



July 14, 2021

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

Re: Deferral Request  
Apache Corporation  
WS MARSHALL B-011  
Incident ID: nDHR1912732011

RXSoil, Inc. is pleased to submit the deferral request for the on-site remediation of impacted soil for the above release in Lea County, New Mexico.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jace Caraway'.

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

A handwritten signature in black ink, appearing to read 'Zach Robbins'.

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

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## I. Introduction

On behalf of Apache Corporation (“Apache”), RXSoil, Inc. (“RXSoil”) has prepared this deferral request that describes remediation of the release of crude oil at the W.S. Marshall B-011 battery.

The release was discovered on 4/22/2019 in Unit Letter L, Section 27, Township 21S, Range 37E (see *Figure 1* for Vicinity Map) at approximate coordinates 32.44928, -103.15499. It was reported that 10 barrels of crude oil and 25 barrels of produced water were released, and 8 barrels of crude oil 4 barrels of produced water were recovered during the initial response.

In the fall of 2019, soils on the pad were excavated to NMOCD Table I standards and hauled to an NMOCD approved disposal facility. Soils inside of the battery were excavated by hand shovels to a depth of 6” and hauled to an NMOCD approved disposal facility. Samples were collected and tested above Table I standards but due to the proximity to infrastructure, excavation was stopped. A deferment request was submitted in February 2020 and denied in May.

## II. Site Assessment/Characterization

1. **Site Map** – See *Figure 2*
2. **Depth to ground water** – Remediation standards for <50 feet will be used on this remediation project, based on the minimum depth to water of nearby wells (CP 01001 POD1) at 40’ BGS.
3. **Wellhead protection area** – There are no known wellheads in the area.
4. **Distance to nearest significant watercourse** – There is no significant watercourse within a half-mile of any horizontal boundary of the release.
5. **Soil/waste characteristics** – Samples were collected inside of the battery at various depths. The sample locations are shown in *Figure 2* with results summarized in *Appendix A*.

## III. Closure Reporting

1. **Scaled site and sampling diagram** – see *Figure 2*.
2. **Photographs of the remediated site prior to backfill** – treatment in-place did not require excavation (nor backfill), but photographs of remediated site are shown in *Appendix C*.
3. **Laboratory analysis of final sampling** – see *Appendix A* for data summary and *Appendix D* for laboratory reports.
4. **Description of all remedial activities** - RXSoil utilized an in-situ application of RXBiotics, RXSoil’s naturally occurring, non-genetically modified bioremediation agent. This product, along with physical agitation led to the degradation of hydrocarbons. RXSoil also reduced deeper hydrocarbons via boreholes to avoid a major facility deconstruction. Samples were collected representing no more than 200 square feet. Sample location B20 was fully delineated and hydrocarbon contamination inside the berm were significantly reduced, as required in the Conditions of Approval. Three of the four samples tested below thresholds for TPH with B20 testing at 198 mg/kg TPH (starting point of 125,267 mg/kg).

Samples were taken using a stainless-steel hand shovel. All tools were 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 were temporarily transferred to a new plastic bag in the field. Once in a location safer for handling glass, the samples were transferred to glass jars, supplied by an approved laboratory. The threads on all jars were wiped clean to allow an air-tight seal. Samples were transferred on ice to a third-party laboratory to ensure tests were completed within an appropriate timeline.

It is estimated that 100 cubic yards were remediated.

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

The battery has been restored to its initial state. Conditions of Approval were met. RXSoil is requesting deferral until the equipment on-site is removed.

