handling glass, the samples will be transferred to glass jars, supplied by an approved laboratory. The threads on all jars will be wiped clean to allow an air-tight seal. Samples will be transferred on ice to a third-party laboratory to ensure tests are completed the EPA recommended time period.

#### **IV. Restoration, Reclamation and Re-Vegetation**

Following remediation, RXSoil will drill in seed at the discretion of the appropriate surface owners (BLM and SLO). RXSoil will continue to monitor this area to ensure growth. The remediation is expected to take 30 days.

RXSoil, Inc.

201 Main St. Ste. 1360, Fort Worth, TX 76102



# Figure 1 - Vicinity Map

Legend

•

Feature 1

📌

Release Point

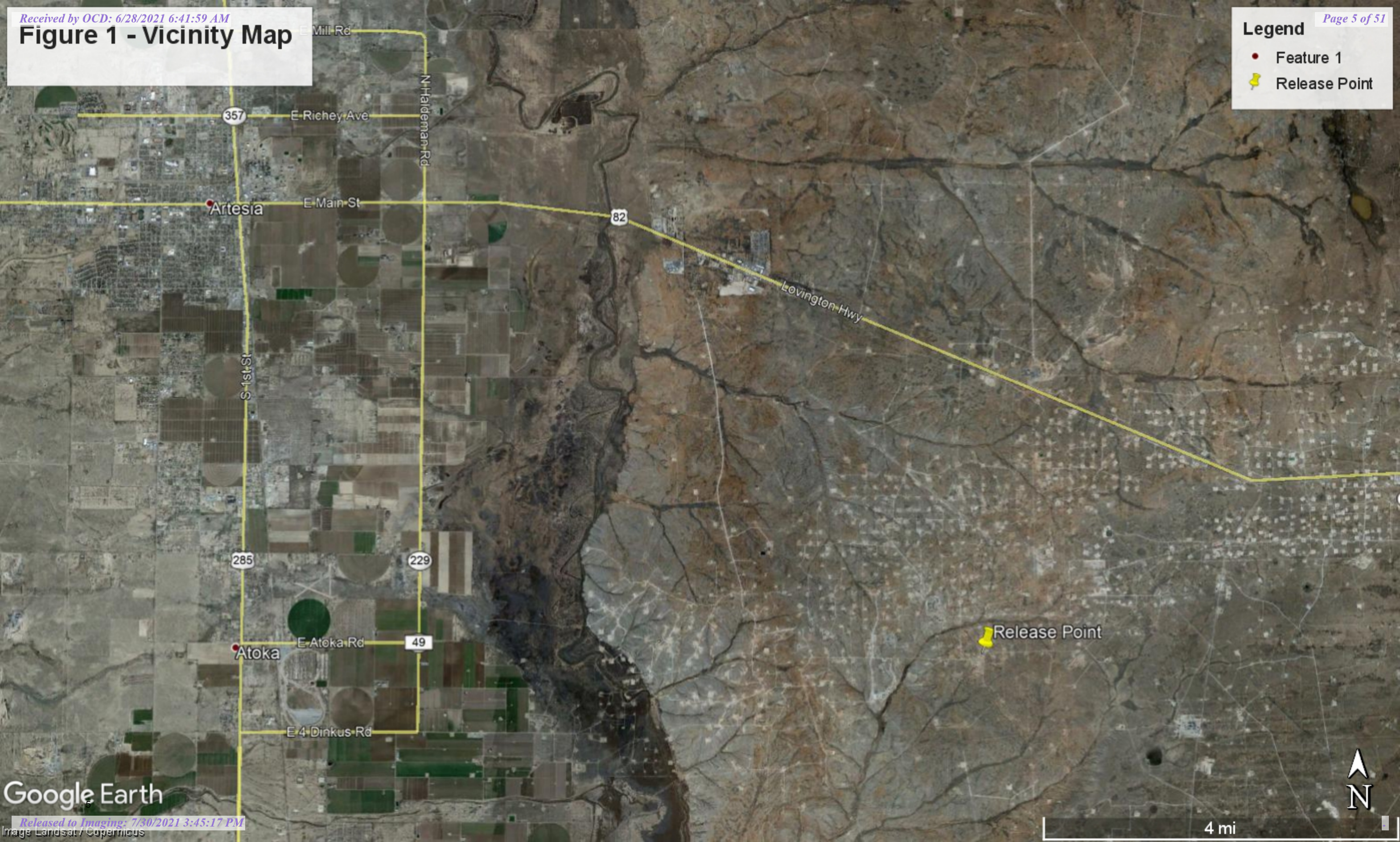
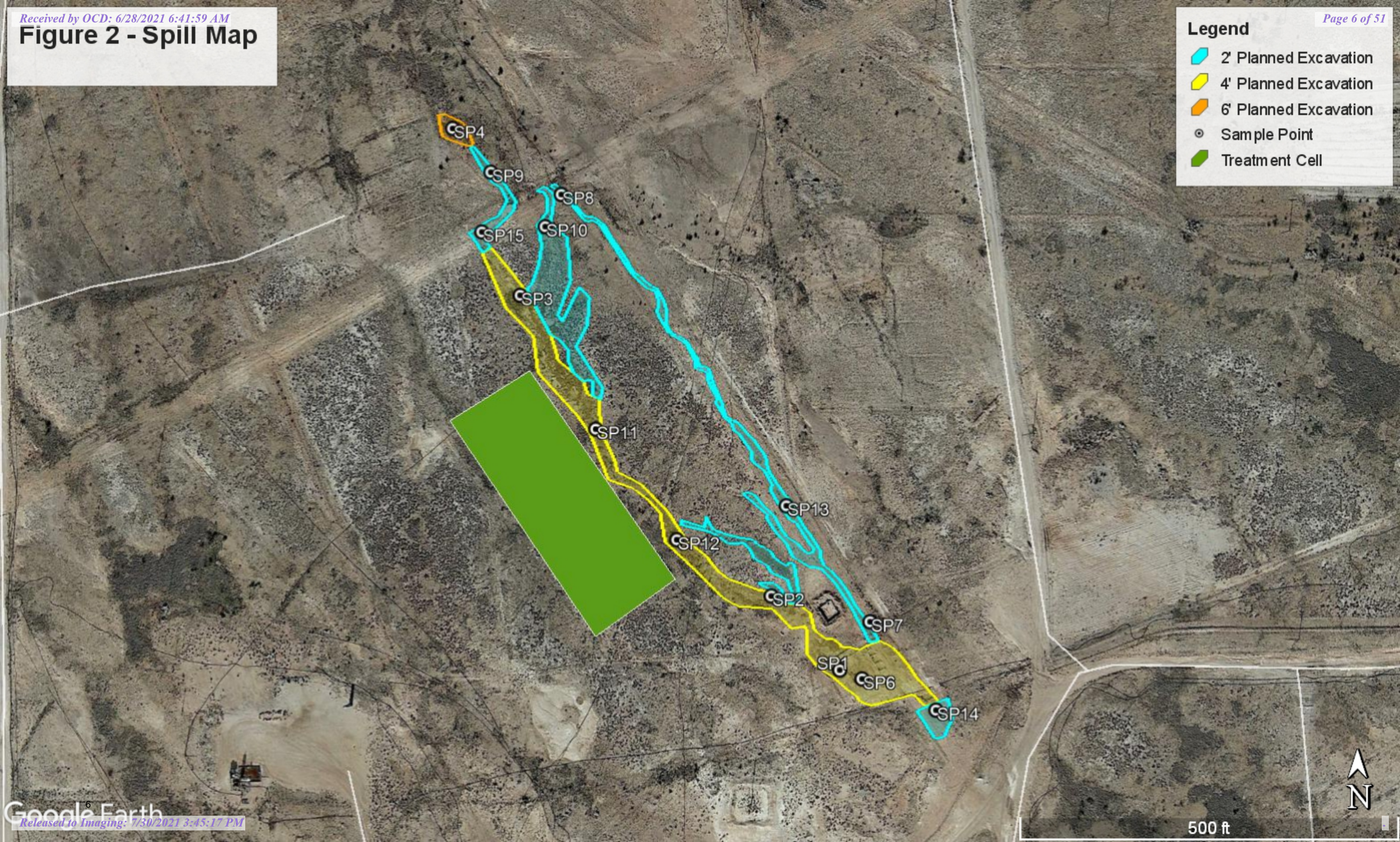




