

Incident ID	nAPP2036347592
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>>101.5</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ 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)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ 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?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☒ 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

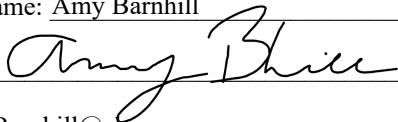
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, 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

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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: Amy Barnhill Title: Waste and Water Specialist
Signature:  Date: 5-5-2021
email: ABarnhill@chevron.com Telephone: 432-687-7108

OCD Only

Received by: _____ Date: _____

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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)

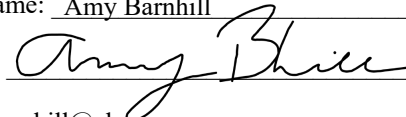
Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation.

- ☐ 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: Amy Barnhill

Title: Waste and Water Specialist

Signature: 

Date: 5-5-2021

email: ABarnhill@chevron.com

Telephone: 432-687-7108

OCD Only

Received by: Chad Hensley

Date: 07/30/2021

☒ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral ApprovedSignature: 

Date: 07/30/2021

Tracking Number: nAPP2036347592
Delineation Report and Remediation Plan
SD 13 SWD Corridor Line
Produced Water Release
Lea County, New Mexico

Latitude: N 32.035531°
Longitude: W -103.638179°

LAI Project No. 21-0100-03

April 26, 2021

Prepared for:
Chevron USA Inc.
6301 Deauville Blvd.
Midland, Texas 79706

Prepared by:
Larson & Associates, Inc.
507 North Marienfeld Street, Suite 202
Midland, Texas 79701

A blue ink signature of Mark J. Larson, consisting of a large, stylized 'M' and 'L'.

Mark J. Larson, P.G.
Certified Professional Geologist #10490

A blue ink signature of Robert Nelson, consisting of a large, stylized 'R' and 'N'.

Robert Nelson
Sr. Geoscientist

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Appendix B	Karst Risk Potential
Appendix C	Soil Boring Log
Appendix D	Laboratory Reports
Appendix E	Photographs

Tracking Number: nAPP2036347592
Delineation Report and Remediation Plan
Chevron USA, Inc., Salado Draw 13 SWD Corridor Line
Produced Water Release
April 26, 2021

1.0 INTRODUCTION

Larson & Associates, Inc. (LAI), has prepared this delineation report and remediation plan on behalf of Chevron USA Inc. (Chevron) for submittal to the New Mexico Oil Conservation Division (OCD) District I for a produced water release at the Salado Draw 13 SWD Corridor Line (Site) located in Unit P (SE/4, SE/4), Section 14, Township 26 South, Range 32 East in Lea County, New Mexico. The geodetic position is North 32.035531° and West -103.638179°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

The release was discovered on December 25, 2020 and occurred due to an underground water line failure on the main corridor line. Chevron reported that 62.7 barrels (bbls) of produced water was released and 40 bbls were recovered. The affected area measures approximately 1,972 square feet. The initial C-141 was submitted to OCD District 1 on December 25, 2020 and assigned incident number nAPP2036347592. Appendix A presents the Chevron spill calculation.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,160 feet above mean sea level (msl).
- The surface elevation gradually decreases to the southwest.
- There are no surface water features within 1,000 feet of the Site.
- Karst data provided by the USGS describes the Site as “medium risk” potential.
- The soils are designated as Pyote and Maljamar fine sands, 0 to 3 percent slopes, consisting of 0 to 30 fine sand, underlain by 30 to 60 inches of a fine sandy loam.
- The geology is Quaternary age sand and silt, and locally includes cover sand.
- Groundwater occurs greater than 101.5 feet below ground surface (bgs) based on depth to groundwater measurements 72 hours after installing a temporary monitor well (SB-1) on April 14, 2020.

Appendix B presents USGS data depicting karst risk potential. Appendix C presents the soil boring log.

1.3 Remediation Standards

The following remediation standards are based on closure criteria for soils impacted by a release as presented in Table 1 of 19.15.29 NMAC:

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 2,500 mg/Kg
- Chloride 20,000 mg/Kg

Further, 19.15.29.13 NMAC (Restoration, Reclamation and Re-Vegetation) requires the operator to restore the impacted surface area that existed prior to the release or their final land use.

Tracking Number: nAPP2036347592
Delineation Report and Remediation Plan
Chevron USA, Inc., Salado Draw 13 SWD Corridor Line
Produced Water Release
April 26, 2021

2.0 DELINEATION

On February 3, 2021, LAI personnel used a stainless-steel hand auger to collect soil samples from eight (8) locations inside of the spill area (S-1 through S-8) and in each cardinal direction of the spill (S-9 through S-12). The samples were collected at approximately 0.5 and 1-foot bgs. The soil samples were delivered under chain of custody and preservation to Xenco Laboratories (Xenco) in Midland, Texas, which analyzed the samples for benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH), including gasoline range organics (C6-C12), diesel range organics (>C12-C28) and oil range organics (>C28-C35), and chloride by EPA SW-846 Methods 8021B and 8015M, and M300, respectively.

Benzene, BTEX, and TPH were below the OCD remediation standards in Table 1 (19.15.29 NMAC) of 10 milligrams per kilogram (mg/Kg), 50 mg/Kg, and 100 mg/Kg, respectively. Chloride exceeded the OCD delineation limit of 600 mg/Kg in the following samples:

Sample ID	Depth (Feet)	Chloride Concentration (mg/Kg)
S-2	0.5	9,780
S-3	0.5	8,280
S-3	1	2,130
S-7	1	610
S-8	0.5	8,250
S-8	1	2,250

On March 9, 2021, LAI personnel used a Geoprobe® 7822DT direct push rig to further delineate chloride at sample locations S-2, S-3, S-7, and S-8. Soil samples were collected at approximately one (1), three (3), five (5), and ten (10) feet bgs. The laboratory results demonstrate the release was delineated according to the OCD remediation and closure requirements (19.15.29.12 NMAC Table 1) for groundwater greater than 100 feet bgs. Figure 2 presents an aerial map showing the sample locations. Appendix D presents the laboratory reports.

3.0 Remediation Plan

Chevron proposes the following remedial actions:

- Excavate soil from an area measuring approximately 1,972 square feet encompassing S-2, S-3, S-7, and S-8 to a depth of 1.5 feet bgs.
- Collect five (5) point composite bottom and sidewall confirmation soil samples every 200 square feet and analyze for BTEX, TPH and chloride.
- Backfill excavation with clean top within the ROW assuming achievement of OCD remediation levels.
- Seed the backfilled area with BLM mix #2.
- Prepare report with photographs for submittal to OCD District 1.

Figure 3 presents the proposed excavation areas.

Tables

Table 1
Soil Sample Analytical Data Summary
SD 13 SWD Corridor Line Produced Water Spill
Lea County, New Mexico
32° 02' 07.97" North, 103° 38' 17.89" West

Page 1 of 3

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				10	50	100/2,500				600/20,000
S-1	0.5	2/3/2021	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	17.5
	1	2/3/2021	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	36.6
S-2	0.5	2/3/2021	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	9,780
	1	2/3/2021	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	429
S-3	0.5	2/3/2021	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	8,280
	1	2/3/2021	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	2,130
	1	3/9/2021	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	1,450
	3	3/9/2021	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	179
	5	3/9/2021	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	147
	10	3/9/2021	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	201
S-4	0.5	2/3/2021	In-Situ	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	47.3
	1	2/3/2021	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	20.5
S-5	0.5	2/3/2021	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	84.1
	1	2/3/2021	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	15.1
S-6	0.5	2/3/2021	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	30.3
	1	2/3/2021	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	22.5
S-7	0.5	2/3/2021	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	20.0
	1	2/3/2021	In-Situ	0.00346	0.0271	<50.0	<50.0	<50.0	<50.0	610
	1	3/9/2021	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	154

Table 1
Soil Sample Analytical Data Summary
SD 13 SWD Corridor Line Produced Water Spill
Lea County, New Mexico
32° 02' 07.97" North, 103° 38' 17.89" West

Page 2 of 3

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				10	50	100/2,500				600/20,000
	3	3/9/2021	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	132
	5	3/9/2021	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	174
	10	3/9/2021	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	126
S-8	0.5	2/3/2021	In-Situ	<0.00202	0.0392	<50.0	<50.0	<50.0	<50.0	8,250
	1	2/3/2021	In-Situ	<0.00200	0.00357	<49.9	<49.9	<49.9	<49.9	2,250
	1	3/9/2021	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	124
	3	3/9/2021	In-Situ	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	182
	5	3/9/2021	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	133
	10	3/9/2021	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	56.1
S-9	0.5	2/3/2021	In-Situ	<0.00201	0.0188	<49.9	<49.9	<49.9	<49.9	172
	1	2/3/2021	In-Situ	0.00202	0.00545	<50.0	<50.0	<50.0	<50.0	10.9
S-10	0.5	2/3/2021	In-Situ	<0.00202	0.00232	<49.8	<49.8	<49.8	<49.8	99.7
	1	3/9/2021	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	20.1
S-11	0.5	2/3/2021	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	38.4
	1	2/3/2021	In-Situ	<0.00198	0.00965	<49.8	<49.8	<49.8	<49.8	35.8
S-12	0.5	2/3/2021	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	57.3
	1	2/3/2021	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	37.3

Notes: Analysis performed by Xenco Laboratories (Xenco) in Midland, Texas by EPA SW-846 8021B (BTEX), 8015M (TPH), and 300E (Chloride)
 Depth in feet below ground surface (bgs)

Table 1
Soil Sample Analytical Data Summary
SD 13 SWD Corridor Line Produced Water Spill
Lea County, New Mexico
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Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				10	50				100/2,500	600/20,000