Figure 1 - Vicinity Map

**Legend**

- Eunice
- 📍 Release Location

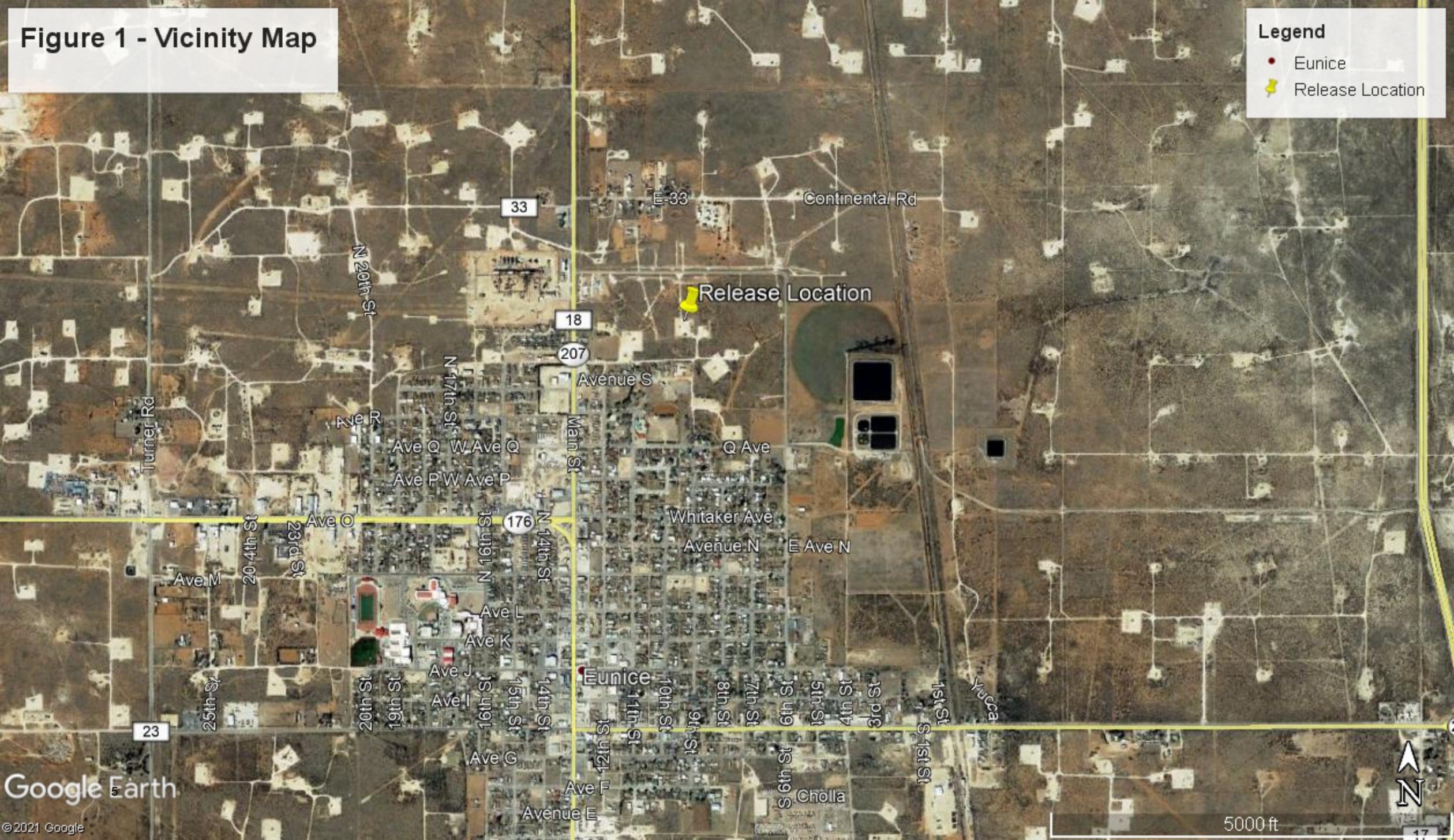
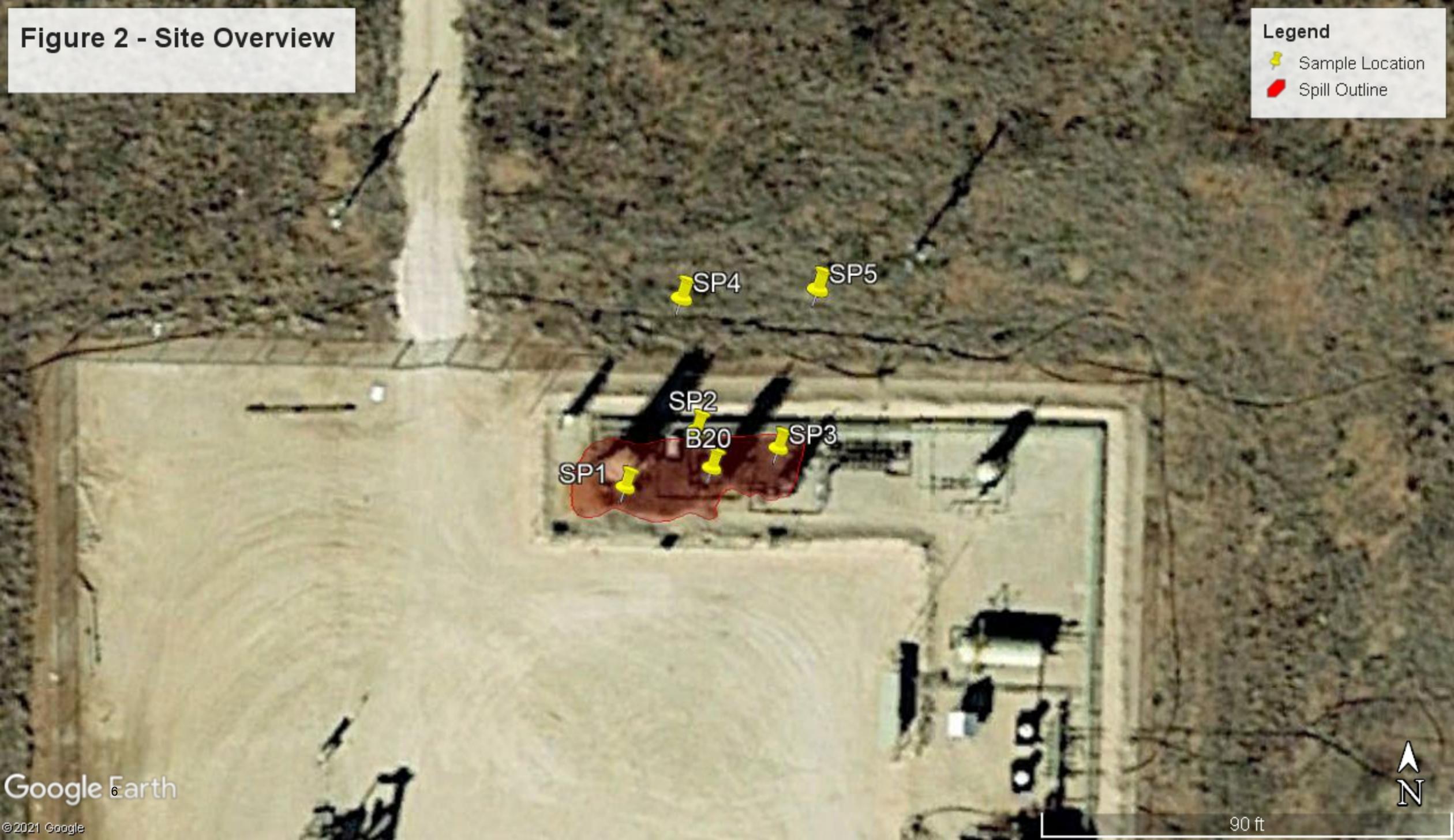