Figure 2 - Spill Map

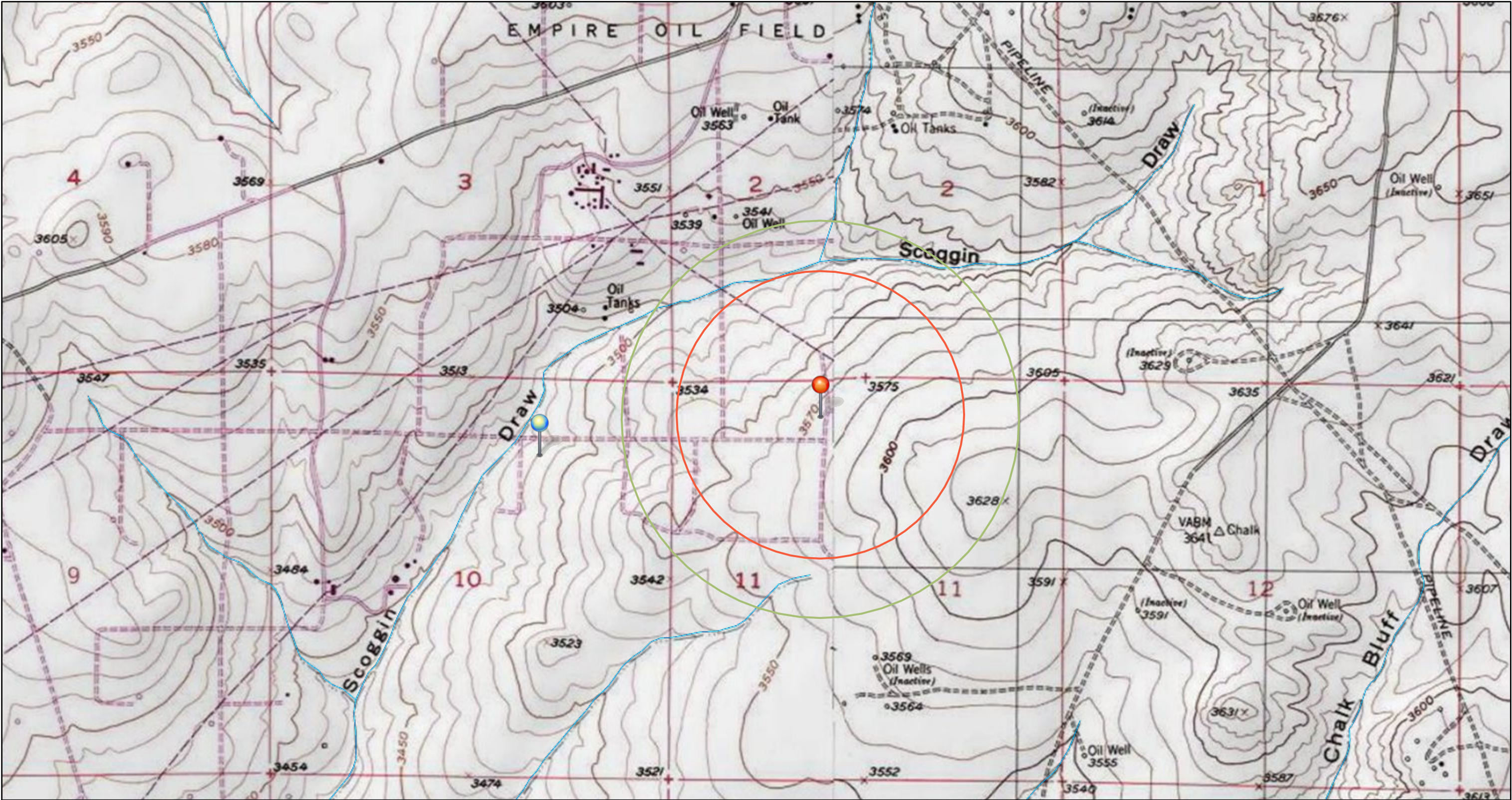
**Legend**

- 2' Planned Excavation
- 4' Planned Excavation
- 6' Planned Excavation
- Sample Point
- Treatment Cell





# Hydrology Map



3/13/2019, 1:03:37 PM

Areas

0.5 mile radius

1900' radius

Points



Nearest Well Location



Release Location



OSE Water-bodies

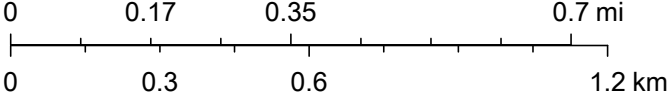


PLJV Probable Playas



OSE Streams

1:18,056



Copyright:© 2013 National Geographic Society, i-cubed, OCD



## **APPENDIX A**

**C-141**

**RXSoil, Inc.**

**201 Main St. Ste. 1360, Fort Worth, TX 76102**



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>50</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 checked="" type="checkbox"/> Yes <input 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 <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input 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.



State of New Mexico  
Oil Conservation Division

Incident ID	nAB1606057005
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: 6/25/2021  
email: larry.baker@apachecorp.com Telephone: 432-631-6982

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



Incident ID	nAB1606057005
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: 6/25/2021  
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: Bradford Billings Date: 07/30/2021



## **APPENDIX B**

### **WATER COLUMN/AVERAGE DEPTH TO WATER**

**RXSoil, Inc.**

**201 Main St. Ste. 1360, Fort Worth, TX 76102**



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the  
POD suffix indicates the  
POD has been replaced  
& no longer serves a  
water right file.)

(R=POD has  
been replaced,  
O=orphaned,  
C=the file is  
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
RA 03917		RA	LE	4	1	2	10	18S	27E	569019	3625660*	1141	130	50	80
													Average Depth to Water:	50 feet	
													Minimum Depth:	50 feet	