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

<: denotes concentration less than analytical method reporting limit

Bold and Highlighted exceeds OCD remediation action limits

Figures

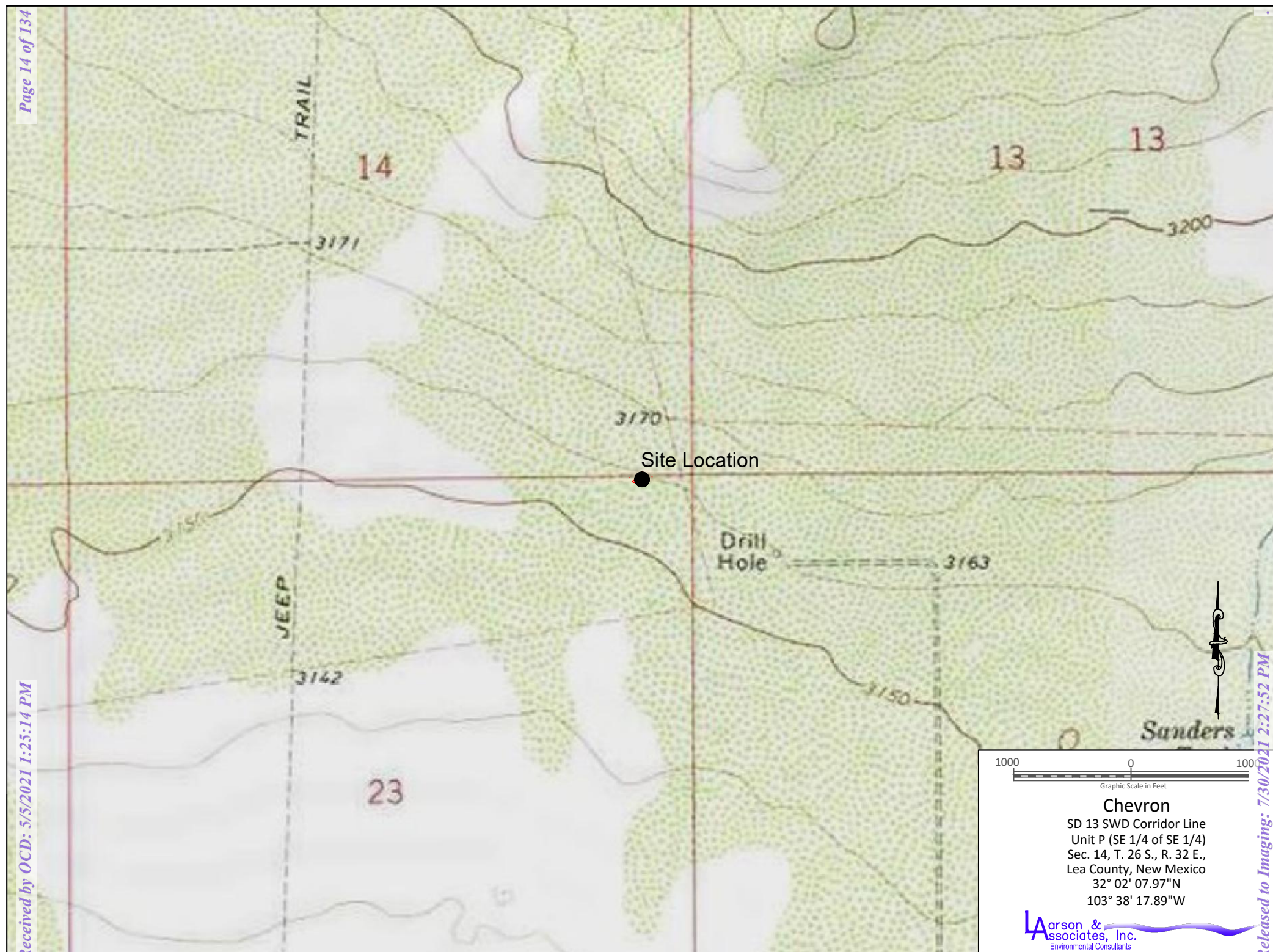
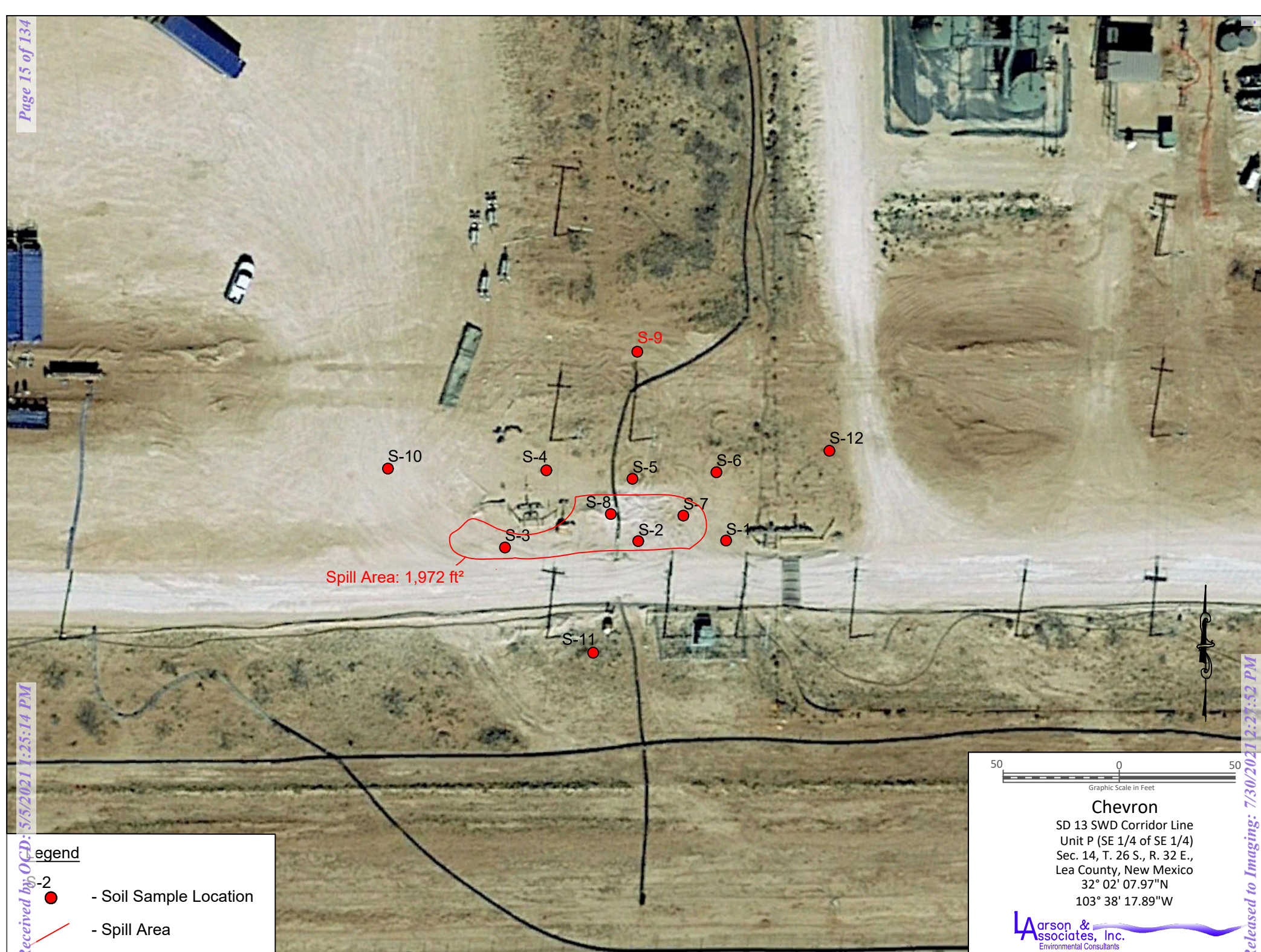
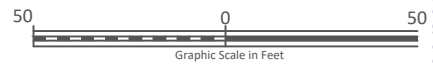


Figure 1 - Topographic Map



Legend

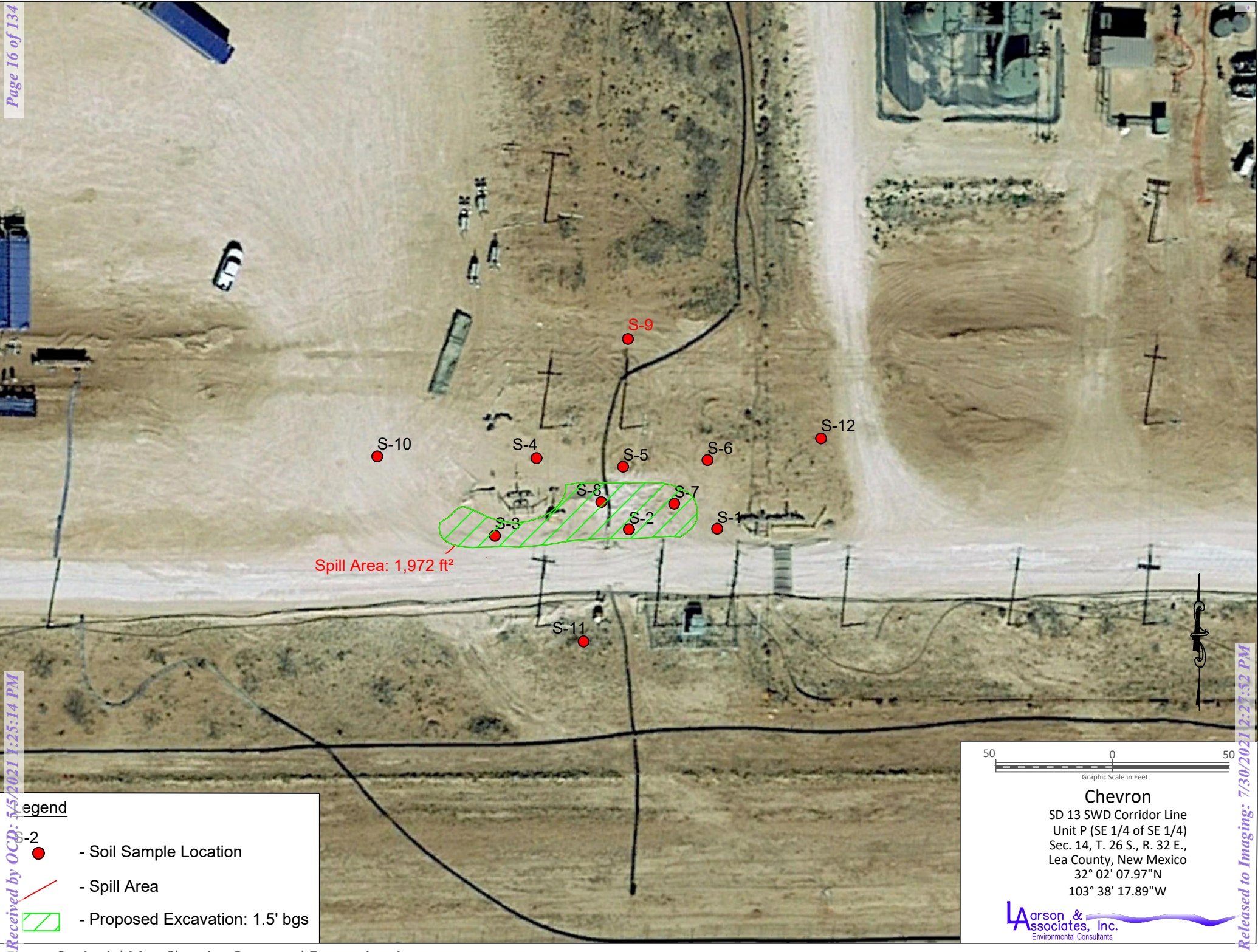
-  - Soil Sample Location
-  - Spill Area



Chevron
SD 13 SWD Corridor Line
Unit P (SE 1/4 of SE 1/4)
Sec. 14, T. 26 S., R. 32 E.,
Lea County, New Mexico
32° 02' 07.97"N
103° 38' 17.89"W



Figure 2 - Aerial Map



Legend

-  - Soil Sample Location
-  - Spill Area
-  - Proposed Excavation: 1.5' bgs

50 0 50
Graphic Scale in Feet

Chevron
SD 13 SWD Corridor Line
Unit P (SE 1/4 of SE 1/4)
Sec. 14, T. 26 S., R. 32 E.,
Lea County, New Mexico
32° 02' 07.97"N
103° 38' 17.89"W

Larson & Associates, Inc.
Environmental Consultants

Figure 3 - Aerial Map Showing Proposed Excavation Area



Figure 4 - Aerial Map Showing Soil Boring Location and Salado Draw 24 CTB

Appendix A
Chevron Spill Calculation

State of New Mexico
Oil Conservation Division

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Incident ID	
District RP	
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Area	Standing Liquid	In Soil	dimensions / shape	Oil Volume	Water Volume
1-Hole 1	0	2'	3' diam Circular	0	0.67
2- Hole 2	0	2'	Circular 2' diam	0	0.17
3- Main Runoff	0.0833	0.208	Rectangular 125x30	0	57.72
4-Runoff in road	0.0208	0	Rectangular 45x25	0	4.17
5					
6					
7					
8					
Total Fluid				0	62.7

Appendix B
Karst Risk Potential



Browser

★ Favorites

▶ Spatial Bookmarks

▶ Project Home

▶ Home

▶ C:\

▶ D:\

▶ L:\

▶ Z:\

▶ GeoPackage

▶ Spatialite

▶ PostgreSQL

▶ MSSQL

▶ Oracle

▶ DB2

▶ WMS/WMTS

▶ XYZ Tiles

▶ WCS

▶ WFS / OGC API - Features

▶ OWS

▶ ArcGisMapServer

▶ ArcGisFeatureServer

▶ GeoNode

Layers

✓ Karst or No Karst

✓ High

✓ Low

✓ Medium

✓ Bing Satellite



Appendix C

Boring Log

BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 10:35 MDT Finish: 15:15 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING										SAMPLE			REMARKS		
					PPM X <u>1</u>										NUMBER	PID READING	RECOVERY	DEPTH	BACKGROUND PID READING	
					2	4	6	8	10	12	14	16	18							
	0	Silty Sand, 5YR 5/4, Reddish Brown, Very Fine Grained Quartz Sand, Poorly Sorted, Dry	ML																	
	5															1				
	10	Caliche, 2.5YR 8/3, Pink, Very Fine Grained, Poorly Sorted, Dry																		
	15		Caliche																	
	20																			
	25															2				
	30	Silty Sand, 5YR 5/4, Reddish Brown, Fine Grained Quartz Sand with Caliche Clasts (~10mm), Poorly Sorted	ML													3				
	35	Caliche, 2.5YR 8/3, Pink, Very Fine Grained, Poorly Sorted with Subangular Clasts (~10mm)	Caliche																	
	40															4				
	45	Silty Sand, 5YR 6/4, Light Reddish Brown, Very Fine Grained Quartz Sand, Poorly Sorted with Subangular Caliche Clasts (~10mm)																		
	50		ML																	
	55																			
	60																			

☐ ONE CONTINUOUS AUGER SAMPLER

WATER TABLE (TIME OF BORING)

☐ STANDARD PENETRATION TEST

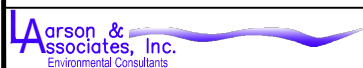
LABORATORY TEST LOCATION

☐ UNDISTURBED SAMPLE

PENETROMETER (TONS/ SQ. FT)

WATER TABLE (24 HRS)

NO RECOVERY

JOB NUMBER : Chevron/ 19-0180-01HOLE DIAMETER : 2"LOCATION : Salado Draw 24 CTBLAI GEOLOGIST : E. ChavezDRILLING CONTRACTOR : ScarboroughDRILLING METHOD : Air Rotary
 DRILL DATE :
04-14-2020

 BORING NUMBER :
SB-01

BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 10:35 MDT Finish: 15:15 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING										SAMPLE		REMARKS		
					PPM X <u>1</u>										NUMBER	PID READING	RECOVERY	DEPTH	BACKGROUND PID READING
					2	4	6	8	10	12	14	16	18						
	65	Silty Sand, 5YR 5/6, Yellowish Red, Very Fine Grained, Poorly Sorted with Subangular Caliche and Black Chert Clasts (~0.5mm)	ML												5		66		
	70																70		
	75																75		
	80																80		
	85																85		
	90	Silty Sand, 5YR 4/6, Yellowish Red, Fine Grained, Poorly Sorted with Subangular Caliche (~2mm)	ML														90		
	95																95		
	100																100		
	101.5														6		101.5		
	105																105		
		TD:101.5' Dry After 72 Hours																	