Figure 2 - Site Overview

**Legend**

-  Sample Location
-  Spill Outline



**APPENDIX A**

**SAMPLE RESULTS SUMMARY TABLE**

Remediation Data													
	Sample Point	Depth (ft)	Sample Date	Chloride	BTEX (8021B)					TPH (8015M)			
				Lab Test	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	C6-C35
Initial	SP3	S	9/11/2019	<16.0	<0.050	0.647	0.132	3.1	3.88	334	26,600	7,700	<b>34,634.0</b>
	B18	.5'	10/23/2019	80	<0.050	<0.050	0.243	0.911	1.15	56	5,300	1,110	<b>6,466.4</b>
	B19	.5'	10/23/2019	80	<0.100	0.956	2.09	7.78	10.8	225	7,450	1,460	<b>9,135.0</b>
	B20	.5'	10/23/2019	400	<0.200	1.26	2.46	9.93	13.7	407	122,000	2,860	<b>125,267.0</b>
	B21	.5'	10/23/2019	528	<0.100	0.34	1.01	3.34	4.7	212	11,400	2,730	<b>14,342.0</b>
	B22	.5'	10/23/2019	48	<0.100	0.787	1.58	4.78	7.14	248	7,600	1,600	<b>9,448.0</b>
30 Days Post Treatment	SP1	.5'	5/20/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	3,490	1,100	<b>4,590.0</b>
	SP2	.5'	5/20/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	4,820	1,390	<b>6,210.0</b>
	SP3	.5'	5/20/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	4,010	1,090	<b>5,100.0</b>
	SP4*	.5'	5/20/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0
	SP5*	.5'	5/20/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0
	B20	S	5/20/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	1,060	293	<b>1,353.0</b>
	B20	2'	5/20/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	26.4	<10.0	26.4
90 Days Post Treatment	SP1	.5'	7/2/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	12.4	<10.0	12.4
	SP2	.5'	7/2/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0
	SP3	.5'	7/2/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<30.0
	B20	S	7/2/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	160	38.0	<b>198</b>
<b>NMOCD Thresholds</b>					<b>10</b>				<b>50</b>				<b>100</b>