													Maximum Depth:	50 feet	

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 570149

Northing (Y): 3625820

Radius: 1500

\*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.



## **APPENDIX C**

### **DELINEATION SUMMARY TABLE**

**RXSoil, Inc.**

**201 Main St. Ste. 1360, Fort Worth, TX 76102**

Apache - EAU Emulsion Line							
Sample Name	Sample Depth (ft)	Sample Date	Lab ID Sample	Chloride	Benzene	BTEX	TPH
					8021B		8015M
SP1	Surface	1/13/2020		<b>4880</b>	<0.050	<0.150	<b>587</b>
	2	1/13/2020		352	<0.050	<0.150	<30.0
	4	1/13/2020		<b>752</b>	<0.050	<0.150	<30.0
	6	1/13/2020		352	<0.050	<0.150	<30.0
SP2	Surface	1/13/2020		<b>4720</b>	<0.050	<0.150	<b>58900</b>
	2	1/13/2020		<b>896</b>	<0.050	<0.150	<b>845</b>
	3	1/13/2020		545	-	-	
	4	1/13/2020		<b>884</b>	<0.050	<0.150	<b>289.4</b>
	5	1/22/2020		ND	<0.050	<0.150	<30.0
SP3	Surface	1/13/2020		<b>36800</b>	<0.050	<0.150	<b>582</b>
	2	1/13/2020		<b>3520</b>	<0.050	<0.150	<30.0
	4	1/14/2020		320	<0.050	<0.150	<30.0
	5	1/14/2020		400	<0.050	<0.150	<30.0
SP4	Surface	1/13/2020		<b>14900</b>	<0.050	<0.150	<b>44020</b>
	2	1/13/2020		160	<0.050	<0.150	<b>5995</b>
	4	1/13/2020		<b>1040</b>	<0.050	<0.150	<b>105.1</b>
	5	1/14/2020		<b>1200</b>	<0.050	<0.150	<30.0
	6	1/22/2020		64	<0.050	<0.150	<30.0
SP5	Surface	1/13/2020		<b>880</b>	<0.050	<0.150	<b>10580</b>
	1	1/13/2020		400	<0.050	<0.150	<b>170</b>
	3	1/22/2020		ND	<0.050	<0.150	<30.0
SP6	Surface	1/14/2020		<b>5280</b>	<0.050	<0.150	50.2
	2	1/14/2020		<b>1060</b>	<0.050	<0.150	<30.0
	4	1/14/2020		464	<0.050	<0.150	<30.0
SP7	2	4/22/2021		384	-	-	-
SP8	2	4/22/2021		462	-	-	-
SP9	2	4/22/2021		<b>1071</b>	-	-	-
SP9	3	4/26/2021		188	-	-	-
SP10	2	4/22/2021		<b>635</b>	-	-	-
SP11	4	4/22/2021		484	-	-	-
SP12	4	4/22/2021		427	-	-	-
SP13	2	4/22/2021		271	-	-	-
SP14	2	4/22/2021		270	-	-	-
SP15	2	4/22/2021		80	-	-	-
NMOCD Thresholds				<b>600</b>	<b>10</b>	<b>50</b>	<b>100</b>