ONE CONTINUOUS AUGER SAMPLER	WATER TABLE (TIME OF BORING)	JOB NUMBER : <u>Chevron/ 19-0180-01</u>
STANDARD PENETRATION TEST	LABORATORY TEST LOCATION	HOLE DIAMETER : <u>2"</u>
UNDISTURBED SAMPLE	PENETROMETER (TONS/ SQ. FT)	LOCATION : <u>Salado Draw 24 CTB</u>
WATER TABLE (24 HRS)	NO RECOVERY	LAI GEOLOGIST : <u>E. Chavez</u>

	DRILL DATE : <u>04-14-2020</u>	BORING NUMBER : <u>SB-01</u>	DRILLING CONTRACTOR : <u>Scarborough</u>
			DRILLING METHOD : <u>Air Rotary</u>

Appendix D
Laboratory Reports

Certificate of Analysis Summary 687297

Larson and Associates, Inc., Midland, TX

Project Name: SD 13 SWD Corridor Line

Project Id: 21-0100-03

Date Received in Lab: Thu 02.04.2021 09:34

Contact: Mark Larson

Report Date: 02.11.2021 08:25

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	687297-001	687297-002	687297-003	687297-004	687297-005	687297-006
	<i>Field Id:</i>	S-1 0.5'	S-1 1'	S-2 0.5'	S-2 1'	S-3 0.5'	S-3 1'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	02.03.2021 12:28	02.03.2021 12:30	02.03.2021 12:32	02.03.2021 12:34	02.03.2021 12:36	02.03.2021 12:38
BTEX by EPA 8021B	<i>Extracted:</i>	02.05.2021 17:00	02.05.2021 17:00	02.05.2021 17:00	02.05.2021 17:00	02.05.2021 17:00	02.05.2021 17:00
	<i>Analyzed:</i>	02.06.2021 17:09	02.06.2021 17:30	02.06.2021 17:50	02.06.2021 18:11	02.06.2021 18:31	02.06.2021 18:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00404 0.00404	<0.00402 0.00402	<0.00398 0.00398	<0.00402 0.00402	<0.00401 0.00401	<0.00399 0.00399
o-Xylene		<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	02.04.2021 15:00	02.04.2021 17:45	02.04.2021 17:45	02.04.2021 17:45	02.04.2021 17:45	02.04.2021 17:45
	<i>Analyzed:</i>	02.04.2021 20:31	02.04.2021 21:03	02.04.2021 21:25	02.04.2021 21:30	02.04.2021 21:35	02.04.2021 21:51
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		17.5 4.98	36.6 4.97	9780 100	429 4.98	8280 50.3	2130 24.8
TPH by SW8015 Mod	<i>Extracted:</i>	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00
	<i>Analyzed:</i>	02.06.2021 13:10	02.06.2021 14:14	02.06.2021 14:34	02.06.2021 14:55	02.06.2021 15:17	02.06.2021 15:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<50.0 50.0
Total TPH		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<50.0 50.0

BRL - Below Reporting Limit



Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Certificate of Analysis Summary 687297

Larson and Associates, Inc., Midland, TX

Project Name: SD 13 SWD Corridor Line

Project Id: 21-0100-03

Date Received in Lab: Thu 02.04.2021 09:34

Contact: Mark Larson

Report Date: 02.11.2021 08:25

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	687297-007	687297-008	687297-009	687297-010	687297-011	687297-012
	<i>Field Id:</i>	S-4 0.5'	S-4 1'	S-5 0.5'	S-5 1'	S-6 0.5'	S-6 1'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	02.03.2021 12:40	02.03.2021 12:42	02.03.2021 12:44	02.03.2021 12:46	02.03.2021 12:48	02.03.2021 12:50
BTEX by EPA 8021B	<i>Extracted:</i>	02.05.2021 17:00	02.05.2021 17:00	02.09.2021 08:30	02.07.2021 09:00	02.07.2021 09:00	02.05.2021 15:00
	<i>Analyzed:</i>	02.06.2021 19:12	02.06.2021 19:33	02.09.2021 13:05	02.07.2021 16:53	02.07.2021 17:19	02.05.2021 19:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201
m,p-Xylenes		<0.00399 0.00399	<0.00401 0.00401	<0.00402 0.00402	<0.00399 0.00399	<0.00402 0.00402	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201
Chloride by EPA 300	<i>Extracted:</i>	02.04.2021 17:45	02.04.2021 17:45	02.04.2021 17:45	02.04.2021 17:45	02.04.2021 17:45	02.04.2021 17:45
	<i>Analyzed:</i>	02.04.2021 21:57	02.04.2021 22:02	02.04.2021 22:07	02.04.2021 22:13	02.04.2021 22:18	02.04.2021 22:34
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		47.3 4.99	20.5 4.95	84.1 5.05	15.1 5.03	30.3 4.95	22.5 5.00
TPH by SW8015 Mod	<i>Extracted:</i>	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00
	<i>Analyzed:</i>	02.06.2021 15:59	02.06.2021 16:20	02.06.2021 16:41	02.06.2021 17:02	02.06.2021 17:44	02.06.2021 18:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9
Total TPH		<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Certificate of Analysis Summary 687297

Larson and Associates, Inc., Midland, TX

Project Name: SD 13 SWD Corridor Line

Project Id: 21-0100-03

Contact: Mark Larson

Project Location:

Date Received in Lab: Thu 02.04.2021 09:34

Report Date: 02.11.2021 08:25

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	687297-013	687297-014	687297-015	687297-016	687297-017	687297-018
	<i>Field Id:</i>	S-7 0.5'	S-7 1'	S-8 0.5'	S-8 1'	S-9 0.5'	S-9 1'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	02.03.2021 12:52	02.03.2021 12:54	02.03.2021 12:56	02.03.2021 12:58	02.03.2021 12:00	02.03.2021 13:02
BTEX by EPA 8021B	<i>Extracted:</i>	02.05.2021 15:00	02.04.2021 17:00	02.04.2021 17:00	02.04.2021 17:00	02.04.2021 17:00	02.04.2021 17:00
	<i>Analyzed:</i>	02.05.2021 19:38	02.05.2021 06:20	02.05.2021 06:40	02.05.2021 07:01	02.05.2021 07:21	02.05.2021 07:42
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	0.00346 0.00199	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	0.00202 0.00200
Toluene		<0.00200 0.00200	0.00885 0.00199	0.0156 0.00202	0.00357 0.00200	0.00785 0.00201	0.00343 0.00200
Ethylbenzene		<0.00200 0.00200	0.00451 0.00199	0.00722 0.00202	<0.00200 0.00200	0.00277 0.00201	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	0.00676 0.00398	0.0110 0.00403	<0.00401 0.00401	0.00553 0.00402	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	0.00349 0.00199	0.00542 0.00202	<0.00200 0.00200	0.00265 0.00201	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	0.0103 0.00199	0.0164 0.00202	<0.00200 0.00200	0.00818 0.00201	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	0.0271 0.00199	0.0392 0.00202	0.00357 0.00200	0.0188 0.00201	0.00545 0.00200
Chloride by EPA 300	<i>Extracted:</i>	02.04.2021 17:45	02.04.2021 17:45	02.04.2021 17:45	02.04.2021 17:45	02.04.2021 17:45	02.04.2021 17:45
	<i>Analyzed:</i>	02.04.2021 22:39	02.04.2021 22:55	02.04.2021 23:00	02.04.2021 23:06	02.04.2021 23:11	02.04.2021 23:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		20.0 4.99	610 4.97	8250 50.2	2250 25.3	172 5.05	10.9 5.05
TPH by SW8015 Mod	<i>Extracted:</i>	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 09:00
	<i>Analyzed:</i>	02.06.2021 18:26	02.06.2021 18:47	02.06.2021 19:09	02.06.2021 19:30	02.06.2021 19:52	02.06.2021 20:13
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0
Total TPH		<50.0 50.0	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Certificate of Analysis Summary 687297

Larson and Associates, Inc., Midland, TX

Project Name: SD 13 SWD Corridor Line

Project Id: 21-0100-03

Date Received in Lab: Thu 02.04.2021 09:34

Contact: Mark Larson

Report Date: 02.11.2021 08:25

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	687297-019	687297-020	687297-021	687297-022	687297-023	
	<i>Field Id:</i>	S-10 0.5'	S-11 0.5'	S-11 1'	S- 12 0.5	S-12 1'	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	02.03.2021 13:04	02.03.2021 13:06	02.03.2021 13:08	02.03.2021 13:10	02.03.2021 13:12	
BTEX by EPA 8021B	<i>Extracted:</i>	02.04.2021 17:00	02.08.2021 11:15	02.08.2021 11:15	02.08.2021 11:15	02.08.2021 11:15	
	<i>Analyzed:</i>	02.05.2021 08:02	02.08.2021 15:19	02.08.2021 15:39	02.08.2021 15:59	02.08.2021 16:20	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00198 0.00198	
Toluene		0.00232 0.00202	<0.00199 0.00199	0.00513 0.00198	<0.00198 0.00198	<0.00198 0.00198	
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	0.00226 0.00198	<0.00198 0.00198	<0.00198 0.00198	
m,p-Xylenes		<0.00403 0.00403	<0.00398 0.00398	<0.00397 0.00397	<0.00396 0.00396	<0.00396 0.00396	
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	0.00226 0.00198	<0.00198 0.00198	<0.00198 0.00198	
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	0.00226 0.00198	<0.00198 0.00198	<0.00198 0.00198	
Total BTEX		0.00232 0.00202	<0.00199 0.00199	0.00965 0.00198	<0.00198 0.00198	<0.00198 0.00198	
Chloride by EPA 300	<i>Extracted:</i>	02.04.2021 17:45	02.04.2021 17:45	02.05.2021 15:30	02.05.2021 15:30	02.05.2021 15:30	
	<i>Analyzed:</i>	02.04.2021 23:22	02.04.2021 23:27	02.05.2021 15:56	02.05.2021 16:11	02.05.2021 16:16	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		99.7 5.00	38.4 4.98	35.8 X 4.96	57.3 5.03	37.3 4.99	
TPH by SW8015 Mod	<i>Extracted:</i>	02.06.2021 09:00	02.06.2021 09:00	02.06.2021 10:00	02.06.2021 10:00	02.06.2021 10:00	
	<i>Analyzed:</i>	02.06.2021 20:35	02.06.2021 20:57	02.07.2021 03:18	02.07.2021 03:39	02.07.2021 04:00	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	
Diesel Range Organics (DRO)		<49.8 49.8	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	
Total TPH		<49.8 49.8	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	

BRL - Below Reporting Limit



Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Analytical Report 687297

for

Larson and Associates, Inc.

Project Manager: Mark Larson

SD 13 SWD Corridor Line

21-0100-03

02.11.2021

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



02.11.2021

Project Manager: **Mark Larson**

Larson and Associates, Inc.

P. O. Box 50685

Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **687297**

SD 13 SWD Corridor Line

Project Address:

Mark Larson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 687297. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 687297 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Holly Taylor".

Holly Taylor
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1 0.5'	S	02.03.2021 12:28		687297-001
S-1 1'	S	02.03.2021 12:30		687297-002
S-2 0.5'	S	02.03.2021 12:32		687297-003
S-2 1'	S	02.03.2021 12:34		687297-004
S-3 0.5'	S	02.03.2021 12:36		687297-005
S-3 1'	S	02.03.2021 12:38		687297-006
S-4 0.5'	S	02.03.2021 12:40		687297-007
S-4 1'	S	02.03.2021 12:42		687297-008
S-5 0.5'	S	02.03.2021 12:44		687297-009
S-5 1'	S	02.03.2021 12:46		687297-010
S-6 0.5'	S	02.03.2021 12:48		687297-011
S-6 1'	S	02.03.2021 12:50		687297-012
S-7 0.5'	S	02.03.2021 12:52		687297-013
S-7 1'	S	02.03.2021 12:54		687297-014
S-8 0.5'	S	02.03.2021 12:56		687297-015
S-8 1'	S	02.03.2021 12:58		687297-016
S-9 0.5'	S	02.03.2021 12:00		687297-017
S-9 1'	S	02.03.2021 13:02		687297-018
S-10 0.5'	S	02.03.2021 13:04		687297-019
S-11 0.5'	S	02.03.2021 13:06		687297-020
S-11 1'	S	02.03.2021 13:08		687297-021
S- 12 0.5	S	02.03.2021 13:10		687297-022
S-12 1'	S	02.03.2021 13:12		687297-023

**CASE NARRATIVE****Client Name: Larson and Associates, Inc.****Project Name: SD 13 SWD Corridor Line**Project ID: 21-0100-03
Work Order Number(s): 687297Report Date: 02.11.2021
Date Received: 02.04.2021**Sample receipt non conformances and comments:****Sample receipt non conformances and comments per sample:**

None

Analytical non conformances and comments:

Batch: LBA-3150090 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected.

Samples affected are: 687301-001 SD.

Surrogate 1,4-Difluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 687301-001 S, 687301-001 SD.

Batch: LBA-3150223 BTEX by EPA 8021B

Outlier/s are due to possible matrix interference.

Lab Sample ID 687297-012 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 687297-012, -013

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected;

Samples affected are: 687297-012 S, 687297-012.

Batch: LBA-3150264 Chloride by EPA 300

Lab Sample ID 687297-021 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 687297-021, -022, -023.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3150311 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Samples affected are: 7720997-1-BKS, 7720997-1-BSD.