**BOLD** results indicate results above threshold

\* indicates testing from "overspray" area outside of containment

- indicates tests were not ran

All units in mg/kg unless otherwise noted

**APPENDIX B**

**C-141**

Incident ID	NDHR1912732011
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: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

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

- Approved     
  Approved with Attached Conditions of Approval     
  Denied     
  Deferral Approved

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	NDHR1912732011
District RP	
Facility ID	
Application ID	

## Closure

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

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

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

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

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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

**APPENDIX C**  
**SITE PHOTOGRAPHS**



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

**APPENDIX D**

**LABORATORY REPORTS**

**RXSoil, Inc.**

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



May 25, 2021

MATTHEW LONGCRIER  
RX-SOIL INC.  
201 MAIN STREET, SUITE 1360  
FORT WORTH, TX 76102

RE: WS MARSHALL

Enclosed are the results of analyses for samples received by the laboratory on 05/21/21 9:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style.

Celey D. Keene  
Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

Received:	05/21/2021	Sampling Date:	05/20/2021
Reported:	05/25/2021	Sampling Type:	Soil
Project Name:	WS MARSHALL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LOVING, NM		

**Sample ID: SP 1 (H211320-01)**

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	05/24/2021	ND	2.07	103	2.00	10.6		
Toluene*	<0.050	0.050	05/24/2021	ND	2.02	101	2.00	11.4		
Ethylbenzene*	<0.050	0.050	05/24/2021	ND	1.92	95.9	2.00	13.2		
Total Xylenes*	<0.150	0.150	05/24/2021	ND	5.81	96.8	6.00	12.4		
Total BTEX	<0.300	0.300	05/24/2021	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 69.9-140

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	05/24/2021	ND	208	104	200	2.18			
<b>DRO &gt;C10-C28*</b>	<b>3490</b>	10.0	05/24/2021	ND	159	79.4	200	1.98			
<b>EXT DRO &gt;C28-C36</b>	<b>1100</b>	10.0	05/24/2021	ND							

Surrogate: 1-Chlorooctane 91.2 % 44.3-133

Surrogate: 1-Chlorooctadecane 217 % 38.9-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

 Received: 05/21/2021  
 Reported: 05/25/2021  
 Project Name: WS MARSHALL  
 Project Number: NONE GIVEN  
 Project Location: LOVING, NM

 Sampling Date: 05/20/2021  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 2 (H211320-02)**

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	05/24/2021	ND	2.07	103	2.00	10.6		
Toluene*	<0.050	0.050	05/24/2021	ND	2.02	101	2.00	11.4		
Ethylbenzene*	<0.050	0.050	05/24/2021	ND	1.92	95.9	2.00	13.2		
Total Xylenes*	<0.150	0.150	05/24/2021	ND	5.81	96.8	6.00	12.4		
Total BTEX	<0.300	0.300	05/24/2021	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 69.9-140

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	05/24/2021	ND	208	104	200	2.18			
<b>DRO &gt;C10-C28*</b>	<b>4820</b>	10.0	05/24/2021	ND	159	79.4	200	1.98			
<b>EXT DRO &gt;C28-C36</b>	<b>1390</b>	10.0	05/24/2021	ND							

Surrogate: 1-Chlorooctane 90.9 % 44.3-133

Surrogate: 1-Chlorooctadecane 257 % 38.9-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

 Received: 05/21/2021  
 Reported: 05/25/2021  
 Project Name: WS MARSHALL  
 Project Number: NONE GIVEN  
 Project Location: LOVING, NM

 Sampling Date: 05/20/2021  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 3 (H211320-03)**