All data points given in mg/kg unless otherwise stated

**Bold** results represent over-threshold and must be remediated

"ND" represents Non-detectable results



**APPENDIX D**

**LABORATORY REPORTS**

RXSoil, Inc.  
201 Main St. Ste. 1360, Fort Worth, TX 76102



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

---

January 16, 2020

JEFFREY BROOM

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EMISSION LINE

Enclosed are the results of analyses for samples received by the laboratory on 01/13/20 16:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 1 SURFACE 32.7681664-104.2514455 (H000112-01)**

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	01/14/2020	ND	2.27	114	2.00	2.72	
Toluene*	<0.050	0.050	01/14/2020	ND	2.29	114	2.00	3.21	
Ethylbenzene*	<0.050	0.050	01/14/2020	ND	2.26	113	2.00	3.07	
Total Xylenes*	<0.150	0.150	01/14/2020	ND	6.71	112	6.00	3.02	
Total BTEX	<0.300	0.300	01/14/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 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	4880	16.0	01/15/2020	ND	432	108	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	01/15/2020	ND	207	103	200	4.20	
DRO >C10-C28*	402	10.0	01/15/2020	ND	214	107	200	7.17	
EXT DRO >C28-C36	187	10.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 91.8 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 1 @ 2' (H000112-02)**

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	01/14/2020	ND	2.27	114	2.00	2.72		
Toluene*	<0.050	0.050	01/14/2020	ND	2.29	114	2.00	3.21		
Ethylbenzene*	<0.050	0.050	01/14/2020	ND	2.26	113	2.00	3.07		
Total Xylenes*	<0.150	0.150	01/14/2020	ND	6.71	112	6.00	3.02		
Total BTEx	<0.300	0.300	01/14/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	352	16.0	01/15/2020	ND	432	108	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	01/15/2020	ND	207	103	200	4.20	
DRO >C10-C28*	<10.0	10.0	01/15/2020	ND	214	107	200	7.17	
EXT DRO >C28-C36	<10.0	10.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 97.5 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 1 @ 4' (H000112-03)**

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	01/15/2020	ND	2.27	114	2.00	2.72		
Toluene*	<0.050	0.050	01/15/2020	ND	2.29	114	2.00	3.21		
Ethylbenzene*	<0.050	0.050	01/15/2020	ND	2.26	113	2.00	3.07		
Total Xylenes*	<0.150	0.150	01/15/2020	ND	6.71	112	6.00	3.02		
Total BTX	<0.300	0.300	01/15/2020	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	752	16.0	01/15/2020	ND	432	108	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	01/15/2020	ND	207	103	200	4.20	
DRO >C10-C28*	<10.0	10.0	01/15/2020	ND	214	107	200	7.17	
EXT DRO >C28-C36	<10.0	10.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 1 @ 6' (H000112-04)**

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	01/15/2020	ND	2.27	114	2.00	2.72		
Toluene*	<0.050	0.050	01/15/2020	ND	2.29	114	2.00	3.21		
Ethylbenzene*	<0.050	0.050	01/15/2020	ND	2.26	113	2.00	3.07		
Total Xylenes*	<0.150	0.150	01/15/2020	ND	6.71	112	6.00	3.02		
Total BTX	<0.300	0.300	01/15/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	352	16.0	01/15/2020	ND	432	108	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	01/15/2020	ND	207	103	200	4.20	
DRO >C10-C28*	<10.0	10.0	01/15/2020	ND	214	107	200	7.17	
EXT DRO >C28-C36	<10.0	10.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 90.8 % 41-142

Surrogate: 1-Chlorooctadecane 91.7 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 2 @ SURFACE 32.7684205-104.2517483 (H000112-05)**

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	01/15/2020	ND	2.27	114	2.00	2.72		
Toluene*	<0.050	0.050	01/15/2020	ND	2.29	114	2.00	3.21		
Ethylbenzene*	<0.050	0.050	01/15/2020	ND	2.26	113	2.00	3.07		
Total Xylenes*	<0.150	0.150	01/15/2020	ND	6.71	112	6.00	3.02		
Total BTEX	<0.300	0.300	01/15/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 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	4720	16.0	01/15/2020	ND	432	108	400	0.00		

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	01/15/2020	ND	207	103	200	4.20	
DRO >C10-C28*	46400	50.0	01/15/2020	ND	214	107	200	7.17	
EXT DRO >C28-C36	12500	50.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 96.7 % 41-142

Surrogate: 1-Chlorooctadecane 1970 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 2 @ 2' (H000112-06)**

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	01/15/2020	ND	2.04	102	2.00	1.60	
Toluene*	<0.050	0.050	01/15/2020	ND	2.06	103	2.00	1.34	
Ethylbenzene*	<0.050	0.050	01/15/2020	ND	2.07	103	2.00	1.76	
Total Xylenes*	<0.150	0.150	01/15/2020	ND	6.05	101	6.00	1.63	
Total BTEx	<0.300	0.300	01/15/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 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	896	16.0	01/15/2020	ND	432	108	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	01/15/2020	ND	207	103	200	4.20	
DRO >C10-C28*	748	10.0	01/15/2020	ND	214	107	200	7.17	
EXT DRO >C28-C36	96.6	10.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 107 % 41-142