Batch: LBA-3150324 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7721011-1-BLK.



CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: SD 13 SWD Corridor Line

Project ID: 21-0100-03
Work Order Number(s): 687297

Report Date: 02.11.2021
Date Received: 02.04.2021

Batch: LBA-3150520 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Samples affected are: 7721162-1-BLK.



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-1 0.5'
Lab Sample Id: 687297-001

Matrix: Soil
Date Collected: 02.03.2021 12:28

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 02.04.2021 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150091

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.5	4.98	mg/kg	02.04.2021 20:31		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 13:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 13:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 13:10	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 13:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-130	02.06.2021 13:10	
o-Terphenyl	84-15-1	103	%	70-130	02.06.2021 13:10	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-1 0.5'**
Lab Sample Id: 687297-001

Matrix: Soil
Date Collected: 02.03.2021 12:28

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.05.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150285

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.06.2021 17:09	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.06.2021 17:09	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.06.2021 17:09	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.06.2021 17:09	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.06.2021 17:09	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.06.2021 17:09	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.06.2021 17:09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	83	%	70-130	02.06.2021 17:09		
4-Bromofluorobenzene	460-00-4	99	%	70-130	02.06.2021 17:09		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-1 1'
Lab Sample Id: 687297-002

Matrix: Soil
Date Collected: 02.03.2021 12:30

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	36.6	4.97	mg/kg	02.04.2021 21:03		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 14:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 14:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 14:14	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 14:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-130	02.06.2021 14:14	
o-Terphenyl	84-15-1	104	%	70-130	02.06.2021 14:14	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-1 1'
Lab Sample Id: 687297-002

Matrix: Soil
Date Collected: 02.03.2021 12:30

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.05.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150285

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.06.2021 17:30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.06.2021 17:30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.06.2021 17:30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.06.2021 17:30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.06.2021 17:30	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.06.2021 17:30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.06.2021 17:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	72	%	70-130	02.06.2021 17:30	
1,4-Difluorobenzene	540-36-3	102	%	70-130	02.06.2021 17:30	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-2 0.5'
Lab Sample Id: 687297-003

Matrix: Soil
Date Collected: 02.03.2021 12:32

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9780	100	mg/kg	02.04.2021 21:25		20

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.06.2021 14:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.06.2021 14:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.06.2021 14:34	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.06.2021 14:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-130	02.06.2021 14:34	
o-Terphenyl	84-15-1	115	%	70-130	02.06.2021 14:34	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-2 0.5'
Lab Sample Id: 687297-003

Matrix: Soil
Date Collected: 02.03.2021 12:32

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.05.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150285

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.06.2021 17:50	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.06.2021 17:50	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.06.2021 17:50	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.06.2021 17:50	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.06.2021 17:50	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.06.2021 17:50	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.06.2021 17:50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	02.06.2021 17:50		
4-Bromofluorobenzene	460-00-4	107	%	70-130	02.06.2021 17:50		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-2 1'
Lab Sample Id: 687297-004

Matrix: Soil
Date Collected: 02.03.2021 12:34

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	429	4.98	mg/kg	02.04.2021 21:30		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 14:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 14:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 14:55	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 14:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-130	02.06.2021 14:55	
o-Terphenyl	84-15-1	113	%	70-130	02.06.2021 14:55	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-2 1'
Lab Sample Id: 687297-004

Matrix: Soil
Date Collected: 02.03.2021 12:34

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.05.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150285

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.06.2021 18:11	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.06.2021 18:11	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.06.2021 18:11	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.06.2021 18:11	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.06.2021 18:11	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.06.2021 18:11	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.06.2021 18:11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	02.06.2021 18:11		
1,4-Difluorobenzene	540-36-3	92	%	70-130	02.06.2021 18:11		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-3 0.5'
Lab Sample Id: 687297-005

Matrix: Soil
Date Collected: 02.03.2021 12:36

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8280	50.3	mg/kg	02.04.2021 21:35		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 15:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 15:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 15:17	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 15:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-130	02.06.2021 15:17	
o-Terphenyl	84-15-1	112	%	70-130	02.06.2021 15:17	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-3 0.5'
Lab Sample Id: 687297-005

Matrix: Soil
Date Collected: 02.03.2021 12:36

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.05.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150285

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.06.2021 18:31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.06.2021 18:31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.06.2021 18:31	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.06.2021 18:31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.06.2021 18:31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.06.2021 18:31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.06.2021 18:31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	02.06.2021 18:31		
4-Bromofluorobenzene	460-00-4	104	%	70-130	02.06.2021 18:31		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-3 1'
Lab Sample Id: 687297-006

Matrix: Soil
Date Collected: 02.03.2021 12:38

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2130	24.8	mg/kg	02.04.2021 21:51		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 15:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 15:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 15:38	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 15:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-130	02.06.2021 15:38	
o-Terphenyl	84-15-1	112	%	70-130	02.06.2021 15:38	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-3 1'
Lab Sample Id: 687297-006

Matrix: Soil
Date Collected: 02.03.2021 12:38

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.05.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150285

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.06.2021 18:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.06.2021 18:52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.06.2021 18:52	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.06.2021 18:52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.06.2021 18:52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.06.2021 18:52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.06.2021 18:52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	02.06.2021 18:52		
1,4-Difluorobenzene	540-36-3	92	%	70-130	02.06.2021 18:52		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-4 0.5'**
Lab Sample Id: 687297-007

Matrix: Soil
Date Collected: 02.03.2021 12:40

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	47.3	4.99	mg/kg	02.04.2021 21:57		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.06.2021 15:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.06.2021 15:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.06.2021 15:59	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.06.2021 15:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-130	02.06.2021 15:59	
o-Terphenyl	84-15-1	112	%	70-130	02.06.2021 15:59	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-4 0.5'**
Lab Sample Id: 687297-007

Matrix: Soil
Date Collected: 02.03.2021 12:40

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.05.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150285

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.06.2021 19:12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.06.2021 19:12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.06.2021 19:12	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.06.2021 19:12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.06.2021 19:12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.06.2021 19:12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.06.2021 19:12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	02.06.2021 19:12		
4-Bromofluorobenzene	460-00-4	104	%	70-130	02.06.2021 19:12		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-4 1'
Lab Sample Id: 687297-008

Matrix: Soil
Date Collected: 02.03.2021 12:42

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.5	4.95	mg/kg	02.04.2021 22:02		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 16:20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 16:20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 16:20	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 16:20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	81	%	70-130	02.06.2021 16:20		
o-Terphenyl	84-15-1	106	%	70-130	02.06.2021 16:20		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-4 1'
Lab Sample Id: 687297-008

Matrix: Soil
Date Collected: 02.03.2021 12:42

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.05.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150285

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.06.2021 19:33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.06.2021 19:33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.06.2021 19:33	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.06.2021 19:33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.06.2021 19:33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.06.2021 19:33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.06.2021 19:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	78	%	70-130	02.06.2021 19:33	
1,4-Difluorobenzene	540-36-3	97	%	70-130	02.06.2021 19:33	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-5 0.5'
Lab Sample Id: 687297-009

Matrix: Soil
Date Collected: 02.03.2021 12:44

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	84.1	5.05	mg/kg	02.04.2021 22:07		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 16:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 16:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 16:41	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 16:41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	78	%	70-130	02.06.2021 16:41		
o-Terphenyl	84-15-1	110	%	70-130	02.06.2021 16:41		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-5 0.5'
Lab Sample Id: 687297-009

Matrix: Soil
Date Collected: 02.03.2021 12:44

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 02.09.2021 08:30

% Moisture:
Basis: Wet Weight

Seq Number: 3150520

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.09.2021 13:05	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.09.2021 13:05	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.09.2021 13:05	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.09.2021 13:05	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.09.2021 13:05	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.09.2021 13:05	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.09.2021 13:05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	122	%	70-130	02.09.2021 13:05		
4-Bromofluorobenzene	460-00-4	74	%	70-130	02.09.2021 13:05		



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-5 1'
Lab Sample Id: 687297-010

Matrix: Soil
Date Collected: 02.03.2021 12:46

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.1	5.03	mg/kg	02.04.2021 22:13		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.06.2021 17:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.06.2021 17:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.06.2021 17:02	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.06.2021 17:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-130	02.06.2021 17:02	
o-Terphenyl	84-15-1	102	%	70-130	02.06.2021 17:02	



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-5 1'
Lab Sample Id: 687297-010

Matrix: Soil
Date Collected: 02.03.2021 12:46

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.07.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150311

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.07.2021 16:53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.07.2021 16:53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.07.2021 16:53	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.07.2021 16:53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.07.2021 16:53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.07.2021 16:53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.07.2021 16:53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	129	%	70-130	02.07.2021 16:53		
1,4-Difluorobenzene	540-36-3	111	%	70-130	02.07.2021 16:53		



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-6 0.5'
Lab Sample Id: 687297-011

Matrix: Soil
Date Collected: 02.03.2021 12:48

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.3	4.95	mg/kg	02.04.2021 22:18		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 17:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 17:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 17:44	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 17:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-130	02.06.2021 17:44	
o-Terphenyl	84-15-1	113	%	70-130	02.06.2021 17:44	



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-6 0.5'**
Lab Sample Id: 687297-011

Matrix: Soil
Date Collected: 02.03.2021 12:48

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.07.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150311

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.07.2021 17:19	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.07.2021 17:19	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.07.2021 17:19	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.07.2021 17:19	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.07.2021 17:19	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.07.2021 17:19	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.07.2021 17:19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	129	%	70-130	02.07.2021 17:19		
1,4-Difluorobenzene	540-36-3	115	%	70-130	02.07.2021 17:19		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-6 1'
Lab Sample Id: 687297-012

Matrix: Soil
Date Collected: 02.03.2021 12:50

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.5	5.00	mg/kg	02.04.2021 22:34		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.06.2021 18:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.06.2021 18:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.06.2021 18:05	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.06.2021 18:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-130	02.06.2021 18:05	
o-Terphenyl	84-15-1	108	%	70-130	02.06.2021 18:05	



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-6 1'**
Lab Sample Id: 687297-012

Matrix: Soil
Date Collected: 02.03.2021 12:50

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.05.2021 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150223

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.05.2021 19:13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.05.2021 19:13	UF	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.05.2021 19:13	UF	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.05.2021 19:13	UF	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.05.2021 19:13	UF	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.05.2021 19:13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.05.2021 19:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	02.05.2021 19:13		
4-Bromofluorobenzene	460-00-4	137	%	70-130	02.05.2021 19:13	**	



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-7 0.5'
Lab Sample Id: 687297-013

Matrix: Soil
Date Collected: 02.03.2021 12:52

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.0	4.99	mg/kg	02.04.2021 22:39		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 18:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 18:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 18:26	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 18:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-130	02.06.2021 18:26	
o-Terphenyl	84-15-1	104	%	70-130	02.06.2021 18:26	



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-7 0.5'
Lab Sample Id: 687297-013

Matrix: Soil
Date Collected: 02.03.2021 12:52

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 02.05.2021 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150223

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.05.2021 19:38	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.05.2021 19:38	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.05.2021 19:38	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.05.2021 19:38	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.05.2021 19:38	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.05.2021 19:38	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.05.2021 19:38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	02.05.2021 19:38		
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.05.2021 19:38		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-7 1'
Lab Sample Id: 687297-014

Matrix: Soil
Date Collected: 02.03.2021 12:54

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	610	4.97	mg/kg	02.04.2021 22:55		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 18:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 18:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 18:47	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 18:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-130	02.06.2021 18:47	
o-Terphenyl	84-15-1	108	%	70-130	02.06.2021 18:47	



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-7 1'
Lab Sample Id: 687297-014

Matrix: Soil
Date Collected: 02.03.2021 12:54

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 02.04.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150090

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00346	0.00199	mg/kg	02.05.2021 06:20		1
Toluene	108-88-3	0.00885	0.00199	mg/kg	02.05.2021 06:20		1
Ethylbenzene	100-41-4	0.00451	0.00199	mg/kg	02.05.2021 06:20		1
m,p-Xylenes	179601-23-1	0.00676	0.00398	mg/kg	02.05.2021 06:20		1
o-Xylene	95-47-6	0.00349	0.00199	mg/kg	02.05.2021 06:20		1
Total Xylenes	1330-20-7	0.0103	0.00199	mg/kg	02.05.2021 06:20		1
Total BTEX		0.0271	0.00199	mg/kg	02.05.2021 06:20		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	02.05.2021 06:20		
1,4-Difluorobenzene	540-36-3	87	%	70-130	02.05.2021 06:20		



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-8 0.5'**
Lab Sample Id: 687297-015

Matrix: Soil
Date Collected: 02.03.2021 12:56

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8250	50.2	mg/kg	02.04.2021 23:00		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 19:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 19:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 19:09	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 19:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-130	02.06.2021 19:09	
o-Terphenyl	84-15-1	114	%	70-130	02.06.2021 19:09	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-8 0.5'**
Lab Sample Id: 687297-015

Matrix: Soil
Date Collected: 02.03.2021 12:56

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 02.04.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150090

