



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

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

A stylized, 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

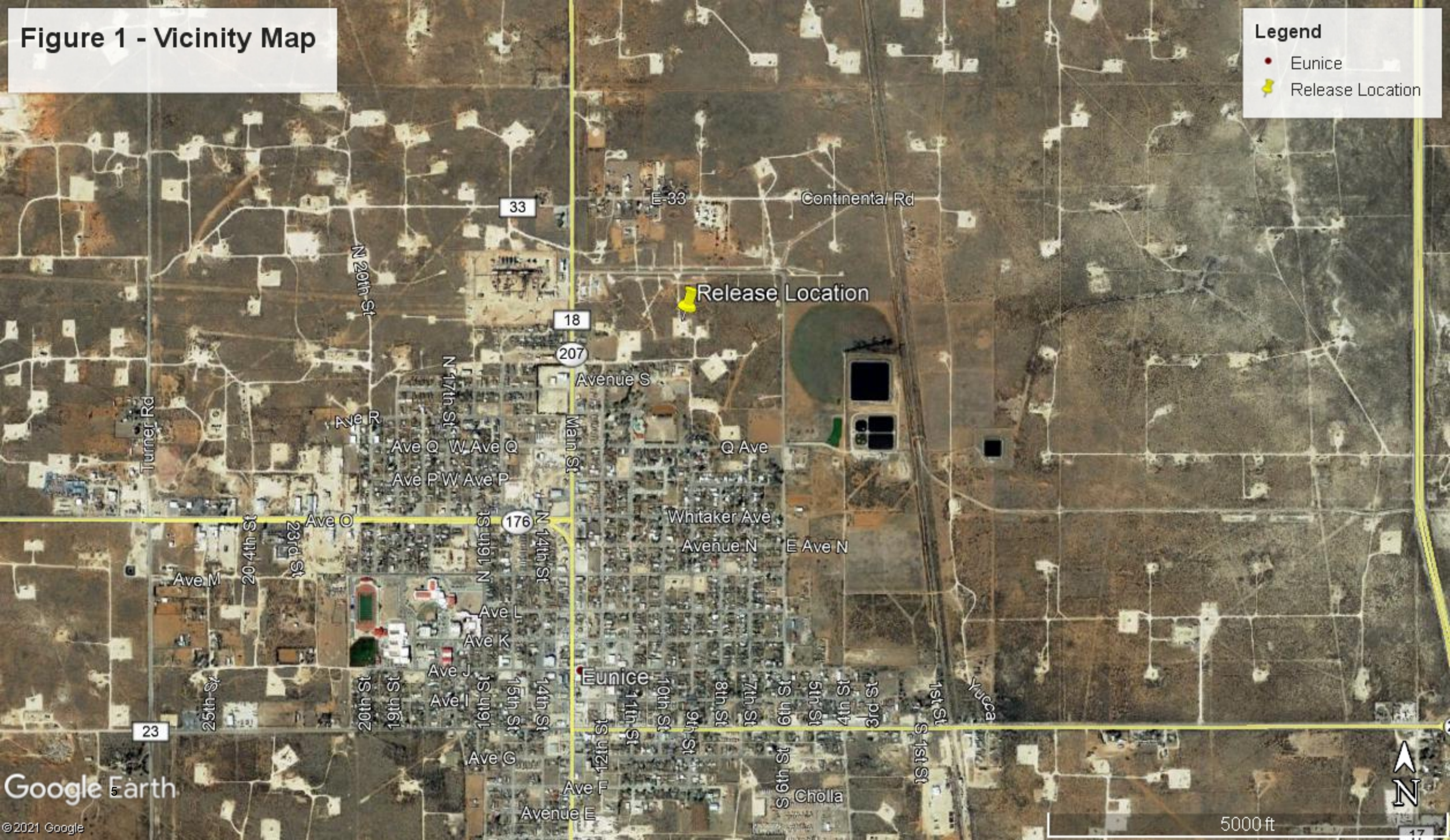




Figure 2 - Site Overview

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	34,634.0
	B18	.5'	10/23/2019	80	<0.050	<0.050	0.243	0.911	1.15	56	5,300	1,110	6,466.4
	B19	.5'	10/23/2019	80	<0.100	0.956	2.09	7.78	10.8	225	7,450	1,460	9,135.0
	B20	.5'	10/23/2019	400	<0.200	1.26	2.46	9.93	13.7	407	122,000	2,860	125,267.0
	B21	.5'	10/23/2019	528	<0.100	0.34	1.01	3.34	4.7	212	11,400	2,730	14,342.0
	B22	.5'	10/23/2019	48	<0.100	0.787	1.58	4.78	7.14	248	7,600	1,600	9,448.0
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	4,590.0
	SP2	.5'	5/20/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	4,820	1,390	6,210.0
	SP3	.5'	5/20/2021	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	4,010	1,090	5,100.0
	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	1,353.0
	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	198
NMOCD Thresholds					10				50				100

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

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.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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 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	
DRO >C10-C28*	3490	10.0	05/24/2021	ND	159	79.4	200	1.98	
EXT DRO >C28-C36	1100	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)

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	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 BTX	<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	
DRO >C10-C28*	4820	10.0	05/24/2021	ND	159	79.4	200	1.98	
EXT DRO >C28-C36	1390	10.0	05/24/2021	ND					

Surrogate: 1-Chlorooctane 90.9 % 44.3-133

Surrogate: 1-Chlorooctadecane 257 % 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 3 (H211320-03)

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	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 BTX	<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	
DRO >C10-C28*	4010	10.0	05/24/2021	ND	159	79.4	200	1.98	
EXT DRO >C28-C36	1090	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

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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 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)

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	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 BTX	<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	
DRO >C10-C28*	1060	10.0	05/24/2021	ND	159	79.4	200	1.98	
EXT DRO >C28-C36	293	10.0	05/24/2021	ND					

Surrogate: 1-Chlorooctane 84.3 % 44.3-133

Surrogate: 1-Chlorooctadecane 148 % 38.9-142

Cardinal Laboratories

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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	
DRO >C10-C28*	26.4	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)

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	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 BTX	<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	
DRO >C10-C28*	11.6	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



(575) 393-2326 FAX (575) 393-2476

+ Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

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.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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 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	
DRO >C10-C28*	12.4	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

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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)

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	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 BTX	<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	
DRO >C10-C28*	160	10.0	07/06/2021	ND	227	114	200	1.89	
EXT DRO >C28-C36	38.0	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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

END OF REPORT