Surrogate: 1-Chlorooctadecane 130 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 2 @ 4' (H000112-07)**

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	01/15/2020	ND	2.04	102	2.00	1.60	
Toluene*	<0.050	0.050	01/15/2020	ND	2.06	103	2.00	1.34	
Ethylbenzene*	<0.050	0.050	01/15/2020	ND	2.07	103	2.00	1.76	
Total Xylenes*	<0.150	0.150	01/15/2020	ND	6.05	101	6.00	1.63	
Total BTX	<0.300	0.300	01/15/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.5 % 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	448	16.0	01/15/2020	ND	432	108	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	01/15/2020	ND	207	103	200	4.20	
DRO >C10-C28*	251	10.0	01/15/2020	ND	214	107	200	7.17	
EXT DRO >C28-C36	38.4	10.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 97.0 % 41-142

Surrogate: 1-Chlorooctadecane 110 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 3 @ SURFACE 32.7694861-104.2528485 (H000112-08)**

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	01/14/2020	ND	2.10	105	2.00	1.47		
Toluene*	<0.050	0.050	01/14/2020	ND	2.12	106	2.00	2.00		
Ethylbenzene*	<0.050	0.050	01/14/2020	ND	2.13	106	2.00	0.643		
Total Xylenes*	<0.150	0.150	01/14/2020	ND	6.22	104	6.00	0.865		
Total BTX	<0.300	0.300	01/14/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 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	36800	16.0	01/15/2020	ND	432	108	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	01/15/2020	ND	191	95.3	200	4.25	
DRO >C10-C28*	422	10.0	01/15/2020	ND	233	117	200	5.69	
EXT DRO >C28-C36	160	10.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 81.6 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 3 @ 2' (H000112-09)**

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	01/14/2020	ND	2.10	105	2.00	1.47		
Toluene*	<0.050	0.050	01/14/2020	ND	2.12	106	2.00	2.00		
Ethylbenzene*	<0.050	0.050	01/14/2020	ND	2.13	106	2.00	0.643		
Total Xylenes*	<0.150	0.150	01/14/2020	ND	6.22	104	6.00	0.865		
Total BTX	<0.300	0.300	01/14/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 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	3520	16.0	01/15/2020	ND	432	108	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	01/15/2020	ND	191	95.3	200	4.25	
DRO >C10-C28*	<10.0	10.0	01/15/2020	ND	233	117	200	5.69	
EXT DRO >C28-C36	<10.0	10.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 90.0 % 41-142

Surrogate: 1-Chlorooctadecane 96.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 4 @ SURFACE 32.770173-104.2531739 (H000112-10)**

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	01/14/2020	ND	2.10	105	2.00	1.47		
Toluene*	<0.050	0.050	01/14/2020	ND	2.12	106	2.00	2.00		
Ethylbenzene*	<0.050	0.050	01/14/2020	ND	2.13	106	2.00	0.643		
Total Xylenes*	<0.150	0.150	01/14/2020	ND	6.22	104	6.00	0.865		
Total BTEx	<0.300	0.300	01/14/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 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	14900	16.0	01/15/2020	ND	432	108	400	0.00		

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	01/15/2020	ND	191	95.3	200	4.25	
DRO >C10-C28*	34900	50.0	01/15/2020	ND	233	117	200	5.69	
EXT DRO >C28-C36	9120	50.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 99.3 % 41-142

Surrogate: 1-Chlorooctadecane 1520 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 4 @ 2' (H000112-11)**

BTX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/14/2020	ND	2.10	105	2.00	1.47	
Toluene*	<0.050	0.050	01/14/2020	ND	2.12	106	2.00	2.00	
Ethylbenzene*	<b>0.214</b>	0.050	01/14/2020	ND	2.13	106	2.00	0.643	
Total Xylenes*	<0.150	0.150	01/14/2020	ND	6.22	104	6.00	0.865	
Total BTX	<0.300	0.300	01/14/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 185 % 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	<b>160</b>	16.0	01/15/2020	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<b>42.8</b>	10.0	01/15/2020	ND	191	95.3	200	4.25	
DRO >C10-C28*	<b>5050</b>	10.0	01/15/2020	ND	233	117	200	5.69	
EXT DRO >C28-C36	<b>902</b>	10.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 87.2 % 41-142

Surrogate: 1-Chlorooctadecane 211 % 37.6-147

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**Analytical Results For:**

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

Received:	01/13/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 4 @ 4' (H000112-12)**

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	01/14/2020	ND	2.10	105	2.00	1.47		
Toluene*	<0.050	0.050	01/14/2020	ND	2.12	106	2.00	2.00		
Ethylbenzene*	<0.050	0.050	01/14/2020	ND	2.13	106	2.00	0.643		
Total Xylenes*	<0.150	0.150	01/14/2020	ND	6.22	104	6.00	0.865		
Total BTX	<0.300	0.300	01/14/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 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	1040	16.0	01/15/2020	ND	432	108	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	01/15/2020	ND	191	95.3	200	4.25	
DRO >C10-C28*	90.4	10.0	01/15/2020	ND	233	117	200	5.69	
EXT DRO >C28-C36	14.7	10.0	01/15/2020	ND					

Surrogate: 1-Chlorooctane 95.5 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 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

### 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.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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