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.05.2021 06:40	U	1
Toluene	108-88-3	0.0156	0.00202	mg/kg	02.05.2021 06:40		1
Ethylbenzene	100-41-4	0.00722	0.00202	mg/kg	02.05.2021 06:40		1
m,p-Xylenes	179601-23-1	0.0110	0.00403	mg/kg	02.05.2021 06:40		1
o-Xylene	95-47-6	0.00542	0.00202	mg/kg	02.05.2021 06:40		1
Total Xylenes	1330-20-7	0.0164	0.00202	mg/kg	02.05.2021 06:40		1
Total BTEX		0.0392	0.00202	mg/kg	02.05.2021 06:40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	70-130	02.05.2021 06:40	
4-Bromofluorobenzene	460-00-4	105	%	70-130	02.05.2021 06:40	



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-8 1'**
Lab Sample Id: 687297-016

Matrix: Soil
Date Collected: 02.03.2021 12:58

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2250	25.3	mg/kg	02.04.2021 23:06		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.06.2021 19:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.06.2021 19:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.06.2021 19:30	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.06.2021 19:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-130	02.06.2021 19:30	
o-Terphenyl	84-15-1	122	%	70-130	02.06.2021 19:30	



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-8 1'**
Lab Sample Id: 687297-016

Matrix: Soil
Date Collected: 02.03.2021 12:58

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 02.04.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150090

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.05.2021 07:01	U	1
Toluene	108-88-3	0.00357	0.00200	mg/kg	02.05.2021 07:01		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.05.2021 07:01	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.05.2021 07:01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.05.2021 07:01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.05.2021 07:01	U	1
Total BTEX		0.00357	0.00200	mg/kg	02.05.2021 07:01		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	02.05.2021 07:01		
1,4-Difluorobenzene	540-36-3	90	%	70-130	02.05.2021 07:01		



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-9 0.5'**
Lab Sample Id: 687297-017

Matrix: Soil
Date Collected: 02.03.2021 12:00

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	172	5.05	mg/kg	02.04.2021 23:11		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.06.2021 19:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.06.2021 19:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.06.2021 19:52	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.06.2021 19:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-130	02.06.2021 19:52	
o-Terphenyl	84-15-1	104	%	70-130	02.06.2021 19:52	



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-9 0.5'**
Lab Sample Id: 687297-017

Matrix: Soil
Date Collected: 02.03.2021 12:00

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 02.04.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150090

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.05.2021 07:21	U	1
Toluene	108-88-3	0.00785	0.00201	mg/kg	02.05.2021 07:21		1
Ethylbenzene	100-41-4	0.00277	0.00201	mg/kg	02.05.2021 07:21		1
m,p-Xylenes	179601-23-1	0.00553	0.00402	mg/kg	02.05.2021 07:21		1
o-Xylene	95-47-6	0.00265	0.00201	mg/kg	02.05.2021 07:21		1
Total Xylenes	1330-20-7	0.00818	0.00201	mg/kg	02.05.2021 07:21		1
Total BTEX		0.0188	0.00201	mg/kg	02.05.2021 07:21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	02.05.2021 07:21	
1,4-Difluorobenzene	540-36-3	88	%	70-130	02.05.2021 07:21	



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-9 1'**
Lab Sample Id: 687297-018

Matrix: Soil
Date Collected: 02.03.2021 13:02

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.9	5.05	mg/kg	02.04.2021 23:16		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.06.2021 20:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.06.2021 20:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.06.2021 20:13	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.06.2021 20:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	79	%	70-130	02.06.2021 20:13		
o-Terphenyl	84-15-1	106	%	70-130	02.06.2021 20:13		



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-9 1'**
Lab Sample Id: 687297-018

Matrix: Soil
Date Collected: 02.03.2021 13:02

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 02.04.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150090

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00202	0.00200	mg/kg	02.05.2021 07:42		1
Toluene	108-88-3	0.00343	0.00200	mg/kg	02.05.2021 07:42		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.05.2021 07:42	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.05.2021 07:42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.05.2021 07:42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.05.2021 07:42	U	1
Total BTEX		0.00545	0.00200	mg/kg	02.05.2021 07:42		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	02.05.2021 07:42		
1,4-Difluorobenzene	540-36-3	97	%	70-130	02.05.2021 07:42		



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-10 0.5'**
Lab Sample Id: 687297-019

Matrix: Soil
Date Collected: 02.03.2021 13:04

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	99.7	5.00	mg/kg	02.04.2021 23:22		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.06.2021 20:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.06.2021 20:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.06.2021 20:35	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.06.2021 20:35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	76	%	70-130	02.06.2021 20:35		
o-Terphenyl	84-15-1	101	%	70-130	02.06.2021 20:35		



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-10 0.5'**
Lab Sample Id: 687297-019

Matrix: Soil
Date Collected: 02.03.2021 13:04

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 02.04.2021 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150090

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.05.2021 08:02	U	1
Toluene	108-88-3	0.00232	0.00202	mg/kg	02.05.2021 08:02		1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.05.2021 08:02	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.05.2021 08:02	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.05.2021 08:02	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.05.2021 08:02	U	1
Total BTEX		0.00232	0.00202	mg/kg	02.05.2021 08:02		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	02.05.2021 08:02		
4-Bromofluorobenzene	460-00-4	104	%	70-130	02.05.2021 08:02		



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-11 0.5'
Lab Sample Id: 687297-020

Matrix: Soil
Date Collected: 02.03.2021 13:06

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

Analyst: SPC

Date Prep: 02.04.2021 17:45

% Moisture:
Basis: Wet Weight

Seq Number: 3150092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	38.4	4.98	mg/kg	02.04.2021 23:27		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.06.2021 20:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.06.2021 20:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.06.2021 20:57	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.06.2021 20:57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	78	%	70-130	02.06.2021 20:57		
o-Terphenyl	84-15-1	101	%	70-130	02.06.2021 20:57		



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-11 0.5'**
Lab Sample Id: 687297-020

Matrix: Soil
Date Collected: 02.03.2021 13:06

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 02.08.2021 11:15

% Moisture:
Basis: Wet Weight

Seq Number: 3150409

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.08.2021 15:19	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.08.2021 15:19	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.08.2021 15:19	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.08.2021 15:19	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.08.2021 15:19	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.08.2021 15:19	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.08.2021 15:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	02.08.2021 15:19	
4-Bromofluorobenzene	460-00-4	110	%	70-130	02.08.2021 15:19	



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SD 13 SWD Corridor Line

Sample Id: S-11 1'
Lab Sample Id: 687297-021

Matrix: Soil
Date Collected: 02.03.2021 13:08

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 02.05.2021 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3150264

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	35.8	4.96	mg/kg	02.05.2021 15:56	X	1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150327

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	02.07.2021 03:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	02.07.2021 03:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	02.07.2021 03:18	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	02.07.2021 03:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	71	%	70-130	02.07.2021 03:18	
o-Terphenyl	84-15-1	81	%	70-130	02.07.2021 03:18	



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Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: **S-11 1'**
Lab Sample Id: 687297-021

Matrix: Soil
Date Collected: 02.03.2021 13:08

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 02.08.2021 11:15

% Moisture:
Basis: Wet Weight

Seq Number: 3150409

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.08.2021 15:39	U	1
Toluene	108-88-3	0.00513	0.00198	mg/kg	02.08.2021 15:39		1
Ethylbenzene	100-41-4	0.00226	0.00198	mg/kg	02.08.2021 15:39		1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	02.08.2021 15:39	U	1
o-Xylene	95-47-6	0.00226	0.00198	mg/kg	02.08.2021 15:39		1
Total Xylenes	1330-20-7	0.00226	0.00198	mg/kg	02.08.2021 15:39		1
Total BTEX		0.00965	0.00198	mg/kg	02.08.2021 15:39		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	02.08.2021 15:39		
1,4-Difluorobenzene	540-36-3	99	%	70-130	02.08.2021 15:39		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S- 12 0.5
Lab Sample Id: 687297-022

Matrix: Soil
Date Collected: 02.03.2021 13:10

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 02.05.2021 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3150264

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	57.3	5.03	mg/kg	02.05.2021 16:11		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150327

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.07.2021 03:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.07.2021 03:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.07.2021 03:39	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.07.2021 03:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-130	02.07.2021 03:39	
o-Terphenyl	84-15-1	91	%	70-130	02.07.2021 03:39	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S- 12 0.5
Lab Sample Id: 687297-022

Matrix: Soil
Date Collected: 02.03.2021 13:10

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 02.08.2021 11:15

% Moisture:
Basis: Wet Weight

Seq Number: 3150409

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.08.2021 15:59	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.08.2021 15:59	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.08.2021 15:59	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.08.2021 15:59	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.08.2021 15:59	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.08.2021 15:59	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.08.2021 15:59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	02.08.2021 15:59		
4-Bromofluorobenzene	460-00-4	103	%	70-130	02.08.2021 15:59		



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-12 1'
Lab Sample Id: 687297-023

Matrix: Soil
Date Collected: 02.03.2021 13:12

Date Received: 02.04.2021 09:34

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 02.05.2021 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3150264

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.3	4.99	mg/kg	02.05.2021 16:16		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 02.06.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3150327

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.07.2021 04:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.07.2021 04:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.07.2021 04:00	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.07.2021 04:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-130	02.07.2021 04:00	
o-Terphenyl	84-15-1	92	%	70-130	02.07.2021 04:00	



Certificate of Analytical Results 687297

Larson and Associates, Inc., Midland, TX

SD 13 SWD Corridor Line

Sample Id: S-12 1'
Lab Sample Id: 687297-023

Matrix: Soil
Date Collected: 02.03.2021 13:12

Date Received: 02.04.2021 09:34

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 02.08.2021 11:15

% Moisture:
Basis: Wet Weight

Seq Number: 3150409

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.08.2021 16:20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.08.2021 16:20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.08.2021 16:20	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.08.2021 16:20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.08.2021 16:20	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.08.2021 16:20	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.08.2021 16:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	02.08.2021 16:20	
4-Bromofluorobenzene	460-00-4	100	%	70-130	02.08.2021 16:20	

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Larson and Associates, Inc.
SD 13 SWD Corridor Line

Analytical Method: Chloride by EPA 300

Seq Number: 3150091

MB Sample Id: 7720812-1-BLK

Matrix: Solid

LCS Sample Id: 7720812-1-BKS

Prep Method: E300P

Date Prep: 02.04.2021

LCSD Sample Id: 7720812-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	258	103	90-110	1	20	mg/kg	02.04.2021 17:57	

Analytical Method: Chloride by EPA 300

Seq Number: 3150092

MB Sample Id: 7720832-1-BLK

Matrix: Solid

LCS Sample Id: 7720832-1-BKS

Prep Method: E300P

Date Prep: 02.04.2021

LCSD Sample Id: 7720832-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	254	102	90-110	0	20	mg/kg	02.04.2021 20:53	

Analytical Method: Chloride by EPA 300

Seq Number: 3150264

MB Sample Id: 7720891-1-BLK

Matrix: Solid

LCS Sample Id: 7720891-1-BKS

Prep Method: E300P

Date Prep: 02.05.2021

LCSD Sample Id: 7720891-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	272	109	271	108	90-110	0	20	mg/kg	02.05.2021 15:45	

Analytical Method: Chloride by EPA 300

Seq Number: 3150091

Parent Sample Id: 687202-003

Matrix: Soil

MS Sample Id: 687202-003 S

Prep Method: E300P

Date Prep: 02.04.2021

MSD Sample Id: 687202-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3860	2530	6450	102	7140	130	90-110	10	20	mg/kg	02.04.2021 19:27	X

Analytical Method: Chloride by EPA 300

Seq Number: 3150091

Parent Sample Id: 687293-005

Matrix: Soil

MS Sample Id: 687293-005 S

Prep Method: E300P

Date Prep: 02.04.2021

MSD Sample Id: 687293-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	32.2	248	285	102	286	102	90-110	0	20	mg/kg	02.04.2021 18:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3150092

Parent Sample Id: 687297-002

Matrix: Soil

MS Sample Id: 687297-002 S

Prep Method: E300P

Date Prep: 02.04.2021

MSD Sample Id: 687297-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	36.6	249	289	101	287	101	90-110	1	20	mg/kg	02.04.2021 21:09	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Larson and Associates, Inc.