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	05/24/2021	ND	2.07	103	2.00	10.6	
Toluene*	<0.050	0.050	05/24/2021	ND	2.02	101	2.00	11.4	
Ethylbenzene*	<0.050	0.050	05/24/2021	ND	1.92	95.9	2.00	13.2	
Total Xylenes*	<0.150	0.150	05/24/2021	ND	5.81	96.8	6.00	12.4	
Total BTEX	<0.300	0.300	05/24/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 120 % 69.9-140

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	05/24/2021	ND	208	104	200	2.18		
<b>DRO &gt;C10-C28*</b>	<b>4010</b>	10.0	05/24/2021	ND	159	79.4	200	1.98		
<b>EXT DRO &gt;C28-C36</b>	<b>1090</b>	10.0	05/24/2021	ND						

Surrogate: 1-Chlorooctane 94.8 % 44.3-133

Surrogate: 1-Chlorooctadecane 231 % 38.9-142

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

 Received: 05/21/2021  
 Reported: 05/25/2021  
 Project Name: WS MARSHALL  
 Project Number: NONE GIVEN  
 Project Location: LOVING, NM

 Sampling Date: 05/20/2021  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 4 (H211320-04)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/24/2021	ND	2.07	103	2.00	10.6	
Toluene*	<0.050	0.050	05/24/2021	ND	2.02	101	2.00	11.4	
Ethylbenzene*	<0.050	0.050	05/24/2021	ND	1.92	95.9	2.00	13.2	
Total Xylenes*	<0.150	0.150	05/24/2021	ND	5.81	96.8	6.00	12.4	
Total BTEX	<0.300	0.300	05/24/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 69.9-140

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	05/24/2021	ND	208	104	200	2.18	
DRO >C10-C28*	<10.0	10.0	05/24/2021	ND	159	79.4	200	1.98	
EXT DRO >C28-C36	<10.0	10.0	05/24/2021	ND					

Surrogate: 1-Chlorooctane 99.7 % 44.3-133

Surrogate: 1-Chlorooctadecane 101 % 38.9-142

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

 Received: 05/21/2021  
 Reported: 05/25/2021  
 Project Name: WS MARSHALL  
 Project Number: NONE GIVEN  
 Project Location: LOVING, NM

 Sampling Date: 05/20/2021  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 5 (H211320-05)**

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	05/24/2021	ND	2.07	103	2.00	10.6		
Toluene*	<0.050	0.050	05/24/2021	ND	2.02	101	2.00	11.4		
Ethylbenzene*	<0.050	0.050	05/24/2021	ND	1.92	95.9	2.00	13.2		
Total Xylenes*	<0.150	0.150	05/24/2021	ND	5.81	96.8	6.00	12.4		
Total BTEX	<0.300	0.300	05/24/2021	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.9-140

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	05/24/2021	ND	208	104	200	2.18		
DRO >C10-C28*	<10.0	10.0	05/24/2021	ND	159	79.4	200	1.98		
EXT DRO >C28-C36	<10.0	10.0	05/24/2021	ND						

Surrogate: 1-Chlorooctane 94.7 % 44.3-133

Surrogate: 1-Chlorooctadecane 95.8 % 38.9-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

 Received: 05/21/2021  
 Reported: 05/25/2021  
 Project Name: WS MARSHALL  
 Project Number: NONE GIVEN  
 Project Location: LOVING, NM

 Sampling Date: 05/20/2021  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B 20 SURFACE (H211320-06)**

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	05/24/2021	ND	2.07	103	2.00	10.6		
Toluene*	<0.050	0.050	05/24/2021	ND	2.02	101	2.00	11.4		
Ethylbenzene*	<0.050	0.050	05/24/2021	ND	1.92	95.9	2.00	13.2		
Total Xylenes*	<0.150	0.150	05/24/2021	ND	5.81	96.8	6.00	12.4		
Total BTEX	<0.300	0.300	05/24/2021	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 69.9-140

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	05/24/2021	ND	208	104	200	2.18			
<b>DRO &gt;C10-C28*</b>	<b>1060</b>	10.0	05/24/2021	ND	159	79.4	200	1.98			
<b>EXT DRO &gt;C28-C36</b>	<b>293</b>	10.0	05/24/2021	ND							

Surrogate: 1-Chlorooctane 84.3 % 44.3-133

Surrogate: 1-Chlorooctadecane 148 % 38.9-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