10

# BILL TO

## ANALYSIS REQUEST

Company Name: <b>Apache</b> Project Manager: <b>Jeff Brown</b>				<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>			
Address: City: <b>Hobbs</b> State: <b>NM</b> Zip: <b>88246</b> Phone #:                      Fax #:                      Project Owner: Project #:                      State:                      Zip:                      Project Name: Project Location: <b>Census Line</b> Sample Name: <b>Jose Aguado</b>				P.O. #:                      Company: Attn:                      Address: City:                      State:                      Zip:                      Phone #:                      Fax #:					
FOR LAB USE ONLY									
Lab I.D.                      Sample I.D.		(G)RAB OR (C)OMP.                      # CONTAINERS		MATRIX		PRESERV.		SAMPLING	
<b>H00012</b>		SP1 Surface 32.7681664 -104.2514455		GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER :		ACID/BASE: ICE / COOL OTHER :		DATE                      TIME	
1		1		1		1/13		2:21pm	
2		SP1 @ 21		1		1/13		2:23	
3		SP1 @ 41		1		1/13		2:25	
4		SP1 @ 6		1		1/13		2:27	
5		SP2 Surface 32.7684295 -104.2517483		1		1/13		2:50pm	
6		SP @ 21		1		1/13		2:52pm	
7		SP @ 41		1		1/13		2:54pm	

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Relinquished By: <b>[Signature]</b> Date: <b>1-13-10</b> Time: <b>16:35</b>		Received By: <b>[Signature]</b>	
Relinquished By: <b>[Signature]</b> Date:                      Time:		Received By: <b>[Signature]</b>	
REMARKS:			
Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No                      Add'l Phone #:			
All Results are emailed. Please provide Email address:			

Delivered By: (Circle One) <b>Observed Temp. °C</b> <b>5.6</b>		Sample Condition <b>CHECKED BY:</b> (Initials) <b>TS</b>		Turnaround Time:                      Standard <input checked="" type="checkbox"/> <b>Rush</b>	
Sampler - UPS - Bus - Other:		Corrected Temp. °C		Bacteria (only) <input type="checkbox"/> <b>Cool</b> <input type="checkbox"/> <b>Intact</b> <input type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b> Sample Condition <b>Observed Temp. °C</b>	





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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>Apache</b>		P.O. #:		BILL TO												ANALYSIS REQUEST											
Project Manager: <b>Jeffrey Brown</b>		Company:																									
Address:		Attn:																									
City: <b>Hobbs</b>		State: <b>NM</b>		Zip: <b>88240</b>																							
Phone #:		Fax #:		Address:																							
Project #:		City:		State:		Zip:																					
Project Name:		Phone #:		Fax #:																							
Project Location: <b>Emulsion line</b>		Phone #:		Fax #:																							
Sampler Name: <b>Joe Quezada Jr.</b>		Fax #:																									
FOR LAB USE ONLY																											
Lab I.D.		Sample I.D.		(S) RABOR (C) OMP.		# CONTAINERS		MATRIX		PRESERV.		SAMPLING															
H000112		32.770173 - 104.2531734		61		1		GROUNDWATER		WASTEWATER		DATE		TIME													
8 SP3 0 surface		32.770173 - 104.2531734		61		1		SOIL		OIL		1/13		3:03													
9 SP3 0.1		32.770173 - 104.2531734		61		1		SLUDGE		OTHER :		8:05		3:07													
10 SP4 0 surface		32.770173 - 104.2531734		61		1		ACID/BASE:		(CE) COOL		8:09		3:12													
11 SP4 0.2		32.770173 - 104.2531734		61		1		OTHER :		OTHER :																	
12 SP4 0.4		32.770173 - 104.2531734		61		1		DATE		TIME																	
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Relinquished By: <b>[Signature]</b>		Date: <b>1-13-20</b>		Received By: <b>[Signature]</b>		Date: <b>1-13-20</b>		Time: <b>16:35</b>		Received By: <b>[Signature]</b>		Time: <b>16:35</b>															
Relinquished By:		Date:		Received By:		Date:		Time:		Received By:		Time:															
Delivered By: (Circle One)		Observed Temp. °C		Corrected Temp. °C		Sample Condition		CHECKED BY: (Initials)		Turnaround Time:		Standard		Bacteria (only)		Sample Condition											
Sampler - UPS - Bus - Other:		5.6		5.6		Cool Intact		48		Thermometer ID #97		Rush		Cool Intact		Observed Temp. °C											
FORM CODE R330						Yes No		Yes No						Yes No		Corrected Temp. °C											

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



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

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January 20, 2020

JEFFREY BROOM

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EMISSION LINE

Enclosed are the results of analyses for samples received by the laboratory on 01/14/20 14:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/14/2020	Sampling Date:	01/14/2020
Reported:	01/20/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 3 @ 4' (H000122-01)**

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	01/16/2020	ND	1.98	98.8	2.00	6.81	
Toluene*	<0.050	0.050	01/16/2020	ND	1.97	98.5	2.00	7.39	
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	2.00	99.8	2.00	7.46	
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.81	96.8	6.00	7.51	
Total BTX	<0.300	0.300	01/16/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 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	320	16.0	01/16/2020	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	01/17/2020	ND	225	113	200	4.89	
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	231	116	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND					

Surrogate: 1-Chlorooctane 81.6 % 41-142

Surrogate: 1-Chlorooctadecane 80.8 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received: 01/14/2020  
 Reported: 01/20/2020  
 Project Name: EMISSION LINE  
 Project Number: NONE GIVEN  
 Project Location: NONE GIVEN

Sampling Date: 01/14/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 3 @ 5' (H000122-02)**