SD 13 SWD Corridor Line

Analytical Method: Chloride by EPA 300

Seq Number: 3150092

Parent Sample Id: 687297-011

Matrix: Soil

MS Sample Id: 687297-011 S

Prep Method: E300P

Date Prep: 02.04.2021

MSD Sample Id: 687297-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	30.3	248	281	101	280	101	90-110	0	20	mg/kg	02.04.2021 22:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3150264

Parent Sample Id: 687223-008

Matrix: Soil

MS Sample Id: 687223-008 S

Prep Method: E300P

Date Prep: 02.05.2021

MSD Sample Id: 687223-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5140	2490	7920	112	7800	107	90-110	2	20	mg/kg	02.05.2021 17:13	X

Analytical Method: Chloride by EPA 300

Seq Number: 3150264

Parent Sample Id: 687297-021

Matrix: Soil

MS Sample Id: 687297-021 S

Prep Method: E300P

Date Prep: 02.05.2021

MSD Sample Id: 687297-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	35.8	248	332	119	316	113	90-110	5	20	mg/kg	02.05.2021 16:01	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3150324

MB Sample Id: 7721011-1-BLK

Matrix: Solid

LCS Sample Id: 7721011-1-BKS

Prep Method: SW8015P

Date Prep: 02.06.2021

LCSD Sample Id: 7721011-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1080	108	1000	100	70-130	8	20	mg/kg	02.06.2021 12:28	
Diesel Range Organics (DRO)	<50.0	1000	1020	102	951	95	70-130	7	20	mg/kg	02.06.2021 12:28	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		106		106		70-130	%	02.06.2021 12:28
o-Terphenyl	137	**	127		119		70-130	%	02.06.2021 12:28

Analytical Method: TPH by SW8015 Mod

Seq Number: 3150327

MB Sample Id: 7721016-1-BLK

Matrix: Solid

LCS Sample Id: 7721016-1-BKS

Prep Method: SW8015P

Date Prep: 02.06.2021

LCSD Sample Id: 7721016-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1040	104	1110	111	70-130	7	20	mg/kg	02.06.2021 22:01	
Diesel Range Organics (DRO)	<50.0	1000	959	96	1030	103	70-130	7	20	mg/kg	02.06.2021 22:01	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	91		93		99		70-130	%	02.06.2021 22:01
o-Terphenyl	106		94		101		70-130	%	02.06.2021 22:01

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec

Larson and Associates, Inc.
SD 13 SWD Corridor Line
Analytical Method: TPH by SW8015 Mod

Seq Number: 3150324

Matrix: Solid

Prep Method: SW8015P

Date Prep: 02.06.2021

MB Sample Id: 7721011-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.06.2021 12:07	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3150327

Matrix: Solid

Prep Method: SW8015P

Date Prep: 02.06.2021

MB Sample Id: 7721016-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.06.2021 21:39	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3150324

Matrix: Soil

Prep Method: SW8015P

Date Prep: 02.06.2021

Parent Sample Id: 687297-001

MS Sample Id: 687297-001 S

MSD Sample Id: 687297-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	996	971	97	983	98	70-130	1	20	mg/kg	02.06.2021 13:31	
Diesel Range Organics (DRO)	<49.8	996	886	89	894	89	70-130	1	20	mg/kg	02.06.2021 13:31	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	91		91		70-130	%	02.06.2021 13:31
o-Terphenyl	108		107		70-130	%	02.06.2021 13:31

Analytical Method: TPH by SW8015 Mod

Seq Number: 3150327

Matrix: Soil

Prep Method: SW8015P

Date Prep: 02.06.2021

Parent Sample Id: 687301-002

MS Sample Id: 687301-002 S

MSD Sample Id: 687301-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	994	100	1010	101	70-130	2	20	mg/kg	02.06.2021 23:06	
Diesel Range Organics (DRO)	<49.9	997	904	91	905	91	70-130	0	20	mg/kg	02.06.2021 23:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	84		85		70-130	%	02.06.2021 23:06
o-Terphenyl	88		87		70-130	%	02.06.2021 23:06

 MS/MSD Percent Recovery
 Relative Percent Difference
 LCS/LCSD Recovery
 Log Difference

 $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

 LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

 MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Larson and Associates, Inc.
SD 13 SWD Corridor Line

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150090

Matrix: Solid

Prep Method: SW5035A

Date Prep: 02.04.2021

MB Sample Id: 7720848-1-BLK

LCS Sample Id: 7720848-1-BKS

LCSD Sample Id: 7720848-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0852	85	0.0959	96	70-130	12	35	mg/kg	02.04.2021 23:33	
Toluene	<0.00200	0.100	0.0807	81	0.0923	92	70-130	13	35	mg/kg	02.04.2021 23:33	
Ethylbenzene	<0.00200	0.100	0.0863	86	0.101	101	70-130	16	35	mg/kg	02.04.2021 23:33	
m,p-Xylenes	<0.00400	0.200	0.171	86	0.203	102	70-130	17	35	mg/kg	02.04.2021 23:33	
o-Xylene	<0.00200	0.100	0.0860	86	0.103	103	70-130	18	35	mg/kg	02.04.2021 23:33	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	91		101		103		70-130			%	02.04.2021 23:33	
4-Bromofluorobenzene	106		94		110		70-130			%	02.04.2021 23:33	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150223

Matrix: Solid

Prep Method: SW5035A

Date Prep: 02.05.2021

MB Sample Id: 7720901-1-BLK

LCS Sample Id: 7720901-1-BKS

LCSD Sample Id: 7720901-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.125	125	0.123	123	70-130	2	35	mg/kg	02.05.2021 16:13	
Toluene	<0.00200	0.100	0.120	120	0.117	117	70-130	3	35	mg/kg	02.05.2021 16:13	
Ethylbenzene	<0.00200	0.100	0.118	118	0.117	117	70-130	1	35	mg/kg	02.05.2021 16:13	
m,p-Xylenes	<0.00400	0.200	0.245	123	0.243	122	70-130	1	35	mg/kg	02.05.2021 16:13	
o-Xylene	<0.00200	0.100	0.117	117	0.118	118	70-130	1	35	mg/kg	02.05.2021 16:13	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	90		106		105		70-130			%	02.05.2021 16:13	
4-Bromofluorobenzene	87		124		129		70-130			%	02.05.2021 16:13	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150285

Matrix: Solid

Prep Method: SW5035A

Date Prep: 02.05.2021

MB Sample Id: 7720952-1-BLK

LCS Sample Id: 7720952-1-BKS

LCSD Sample Id: 7720952-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.101	101	0.101	101	70-130	0	35	mg/kg	02.06.2021 09:41	
Toluene	<0.00200	0.100	0.0947	95	0.0946	95	70-130	0	35	mg/kg	02.06.2021 09:41	
Ethylbenzene	<0.00200	0.100	0.0972	97	0.0964	96	70-130	1	35	mg/kg	02.06.2021 09:41	
m,p-Xylenes	<0.00400	0.200	0.192	96	0.191	96	70-130	1	35	mg/kg	02.06.2021 09:41	
o-Xylene	<0.00200	0.100	0.0954	95	0.0947	95	70-130	1	35	mg/kg	02.06.2021 09:41	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	88		101		101		70-130			%	02.06.2021 09:41	
4-Bromofluorobenzene	101		98		98		70-130			%	02.06.2021 09:41	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Larson and Associates, Inc.
SD 13 SWD Corridor Line

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150311

Matrix: Solid

Prep Method: SW5035A

Date Prep: 02.07.2021

MB Sample Id: 7720997-1-BLK

LCS Sample Id: 7720997-1-BKS

LCSD Sample Id: 7720997-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.130	130	0.125	125	70-130	4	35	mg/kg	02.07.2021 12:12	
Toluene	<0.00200	0.100	0.125	125	0.122	122	70-130	2	35	mg/kg	02.07.2021 12:12	
Ethylbenzene	<0.00200	0.100	0.123	123	0.119	119	70-130	3	35	mg/kg	02.07.2021 12:12	
m,p-Xylenes	<0.00400	0.200	0.252	126	0.247	124	70-130	2	35	mg/kg	02.07.2021 12:12	
o-Xylene	<0.00200	0.100	0.122	122	0.122	122	70-130	0	35	mg/kg	02.07.2021 12:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		102		109		70-130	%	02.07.2021 12:12
4-Bromofluorobenzene	92		131	**	141	**	70-130	%	02.07.2021 12:12

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150409

Matrix: Solid

Prep Method: SW5035A

Date Prep: 02.08.2021

MB Sample Id: 7721090-1-BLK

LCS Sample Id: 7721090-1-BKS

LCSD Sample Id: 7721090-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.105	105	0.0984	98	70-130	6	35	mg/kg	02.08.2021 12:15	
Toluene	<0.00200	0.100	0.100	100	0.0939	94	70-130	6	35	mg/kg	02.08.2021 12:15	
Ethylbenzene	<0.00200	0.100	0.106	106	0.0994	99	70-130	6	35	mg/kg	02.08.2021 12:15	
m,p-Xylenes	<0.00400	0.200	0.212	106	0.198	99	70-130	7	35	mg/kg	02.08.2021 12:15	
o-Xylene	<0.00200	0.100	0.104	104	0.0973	97	70-130	7	35	mg/kg	02.08.2021 12:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		102		100		70-130	%	02.08.2021 12:15
4-Bromofluorobenzene	104		100		99		70-130	%	02.08.2021 12:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150520

Matrix: Solid

Prep Method: SW5035A

Date Prep: 02.09.2021

MB Sample Id: 7721162-1-BLK

LCS Sample Id: 7721162-1-BKS

LCSD Sample Id: 7721162-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0753	75	0.0822	82	70-130	9	35	mg/kg	02.09.2021 10:22	
Toluene	<0.00200	0.100	0.0813	81	0.0855	86	70-130	5	35	mg/kg	02.09.2021 10:22	
Ethylbenzene	<0.00200	0.100	0.0838	84	0.0890	89	70-130	6	35	mg/kg	02.09.2021 10:22	
m,p-Xylenes	<0.00400	0.200	0.170	85	0.179	90	70-130	5	35	mg/kg	02.09.2021 10:22	
o-Xylene	<0.00200	0.100	0.0828	83	0.0842	84	70-130	2	35	mg/kg	02.09.2021 10:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		99		99		70-130	%	02.09.2021 10:22
4-Bromofluorobenzene	132	**	97		93		70-130	%	02.09.2021 10:22

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Larson and Associates, Inc.
SD 13 SWD Corridor Line

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150090

Parent Sample Id: 687301-001

Matrix: Soil

MS Sample Id: 687301-001 S

Prep Method: SW5035A

Date Prep: 02.04.2021

MSD Sample Id: 687301-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	2.35	0.0994	3.74	1398	2.86	513	70-130	27	35	mg/kg	02.05.2021 00:14	X
Toluene	5.96	0.0994	9.51	3571	0.372	0	70-130	185	35	mg/kg	02.05.2021 00:14	XF
Ethylbenzene	2.54	0.0994	4.66	2133	3.57	1036	70-130	26	35	mg/kg	02.05.2021 00:14	X
m,p-Xylenes	2.66	0.199	4.67	1010	1.96	0	70-130	82	35	mg/kg	02.05.2021 00:14	XF
o-Xylene	0.368	0.0994	0.640	274	0.511	144	70-130	22	35	mg/kg	02.05.2021 00:14	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	7300	**	299	**	70-130	%	02.05.2021 00:14
4-Bromofluorobenzene	90		17	**	70-130	%	02.05.2021 00:14

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150223

Parent Sample Id: 687297-012

Matrix: Soil

MS Sample Id: 687297-012 S

Prep Method: SW5035A

Date Prep: 02.05.2021

MSD Sample Id: 687297-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.114	114	0.0888	88	70-130	25	35	mg/kg	02.05.2021 17:05	
Toluene	<0.00200	0.100	0.111	111	0.0736	73	70-130	41	35	mg/kg	02.05.2021 17:05	F
Ethylbenzene	<0.00200	0.100	0.109	109	0.0758	75	70-130	36	35	mg/kg	02.05.2021 17:05	F
m,p-Xylenes	<0.00401	0.200	0.225	113	0.156	78	70-130	36	35	mg/kg	02.05.2021 17:05	F
o-Xylene	<0.00200	0.100	0.110	110	0.0767	76	70-130	36	35	mg/kg	02.05.2021 17:05	F

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		111		70-130	%	02.05.2021 17:05
4-Bromofluorobenzene	135	**	83		70-130	%	02.05.2021 17:05

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150285

Parent Sample Id: 687223-001

Matrix: Soil

MS Sample Id: 687223-001 S

Prep Method: SW5035A

Date Prep: 02.05.2021

MSD Sample Id: 687223-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0713	72	0.0782	78	70-130	9	35	mg/kg	02.06.2021 10:22	
Toluene	<0.00199	0.0996	0.0665	67	0.0724	73	70-130	8	35	mg/kg	02.06.2021 10:22	X
Ethylbenzene	<0.00199	0.0996	0.0702	70	0.0761	76	70-130	8	35	mg/kg	02.06.2021 10:22	
m,p-Xylenes	<0.00398	0.199	0.103	52	0.0985	49	70-130	4	35	mg/kg	02.06.2021 10:22	X
o-Xylene	<0.00199	0.0996	0.0687	69	0.0751	75	70-130	9	35	mg/kg	02.06.2021 10:22	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		101		70-130	%	02.06.2021 10:22
4-Bromofluorobenzene	100		98		70-130	%	02.06.2021 10:22

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Larson and Associates, Inc.
SD 13 SWD Corridor Line

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150311

Parent Sample Id: 687483-001

Matrix: Soil

MS Sample Id: 687483-001 S

Prep Method: SW5035A

Date Prep: 02.07.2021

MSD Sample Id: 687483-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0805	81	0.0578	58	70-130	33	35	mg/kg	02.07.2021 13:04	X
Toluene	<0.00200	0.0998	0.0826	83	0.0569	57	70-130	37	35	mg/kg	02.07.2021 13:04	XF
Ethylbenzene	<0.00200	0.0998	0.0778	78	0.0527	53	70-130	38	35	mg/kg	02.07.2021 13:04	XF
m,p-Xylenes	<0.00399	0.200	0.157	79	0.106	53	70-130	39	35	mg/kg	02.07.2021 13:04	XF
o-Xylene	<0.00200	0.0998	0.0778	78	0.0539	54	70-130	36	35	mg/kg	02.07.2021 13:04	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		98		70-130	%	02.07.2021 13:04
4-Bromofluorobenzene	129		85		70-130	%	02.07.2021 13:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150409