 Received: 05/21/2021  
 Reported: 05/25/2021  
 Project Name: WS MARSHALL  
 Project Number: NONE GIVEN  
 Project Location: LOVING, NM

 Sampling Date: 05/20/2021  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B 20 2' (H211320-07)**

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	05/24/2021	ND	2.07	103	2.00	10.6		
Toluene*	<0.050	0.050	05/24/2021	ND	2.02	101	2.00	11.4		
Ethylbenzene*	<0.050	0.050	05/24/2021	ND	1.92	95.9	2.00	13.2		
Total Xylenes*	<0.150	0.150	05/24/2021	ND	5.81	96.8	6.00	12.4		
Total BTEX	<0.300	0.300	05/24/2021	ND						

Surrogate: 4-Bromofluorobenzene (PID) 125 % 69.9-140

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	05/24/2021	ND	208	104	200	2.18		
<b>DRO &gt;C10-C28*</b>	<b>26.4</b>	10.0	05/24/2021	ND	159	79.4	200	1.98		
EXT DRO >C28-C36	<10.0	10.0	05/24/2021	ND						

Surrogate: 1-Chlorooctane 95.6 % 44.3-133

Surrogate: 1-Chlorooctadecane 98.0 % 38.9-142

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

 Received: 05/21/2021  
 Reported: 05/25/2021  
 Project Name: WS MARSHALL  
 Project Number: NONE GIVEN  
 Project Location: LOVING, NM

 Sampling Date: 05/20/2021  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B 20 4' (H211320-08)**

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	05/24/2021	ND	2.07	103	2.00	10.6		
Toluene*	<0.050	0.050	05/24/2021	ND	2.02	101	2.00	11.4		
Ethylbenzene*	<0.050	0.050	05/24/2021	ND	1.92	95.9	2.00	13.2		
Total Xylenes*	<0.150	0.150	05/24/2021	ND	5.81	96.8	6.00	12.4		
Total BTEX	<0.300	0.300	05/24/2021	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.9-140

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	05/24/2021	ND	208	104	200	2.18		
<b>DRO &gt;C10-C28*</b>	<b>11.6</b>	10.0	05/24/2021	ND	159	79.4	200	1.98		
EXT DRO >C28-C36	<10.0	10.0	05/24/2021	ND						

Surrogate: 1-Chlorooctane 93.7 % 44.3-133

Surrogate: 1-Chlorooctadecane 96.5 % 38.9-142

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-04	The RPD for the BS/BSD was outside of historical limits.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report



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Celey D. Keene, Lab Director/Quality Manager



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

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

Company Name: <u>Rx5011</u>		P. O. #:		<b>BILL TO</b>		ANALYSIS REQUEST	
Project Manager: <u>MHT</u>		Company:					
Address:		Attn:					
City:		Address:					
State:		City:					
Zip:		State:					
Phone #:		Phone #:					
Fax #:		Fax #:					
Project #:		Project Owner:					
Project Name: <u>W5 Marshall</u>		City:					
Project Location:		State:					
Sampler Name: <u>MHT Longner</u>		Zip:					
FOR LAB USE ONLY		Matrix		PRESERV		SAMPLING	

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH	BTEX
<u>H2131A</u>	<u>SP1</u>					X							<u>5/20</u>	<u>5:00 PM</u>	X	X
	<u>SP2</u>					X									X	X
	<u>SP3</u>					X									X	X
	<u>SP4</u>					X									X	X
	<u>SP5</u>					X									X	X
	<u>B20 Surface</u>					X									X	X
	<u>B20 2ft</u>					X									X	X
	<u>B20 4ft</u>					X									X	X

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Relinquished By: <u>MHT</u>	Date: <u>5/21</u>	Received By: <u>Jessica Clark</u>	Date: <u>5/20</u>
Time: <u>1:20</u>	Time: <u>5:00 PM</u>		

Delivered By: (Circle One) UPS - UPS - Bus - Other: -100 #113

Sample Condition:  Intact  Cool  Yes  No

CHECKED BY: AS

Phone Result:  Yes  No  Add'l Phone #

Fax Result:  Yes  No  Add'l Fax #

REMARKS:



July 07, 2021

MATTHEW LONGCRIER

RX-SOIL INC.