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	01/16/2020	ND	1.98	98.8	2.00	6.81		
Toluene*	<0.050	0.050	01/16/2020	ND	1.97	98.5	2.00	7.39		
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	2.00	99.8	2.00	7.46		
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.81	96.8	6.00	7.51		
Total BTEx	<0.300	0.300	01/16/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 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	400	16.0	01/16/2020	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	01/17/2020	ND	225	113	200	4.89	
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	231	116	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND					

Surrogate: 1-Chlorooctane 84.3 % 41-142

Surrogate: 1-Chlorooctadecane 84.0 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/14/2020	Sampling Date:	01/14/2020
Reported:	01/20/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 4 @ 5' (H000122-03)**

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	01/16/2020	ND	1.98	98.8	2.00	6.81		
Toluene*	<0.050	0.050	01/16/2020	ND	1.97	98.5	2.00	7.39		
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	2.00	99.8	2.00	7.46		
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.81	96.8	6.00	7.51		
Total BTEx	<0.300	0.300	01/16/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.3 % 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	1200	16.0	01/16/2020	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	01/17/2020	ND	225	113	200	4.89	
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	231	116	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND					

Surrogate: 1-Chlorooctane 86.2 % 41-142

Surrogate: 1-Chlorooctadecane 83.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	01/14/2020	Sampling Date:	01/14/2020
Reported:	01/20/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 6 @ SURFACE 32.7681267-104.2513922 (H000122-04)**

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	01/16/2020	ND	1.98	98.8	2.00	6.81		
Toluene*	<0.050	0.050	01/16/2020	ND	1.97	98.5	2.00	7.39		
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	2.00	99.8	2.00	7.46		
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.81	96.8	6.00	7.51		
Total BTX	<0.300	0.300	01/16/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.7 % 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	5280	16.0	01/16/2020	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	01/17/2020	ND	225	113	200	4.89	
DRO >C10-C28*	50.2	10.0	01/17/2020	ND	231	116	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND					

Surrogate: 1-Chlorooctane 82.9 % 41-142

Surrogate: 1-Chlorooctadecane 84.6 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received: 01/14/2020  
 Reported: 01/20/2020  
 Project Name: EMISSION LINE  
 Project Number: NONE GIVEN  
 Project Location: NONE GIVEN

Sampling Date: 01/14/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 6 @ 2' (H000122-05)**

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	01/16/2020	ND	1.98	98.8	2.00	6.81	
Toluene*	<0.050	0.050	01/16/2020	ND	1.97	98.5	2.00	7.39	
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	2.00	99.8	2.00	7.46	
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.81	96.8	6.00	7.51	
Total BTX	<0.300	0.300	01/16/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 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	1060	16.0	01/16/2020	ND	416	104	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	01/17/2020	ND	225	113	200	4.89	
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	231	116	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND					

Surrogate: 1-Chlorooctane 83.6 % 41-142

Surrogate: 1-Chlorooctadecane 81.3 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received: 01/14/2020  
 Reported: 01/20/2020  
 Project Name: EMISSION LINE  
 Project Number: NONE GIVEN  
 Project Location: NONE GIVEN

Sampling Date: 01/14/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 6 @ 4' (H000122-06)**

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	01/16/2020	ND	1.98	98.8	2.00	6.81		
Toluene*	<0.050	0.050	01/16/2020	ND	1.97	98.5	2.00	7.39		
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	2.00	99.8	2.00	7.46		
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.81	96.8	6.00	7.51		
Total BTX	<0.300	0.300	01/16/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 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	464	16.0	01/16/2020	ND	416	104	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	01/17/2020	ND	225	113	200	4.89	
DRO >C10-C28*	<10.0	10.0	01/17/2020	ND	231	116	200	5.45	
EXT DRO >C28-C36	<10.0	10.0	01/17/2020	ND					

Surrogate: 1-Chlorooctane 82.2 % 41-142

Surrogate: 1-Chlorooctadecane 80.7 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/14/2020	Sampling Date:	01/14/2020
Reported:	01/20/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 5 @ SURFACE 32.7681547-104.2517989 (H000122-07)**

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	01/16/2020	ND	1.98	98.8	2.00	6.81		
Toluene*	<0.050	0.050	01/16/2020	ND	1.97	98.5	2.00	7.39		
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	2.00	99.8	2.00	7.46		
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.81	96.8	6.00	7.51		
Total BTEX	<0.300	0.300	01/16/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 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	880	16.0	01/16/2020	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/17/2020	ND	225	113	200	4.89	
DRO >C10-C28*	8650	10.0	01/17/2020	ND	231	116	200	5.45	
EXT DRO >C28-C36	1930	10.0	01/17/2020	ND					

Surrogate: 1-Chlorooctane 85.3 % 41-142

Surrogate: 1-Chlorooctadecane 342 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/14/2020	Sampling Date:	01/14/2020
Reported:	01/20/2020	Sampling Type:	Soil
Project Name:	EMISSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 5 @ 1' (H000122-08)**

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	01/16/2020	ND	1.98	98.8	2.00	6.81	
Toluene*	<0.050	0.050	01/16/2020	ND	1.97	98.5	2.00	7.39	
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	2.00	99.8	2.00	7.46	
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.81	96.8	6.00	7.51	
Total BTX	<0.300	0.300	01/16/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 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	400	16.0	01/16/2020	ND	416	104	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	01/17/2020	ND	225	113	200	4.89	
DRO >C10-C28*	150	10.0	01/17/2020	ND	231	116	200	5.45	
EXT DRO >C28-C36	19.8	10.0	01/17/2020	ND					

Surrogate: 1-Chlorooctane 75.5 % 41-142

Surrogate: 1-Chlorooctadecane 82.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

- S-04            The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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".