Parent Sample Id: 687584-001

Matrix: Soil

MS Sample Id: 687584-001 S

Prep Method: SW5035A

Date Prep: 02.08.2021

MSD Sample Id: 687584-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.0487	0.100	0.120	71	0.104	56	70-130	14	35	mg/kg	02.08.2021 12:56	X
Toluene	0.0357	0.100	0.0864	51	0.0826	47	70-130	4	35	mg/kg	02.08.2021 12:56	X
Ethylbenzene	0.0350	0.100	0.0827	48	0.0812	47	70-130	2	35	mg/kg	02.08.2021 12:56	X
m,p-Xylenes	0.0798	0.200	0.170	45	0.163	42	70-130	4	35	mg/kg	02.08.2021 12:56	X
o-Xylene	0.0414	0.100	0.0806	39	0.0823	41	70-130	2	35	mg/kg	02.08.2021 12:56	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		112		70-130	%	02.08.2021 12:56
4-Bromofluorobenzene	109		102		70-130	%	02.08.2021 12:56

Analytical Method: BTEX by EPA 8021B

Seq Number: 3150520

Parent Sample Id: 687306-006

Matrix: Soil

MS Sample Id: 687306-006 S

Prep Method: SW5035A

Date Prep: 02.09.2021

MSD Sample Id: 687306-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0738	74	0.111	112	70-130	40	35	mg/kg	02.09.2021 11:03	F
Toluene	<0.00200	0.100	0.0711	71	0.0926	93	70-130	26	35	mg/kg	02.09.2021 11:03	
Ethylbenzene	<0.00200	0.100	0.0626	63	0.0767	77	70-130	20	35	mg/kg	02.09.2021 11:03	X
m,p-Xylenes	<0.00400	0.200	0.128	64	0.155	78	70-130	19	35	mg/kg	02.09.2021 11:03	X
o-Xylene	<0.00200	0.100	0.0613	61	0.0834	84	70-130	31	35	mg/kg	02.09.2021 11:03	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		105		70-130	%	02.09.2021 11:03
4-Bromofluorobenzene	107		99		70-130	%	02.09.2021 11:03

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 02.04.2021 09.34.00 AM**Work Order #:** 687297**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-11.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 02.04.2021

Checklist reviewed by:

Holly Taylor

Date: 02.08.2021



Certificate of Analysis Summary 691113

Larson and Associates, Inc., Midland, TX

Project Name: SD SWD 13

Project Id: 21-0100-03

Contact: Mark Larson

Project Location:

Date Received in Lab: Wed 03.10.2021 08:21

Report Date: 03.18.2021 17:48

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	691113-001	691113-002	691113-003	691113-004	691113-005	691113-006
	<i>Field Id:</i>	S-10 1'	S-3 1'	S-3 3'	S-3 5'	S-3 10'	S-7 1'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	03.09.2021 10:08	03.09.2021 10:14	03.09.2021 10:16	03.09.2021 10:18	03.09.2021 10:20	03.09.2021 10:44
BTEX by EPA 8021B	<i>Extracted:</i>	03.16.2021 16:30	03.16.2021 16:30	03.16.2021 16:30	03.16.2021 16:30	03.16.2021 16:30	03.16.2021 16:30
	<i>Analyzed:</i>	03.17.2021 03:17	03.17.2021 03:43	03.17.2021 04:09	03.17.2021 04:36	03.17.2021 05:01	03.17.2021 05:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00396 0.00396	<0.00398 0.00398	<0.00400 0.00400	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	03.12.2021 14:30	03.12.2021 14:30	03.12.2021 16:00	03.12.2021 16:00	03.12.2021 16:00	03.12.2021 16:00
	<i>Analyzed:</i>	03.12.2021 18:24	03.12.2021 18:29	03.12.2021 18:11	03.12.2021 18:28	03.12.2021 18:33	03.12.2021 18:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		20.1 5.00	1450 25.0	179 5.00	147 4.96	201 49.9	154 4.97
TPH by SW8015 Mod	<i>Extracted:</i>	03.13.2021 10:00	03.13.2021 10:00	03.13.2021 10:00	03.13.2021 10:00	03.13.2021 10:00	03.13.2021 10:00
	<i>Analyzed:</i>	03.13.2021 23:02	03.14.2021 00:04	03.14.2021 00:25	03.14.2021 00:45	03.14.2021 01:06	03.14.2021 01:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.9 49.9	<50.0 50.0	<50.0 50.0	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<49.9 49.9	<49.9 49.9	<50.0 50.0	<50.0 50.0	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.9 49.9	<50.0 50.0	<50.0 50.0	<50.0 50.0	<49.9 49.9
Total TPH		<49.9 49.9	<49.9 49.9	<50.0 50.0	<50.0 50.0	<50.0 50.0	<49.9 49.9

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Certificate of Analysis Summary 691113



Larson and Associates, Inc., Midland, TX

Project Name: SD SWD 13

Project Id: 21-0100-03

Date Received in Lab: Wed 03.10.2021 08:21

Contact: Mark Larson

Report Date: 03.18.2021 17:48

Project Location:

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	691113-007	691113-008	691113-009	691113-010	691113-011	691113-012
	<i>Field Id:</i>	S-7 3'	S-7 5'	S-7 10'	S-8 1'	S-8 3'	S-8 5'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	03.09.2021 10:46	03.09.2021 10:48	03.09.2021 10:50	03.09.2021 10:34	03.09.2021 10:36	03.09.2021 10:38
BTEX by EPA 8021B	<i>Extracted:</i>	03.16.2021 16:45	03.16.2021 16:45	03.16.2021 16:45	03.16.2021 16:45	03.16.2021 16:45	03.16.2021 16:45
	<i>Analyzed:</i>	03.17.2021 09:48	03.17.2021 10:13	03.17.2021 10:38	03.17.2021 11:04	03.17.2021 11:29	03.17.2021 11:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00397 0.00397	<0.00399 0.00399	<0.00396 0.00396	<0.00402 0.00402	<0.00397 0.00397	<0.00399 0.00399
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	03.12.2021 16:00	03.12.2021 16:00	03.12.2021 16:00	03.12.2021 16:00	03.12.2021 16:00	03.12.2021 16:00
	<i>Analyzed:</i>	03.12.2021 18:44	03.12.2021 19:01	03.12.2021 19:06	03.12.2021 19:12	03.12.2021 19:17	03.12.2021 19:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		132 4.95	174 4.95	126 5.00	124 5.02	182 4.98	133 4.98
TPH by SW8015 Mod	<i>Extracted:</i>	03.13.2021 10:00	03.13.2021 10:00	03.13.2021 10:00	03.13.2021 10:00	03.13.2021 10:00	03.13.2021 10:00
	<i>Analyzed:</i>	03.14.2021 01:48	03.14.2021 03:08	03.14.2021 03:29	03.14.2021 03:50	03.14.2021 04:32	03.14.2021 04:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0
Diesel Range Organics (DRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0
Total TPH		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Certificate of Analysis Summary 691113

Larson and Associates, Inc., Midland, TX

Project Name: SD SWD 13

Project Id: 21-0100-03

Contact: Mark Larson

Project Location:

Date Received in Lab: Wed 03.10.2021 08:21

Report Date: 03.18.2021 17:48

Project Manager: Holly Taylor

Analysis Requested	Lab Id: 691113-013 Field Id: S-8 10' Depth: Matrix: SOIL Sampled: 03.09.2021 10:40					
BTEX by EPA 8021B	Extracted: 03.16.2021 16:45 Analyzed: 03.17.2021 12:19 Units/RL: mg/kg RL					
Benzene	<0.00200 0.00200					
Toluene	<0.00200 0.00200					
Ethylbenzene	<0.00200 0.00200					
m,p-Xylenes	<0.00400 0.00400					
o-Xylene	<0.00200 0.00200					
Total Xylenes	<0.00200 0.00200					
Total BTEX	<0.00200 0.00200					
Chloride by EPA 300	Extracted: 03.12.2021 16:00 Analyzed: 03.12.2021 19:28 Units/RL: mg/kg RL					
Chloride	56.1 4.98					
TPH by SW8015 Mod	Extracted: 03.13.2021 10:00 Analyzed: 03.14.2021 05:14 Units/RL: mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<49.9 49.9					
Diesel Range Organics (DRO)	<49.9 49.9					
Motor Oil Range Hydrocarbons (MRO)	<49.9 49.9					
Total TPH	<49.9 49.9					

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Analytical Report 691113

for

Larson and Associates, Inc.

Project Manager: Mark Larson

SD SWD 13

21-0100-03

03.18.2021

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



03.18.2021

Project Manager: **Mark Larson**

Larson and Associates, Inc.

P. O. Box 50685

Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **691113**

SD SWD 13

Project Address:

Mark Larson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 691113. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 691113 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Holly Taylor".

Holly Taylor
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

**Sample Cross Reference 691113****Larson and Associates, Inc., Midland, TX**

SD SWD 13

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-10 1'	S	03.09.2021 10:08		691113-001
S-3 1'	S	03.09.2021 10:14		691113-002
S-3 3'	S	03.09.2021 10:16		691113-003
S-3 5'	S	03.09.2021 10:18		691113-004
S-3 10'	S	03.09.2021 10:20		691113-005
S-7 1'	S	03.09.2021 10:44		691113-006
S-7 3'	S	03.09.2021 10:46		691113-007
S-7 5'	S	03.09.2021 10:48		691113-008
S-7 10'	S	03.09.2021 10:50		691113-009
S-8 1'	S	03.09.2021 10:34		691113-010
S-8 3'	S	03.09.2021 10:36		691113-011
S-8 5'	S	03.09.2021 10:38		691113-012
S-8 10'	S	03.09.2021 10:40		691113-013



CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: SD SWD 13

Project ID: 21-0100-03
Work Order Number(s): 691113

Report Date: 03.18.2021
Date Received: 03.10.2021

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3153889 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered below QC limits. Samples affected are: 7723457-1-BLK.



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-10 1'**
Lab Sample Id: 691113-001

Matrix: Soil
Date Collected: 03.09.2021 10:08

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 14:30

% Moisture:
Basis: Wet Weight

Seq Number: 3153617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.1	5.00	mg/kg	03.12.2021 18:24		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.13.2021 23:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.13.2021 23:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.13.2021 23:02	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.13.2021 23:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	113	%	70-130	03.13.2021 23:02		
o-Terphenyl	84-15-1	114	%	70-130	03.13.2021 23:02		



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-10 1'**
Lab Sample Id: 691113-001

Matrix: Soil
Date Collected: 03.09.2021 10:08

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:30

% Moisture:
Basis: Wet Weight

Seq Number: 3153889

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.17.2021 03:17	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.17.2021 03:17	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.17.2021 03:17	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	03.17.2021 03:17	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.17.2021 03:17	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.17.2021 03:17	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.17.2021 03:17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	03.17.2021 03:17		
4-Bromofluorobenzene	460-00-4	101	%	70-130	03.17.2021 03:17		



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: S-3 1'
Lab Sample Id: 691113-002

Matrix: Soil
Date Collected: 03.09.2021 10:14

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 14:30

% Moisture:
Basis: Wet Weight

Seq Number: 3153617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1450	25.0	mg/kg	03.12.2021 18:29		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.14.2021 00:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.14.2021 00:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.14.2021 00:04	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.14.2021 00:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-130	03.14.2021 00:04	
o-Terphenyl	84-15-1	106	%	70-130	03.14.2021 00:04	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-3 1'**
Lab Sample Id: 691113-002

Matrix: Soil
Date Collected: 03.09.2021 10:14

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:30

% Moisture:
Basis: Wet Weight

Seq Number: 3153889

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.17.2021 03:43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.17.2021 03:43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.17.2021 03:43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.17.2021 03:43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.17.2021 03:43	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.17.2021 03:43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.17.2021 03:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	03.17.2021 03:43	
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.17.2021 03:43	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: S-3 3'
Lab Sample Id: 691113-003

Matrix: Soil
Date Collected: 03.09.2021 10:16

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153623

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	179	5.00	mg/kg	03.12.2021 18:11		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.14.2021 00:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.14.2021 00:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.14.2021 00:25	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.14.2021 00:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	03.14.2021 00:25	
o-Terphenyl	84-15-1	105	%	70-130	03.14.2021 00:25	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-3 3'**
Lab Sample Id: 691113-003

Matrix: Soil
Date Collected: 03.09.2021 10:16

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:30

% Moisture:
Basis: Wet Weight

Seq Number: 3153889

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.17.2021 04:09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.17.2021 04:09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.17.2021 04:09	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.17.2021 04:09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.17.2021 04:09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.17.2021 04:09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.17.2021 04:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.17.2021 04:09	
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.17.2021 04:09	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: S-3 5'
Lab Sample Id: 691113-004