201 MAIN STREET, SUITE 1360

FORT WORTH, TX 76102

RE: WS MARSHALL

Enclosed are the results of analyses for samples received by the laboratory on 07/06/21 8:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

Received:	07/06/2021	Sampling Date:	07/02/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	WS MARSHALL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EUNICE, NM		

**Sample ID: S 1 (H211723-01)**

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	07/06/2021	ND	2.03	101	2.00	2.68	
Toluene*	<0.050	0.050	07/06/2021	ND	2.16	108	2.00	2.93	
Ethylbenzene*	<0.050	0.050	07/06/2021	ND	2.08	104	2.00	2.14	
Total Xylenes*	<0.150	0.150	07/06/2021	ND	6.15	102	6.00	1.49	
Total BTEX	<0.300	0.300	07/06/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

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	07/06/2021	ND	233	116	200	1.16	
<b>DRO &gt;C10-C28*</b>	<b>12.4</b>	10.0	07/06/2021	ND	227	114	200	1.89	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane 68.4 % 44.3-133

Surrogate: 1-Chlorooctadecane 70.1 % 38.9-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

 Received: 07/06/2021  
 Reported: 07/07/2021  
 Project Name: WS MARSHALL  
 Project Number: NONE GIVEN  
 Project Location: EUNICE, NM

 Sampling Date: 07/02/2021  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S 2 (H211723-02)**

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	07/06/2021	ND	2.03	101	2.00	2.68	
Toluene*	<0.050	0.050	07/06/2021	ND	2.16	108	2.00	2.93	
Ethylbenzene*	<0.050	0.050	07/06/2021	ND	2.08	104	2.00	2.14	
Total Xylenes*	<0.150	0.150	07/06/2021	ND	6.15	102	6.00	1.49	
Total BTEX	<0.300	0.300	07/06/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.9-140

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	07/06/2021	ND	233	116	200	1.16	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	114	200	1.89	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane 83.2 % 44.3-133

Surrogate: 1-Chlorooctadecane 84.0 % 38.9-142

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

 Received: 07/06/2021  
 Reported: 07/07/2021  
 Project Name: WS MARSHALL  
 Project Number: NONE GIVEN  
 Project Location: EUNICE, NM

 Sampling Date: 07/02/2021  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S 3 (H211723-03)**

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	07/06/2021	ND	2.03	101	2.00	2.68	
Toluene*	<0.050	0.050	07/06/2021	ND	2.16	108	2.00	2.93	
Ethylbenzene*	<0.050	0.050	07/06/2021	ND	2.08	104	2.00	2.14	
Total Xylenes*	<0.150	0.150	07/06/2021	ND	6.15	102	6.00	1.49	
Total BTEX	<0.300	0.300	07/06/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.9-140

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	07/06/2021	ND	233	116	200	1.16	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	114	200	1.89	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane 84.2 % 44.3-133

Surrogate: 1-Chlorooctadecane 85.2 % 38.9-142

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 RX-SOIL INC.  
 MATTHEW LONGCRIER  
 201 MAIN STREET, SUITE 1360  
 FORT WORTH TX, 76102  
 Fax To: NA

 Received: 07/06/2021  
 Reported: 07/07/2021  
 Project Name: WS MARSHALL  
 Project Number: NONE GIVEN  
 Project Location: EUNICE, NM

 Sampling Date: 07/02/2021  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B 20 (H211723-04)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/06/2021	ND	2.03	101	2.00	2.68		
Toluene*	<0.050	0.050	07/06/2021	ND	2.16	108	2.00	2.93		
Ethylbenzene*	<0.050	0.050	07/06/2021	ND	2.08	104	2.00	2.14		
Total Xylenes*	<0.150	0.150	07/06/2021	ND	6.15	102	6.00	1.49		
Total BTEX	<0.300	0.300	07/06/2021	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

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	07/06/2021	ND	233	116	200	1.16		
<b>DRO &gt;C10-C28*</b>	<b>160</b>	10.0	07/06/2021	ND	227	114	200	1.89		
<b>EXT DRO &gt;C28-C36</b>	<b>38.0</b>	10.0	07/06/2021	ND						

Surrogate: 1-Chlorooctane 84.1 % 44.3-133

Surrogate: 1-Chlorooctadecane 89.8 % 38.9-142

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

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

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Celey D. Keene, Lab Director/Quality Manager



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