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Celey D. Keene, Lab Director/Quality Manager



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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>Alpaca</b>		P.O. #:		BILL TO				ANALYSIS REQUEST			
Project Manager: <b>Jeffrey Brown</b>		Company:									
Address:		Attn:									
City: <b>Hobbs</b>		State: <b>NM</b>		Zip: <b>88240</b>							
Phone #:		Fax #:		Address:							
Project #:		Project Owner:		City:		State:		Zip:			
Project Location: <b>Emission line</b>		Phone #:									
Sample Name: <b>See Certificate</b>		Fax #:									
FOR LAB USE ONLY											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX		PRESERV.	SAMPLING				
		GROUNDWATER		SOIL		ACID/BASE:		DATE	TIME		
		WATER		OIL		ICE COOL					
		SLUDGE		OTHER :		OTHER :					

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Relinquished By: <b>Joe Chesebrough</b>	Date: <b>11/14/2020</b>	Received By: <b>Samira Chesebrough</b>	Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By: <b>Joe Chesebrough</b>	Date: <b>11/14/2020</b>	Received By: <b>Samira Chesebrough</b>	All Results are emailed. Please provide Email address:	
REMARKS:				

Delivered By: (Circle One)	Observed Temp. °C	Sample Condition	CHECKED BY: (Initials)	Turnaround Time:	Standard	Bacteria (only)	Sample Condition
Sampler - UPS - Bus - Other:	Corrected Temp. °C	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	<b>TC</b>		<b>Rush</b>	<input checked="" type="checkbox"/>	Observed Temp. °C
		No <input type="checkbox"/> Intact <input type="checkbox"/>				<input type="checkbox"/>	Corrected Temp. °C

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





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

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January 28, 2020

JEFFREY BROOM

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EMULSION LINE

Enclosed are the results of analyses for samples received by the laboratory on 01/22/20 15:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/22/2020	Sampling Date:	01/22/2020
Reported:	01/28/2020	Sampling Type:	Soil
Project Name:	EMULSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 4 @ 6' (H000223-01)**

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	01/24/2020	ND	1.72	85.9	2.00	20.9	
Toluene*	<0.050	0.050	01/24/2020	ND	1.77	88.3	2.00	21.6	
Ethylbenzene*	<0.050	0.050	01/24/2020	ND	1.73	86.4	2.00	21.6	
Total Xylenes*	<0.150	0.150	01/24/2020	ND	5.04	83.9	6.00	21.8	
Total BTEX	<0.300	0.300	01/24/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.7 % 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	01/24/2020	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	01/24/2020	ND	199	99.7	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2020	ND	206	103	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	01/24/2020	ND					

Surrogate: 1-Chlorooctane 70.0 % 41-142

Surrogate: 1-Chlorooctadecane 70.0 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received: 01/22/2020  
 Reported: 01/28/2020  
 Project Name: EMULSION LINE  
 Project Number: NONE GIVEN  
 Project Location: NONE GIVEN

Sampling Date: 01/22/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 2 @ 5' (H000223-02)**

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	01/27/2020	ND	1.83	91.3	2.00	16.5		
Toluene*	<0.050	0.050	01/27/2020	ND	1.78	89.1	2.00	17.3		
Ethylbenzene*	<0.050	0.050	01/27/2020	ND	1.77	88.7	2.00	17.2		
Total Xylenes*	<0.150	0.150	01/27/2020	ND	5.22	87.0	6.00	17.3		
Total BTX	<0.300	0.300	01/27/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 73.3-129

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	01/24/2020	ND	199	99.7	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2020	ND	206	103	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	01/24/2020	ND					

Surrogate: 1-Chlorooctane 73.0 % 41-142

Surrogate: 1-Chlorooctadecane 73.3 % 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  
 JEFFREY BROOM  
 2350 W. MARLAND BLVD.  
 HOBBS NM, 88240  
 Fax To: (575) 393-2432

Received:	01/22/2020	Sampling Date:	01/22/2020
Reported:	01/28/2020	Sampling Type:	Soil
Project Name:	EMULSION LINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: SP 5 @ 3' (H000223-03)**

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	01/27/2020	ND	1.83	91.3	2.00	16.5		
Toluene*	<0.050	0.050	01/27/2020	ND	1.78	89.1	2.00	17.3		
Ethylbenzene*	<0.050	0.050	01/27/2020	ND	1.77	88.7	2.00	17.2		
Total Xylenes*	<0.150	0.150	01/27/2020	ND	5.22	87.0	6.00	17.3		
Total BTEX	<0.300	0.300	01/27/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 73.3-129

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	01/24/2020	ND	199	99.7	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2020	ND	206	103	200	1.28	
EXT DRO >C28-C36	<10.0	10.0	01/24/2020	ND					

Surrogate: 1-Chlorooctane 71.8 % 41-142

Surrogate: 1-Chlorooctadecane 72.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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



## BILL TO

## ANALYSIS REQUEST

† Cardinal cannot accept verbal changes. Please email changes to [celey.keene@cardinallabsnm.com](mailto:celey.keene@cardinallabsnm.com)

**END OF REPORT**

**RXSoil, Inc.**

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

CONDITIONS  
  
Action 33954

CONDITIONS

Operator:  APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID:  873
	Action Number:  33954
	Action Type:  [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bbillings	If a confirmation sample fails on data in the treatment cell, contact OCD with data. Additional samples may be required at that time by OCD based on data.	7/30/2021