Matrix: Soil
Date Collected: 03.09.2021 10:18

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153623

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	147	4.96	mg/kg	03.12.2021 18:28		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.14.2021 00:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.14.2021 00:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.14.2021 00:45	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.14.2021 00:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-130	03.14.2021 00:45	
o-Terphenyl	84-15-1	110	%	70-130	03.14.2021 00:45	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: S-3 5'
Lab Sample Id: 691113-004

Matrix: Soil
Date Collected: 03.09.2021 10:18

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:30

% Moisture:
Basis: Wet Weight

Seq Number: 3153889

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.17.2021 04:36	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.17.2021 04:36	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.17.2021 04:36	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.17.2021 04:36	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.17.2021 04:36	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.17.2021 04:36	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.17.2021 04:36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	03.17.2021 04:36		
1,4-Difluorobenzene	540-36-3	115	%	70-130	03.17.2021 04:36		



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: S-3 10'
Lab Sample Id: 691113-005

Matrix: Soil
Date Collected: 03.09.2021 10:20

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153623

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	201	49.9	mg/kg	03.12.2021 18:33		10

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.14.2021 01:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.14.2021 01:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.14.2021 01:06	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.14.2021 01:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-130	03.14.2021 01:06	
o-Terphenyl	84-15-1	114	%	70-130	03.14.2021 01:06	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-3 10'**
Lab Sample Id: 691113-005

Matrix: Soil
Date Collected: 03.09.2021 10:20

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:30

% Moisture:
Basis: Wet Weight

Seq Number: 3153889

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.17.2021 05:01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.17.2021 05:01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.17.2021 05:01	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.17.2021 05:01	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.17.2021 05:01	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.17.2021 05:01	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.17.2021 05:01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	03.17.2021 05:01		
1,4-Difluorobenzene	540-36-3	112	%	70-130	03.17.2021 05:01		



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: S-7 1'
Lab Sample Id: 691113-006

Matrix: Soil
Date Collected: 03.09.2021 10:44

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153623

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	154	4.97	mg/kg	03.12.2021 18:39		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.14.2021 01:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.14.2021 01:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.14.2021 01:27	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.14.2021 01:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	03.14.2021 01:27	
o-Terphenyl	84-15-1	103	%	70-130	03.14.2021 01:27	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: S-7 1'
Lab Sample Id: 691113-006

Matrix: Soil
Date Collected: 03.09.2021 10:44

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:30

% Moisture:
Basis: Wet Weight

Seq Number: 3153889

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.17.2021 05:27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.17.2021 05:27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.17.2021 05:27	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.17.2021 05:27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.17.2021 05:27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.17.2021 05:27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.17.2021 05:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	03.17.2021 05:27		
1,4-Difluorobenzene	540-36-3	99	%	70-130	03.17.2021 05:27		



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: S-7 3'
Lab Sample Id: 691113-007

Matrix: Soil
Date Collected: 03.09.2021 10:46

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153623

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	132	4.95	mg/kg	03.12.2021 18:44		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.14.2021 01:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.14.2021 01:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.14.2021 01:48	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.14.2021 01:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-130	03.14.2021 01:48	
o-Terphenyl	84-15-1	119	%	70-130	03.14.2021 01:48	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-7 3'**
Lab Sample Id: 691113-007

Matrix: Soil
Date Collected: 03.09.2021 10:46

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:45

% Moisture:
Basis: Wet Weight

Seq Number: 3154070

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.17.2021 09:48	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.17.2021 09:48	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.17.2021 09:48	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	03.17.2021 09:48	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.17.2021 09:48	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.17.2021 09:48	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.17.2021 09:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.17.2021 09:48		
1,4-Difluorobenzene	540-36-3	103	%	70-130	03.17.2021 09:48		



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: S-7 5'
Lab Sample Id: 691113-008

Matrix: Soil
Date Collected: 03.09.2021 10:48

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153623

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	174	4.95	mg/kg	03.12.2021 19:01		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.14.2021 03:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.14.2021 03:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.14.2021 03:08	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.14.2021 03:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	03.14.2021 03:08	
o-Terphenyl	84-15-1	105	%	70-130	03.14.2021 03:08	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: S-7 5'
Lab Sample Id: 691113-008

Matrix: Soil
Date Collected: 03.09.2021 10:48

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:45

% Moisture:
Basis: Wet Weight

Seq Number: 3154070

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.17.2021 10:13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.17.2021 10:13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.17.2021 10:13	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.17.2021 10:13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.17.2021 10:13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.17.2021 10:13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.17.2021 10:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	70-130	03.17.2021 10:13		
1,4-Difluorobenzene	540-36-3	105	%	70-130	03.17.2021 10:13		



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Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: S-7 10'
Lab Sample Id: 691113-009

Matrix: Soil
Date Collected: 03.09.2021 10:50

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153623

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	126	5.00	mg/kg	03.12.2021 19:06		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.14.2021 03:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.14.2021 03:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.14.2021 03:29	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.14.2021 03:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-130	03.14.2021 03:29	
o-Terphenyl	84-15-1	106	%	70-130	03.14.2021 03:29	



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Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-7 10'**
Lab Sample Id: 691113-009

Matrix: Soil
Date Collected: 03.09.2021 10:50

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:45

% Moisture:
Basis: Wet Weight

Seq Number: 3154070

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.17.2021 10:38	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.17.2021 10:38	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.17.2021 10:38	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	03.17.2021 10:38	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.17.2021 10:38	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.17.2021 10:38	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.17.2021 10:38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	115	%	70-130	03.17.2021 10:38		
4-Bromofluorobenzene	460-00-4	100	%	70-130	03.17.2021 10:38		



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-8 1'**
Lab Sample Id: 691113-010

Matrix: Soil
Date Collected: 03.09.2021 10:34

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153623

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	124	5.02	mg/kg	03.12.2021 19:12		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.14.2021 03:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.14.2021 03:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.14.2021 03:50	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.14.2021 03:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-130	03.14.2021 03:50	
o-Terphenyl	84-15-1	102	%	70-130	03.14.2021 03:50	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-8 1'**
Lab Sample Id: 691113-010

Matrix: Soil
Date Collected: 03.09.2021 10:34

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:45

% Moisture:
Basis: Wet Weight

Seq Number: 3154070

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.17.2021 11:04	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.17.2021 11:04	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.17.2021 11:04	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.17.2021 11:04	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.17.2021 11:04	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.17.2021 11:04	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.17.2021 11:04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	120	%	70-130	03.17.2021 11:04		
4-Bromofluorobenzene	460-00-4	101	%	70-130	03.17.2021 11:04		



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-8 3'**
Lab Sample Id: 691113-011

Matrix: Soil
Date Collected: 03.09.2021 10:36

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153623

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	182	4.98	mg/kg	03.12.2021 19:17		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	03.14.2021 04:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	03.14.2021 04:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.14.2021 04:32	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	03.14.2021 04:32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	102	%	70-130	03.14.2021 04:32		
o-Terphenyl	84-15-1	106	%	70-130	03.14.2021 04:32		



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-8 3'**
 Lab Sample Id: 691113-011

Matrix: Soil
 Date Collected: 03.09.2021 10:36

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:45

% Moisture:
 Basis: Wet Weight

Seq Number: 3154070

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.17.2021 11:29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.17.2021 11:29	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.17.2021 11:29	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	03.17.2021 11:29	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.17.2021 11:29	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.17.2021 11:29	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.17.2021 11:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	03.17.2021 11:29		
1,4-Difluorobenzene	540-36-3	115	%	70-130	03.17.2021 11:29		



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Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-8 5'**
Lab Sample Id: 691113-012

Matrix: Soil
Date Collected: 03.09.2021 10:38

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153623

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	133	4.98	mg/kg	03.12.2021 19:23		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.14.2021 04:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.14.2021 04:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.14.2021 04:53	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.14.2021 04:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-130	03.14.2021 04:53	
o-Terphenyl	84-15-1	106	%	70-130	03.14.2021 04:53	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-8 5'**
Lab Sample Id: 691113-012

Matrix: Soil
Date Collected: 03.09.2021 10:38

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:45

% Moisture:
Basis: Wet Weight

Seq Number: 3154070

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.17.2021 11:54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.17.2021 11:54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.17.2021 11:54	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.17.2021 11:54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.17.2021 11:54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.17.2021 11:54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.17.2021 11:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	117	%	70-130	03.17.2021 11:54		
4-Bromofluorobenzene	460-00-4	99	%	70-130	03.17.2021 11:54		



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Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-8 10'**
Lab Sample Id: 691113-013

Matrix: Soil
Date Collected: 03.09.2021 10:40

Date Received: 03.10.2021 08:21

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 03.12.2021 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153623

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	56.1	4.98	mg/kg	03.12.2021 19:28		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 03.13.2021 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3153698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.14.2021 05:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.14.2021 05:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.14.2021 05:14	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.14.2021 05:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-130	03.14.2021 05:14	
o-Terphenyl	84-15-1	106	%	70-130	03.14.2021 05:14	



Certificate of Analytical Results 691113

Larson and Associates, Inc., Midland, TX

SD SWD 13

Sample Id: **S-8 10'**
Lab Sample Id: 691113-013

Matrix: Soil
Date Collected: 03.09.2021 10:40

Date Received: 03.10.2021 08:21

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 03.16.2021 16:45

% Moisture:
Basis: Wet Weight

Seq Number: 3154070

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.17.2021 12:19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.17.2021 12:19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.17.2021 12:19	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.17.2021 12:19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.17.2021 12:19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.17.2021 12:19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.17.2021 12:19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	03.17.2021 12:19		
1,4-Difluorobenzene	540-36-3	117	%	70-130	03.17.2021 12:19		

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Larson and Associates, Inc.

SD SWD 13

Analytical Method: Chloride by EPA 300

Seq Number: 3153617

MB Sample Id: 7723213-1-BLK

Matrix: Solid

LCS Sample Id: 7723213-1-BKS

Prep Method: E300P

Date Prep: 03.12.2021

LCSD Sample Id: 7723213-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	245	98	245	98	90-110	0	20	mg/kg	03.12.2021 16:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3153623

MB Sample Id: 7723214-1-BLK

Matrix: Solid

LCS Sample Id: 7723214-1-BKS

Prep Method: E300P

Date Prep: 03.12.2021

LCSD Sample Id: 7723214-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	250	100	250	100	90-110	0	20	mg/kg	03.12.2021 18:00	

Analytical Method: Chloride by EPA 300

Seq Number: 3153617

Parent Sample Id: 690846-007

Matrix: Soil

MS Sample Id: 690846-007 S

Prep Method: E300P

Date Prep: 03.12.2021

MSD Sample Id: 690846-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.54	249	271	105	272	105	90-110	0	20	mg/kg	03.12.2021 17:29	

Analytical Method: Chloride by EPA 300

Seq Number: 3153623

Parent Sample Id: 690851-002

Matrix: Soil

MS Sample Id: 690851-002 S

Prep Method: E300P

Date Prep: 03.12.2021

MSD Sample Id: 690851-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2460	1250	3860	112	3870	113	90-110	0	20	mg/kg	03.12.2021 16:19	X

Analytical Method: Chloride by EPA 300

Seq Number: 3153623

Parent Sample Id: 691113-003

Matrix: Soil

MS Sample Id: 691113-003 S

Prep Method: E300P

Date Prep: 03.12.2021

MSD Sample Id: 691113-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	179	250	434	102	433	102	90-110	0	20	mg/kg	03.12.2021 18:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3153623

Parent Sample Id: 691113-013

Matrix: Soil

MS Sample Id: 691113-013 S

Prep Method: E300P

Date Prep: 03.12.2021

MSD Sample Id: 691113-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	56.1	249	314	104	314	104	90-110	0	20	mg/kg	03.12.2021 19:34	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



Larson and Associates, Inc.

SD SWD 13

Analytical Method: TPH by SW8015 Mod

Seq Number: 3153698

MB Sample Id: 7723336-1-BLK

Matrix: Solid

LCS Sample Id: 7723336-1-BKS

Prep Method: SW8015P

Date Prep: 03.13.2021

LCSD Sample Id: 7723336-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1170	117	1140	114	70-130	3	20	mg/kg	03.13.2021 22:20	
Diesel Range Organics (DRO)	<50.0	1000	1130	113	1100	110	70-130	3	20	mg/kg	03.13.2021 22:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		128		125		70-130	%	03.13.2021 22:20
o-Terphenyl	113		113		111		70-130	%	03.13.2021 22:20

Analytical Method: TPH by SW8015 Mod

Seq Number: 3153698

Matrix: Solid

Prep Method: SW8015P

Date Prep: 03.13.2021

MB Sample Id: 7723336-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.13.2021 21:59	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3153698

Matrix: Soil

Prep Method: SW8015P

Date Prep: 03.13.2021

Parent Sample Id: 691113-001

MS Sample Id: 691113-001 S

MSD Sample Id: 691113-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	996	921	92	1070	107	70-130	15	20	mg/kg	03.13.2021 23:23	
Diesel Range Organics (DRO)	<49.8	996	889	89	1010	101	70-130	13	20	mg/kg	03.13.2021 23:23	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		109		70-130	%	03.13.2021 23:23
o-Terphenyl	86		96		70-130	%	03.13.2021 23:23

Analytical Method: BTEX by EPA 8021B

Seq Number: 3153889

Matrix: Solid

Prep Method: SW5035A

Date Prep: 03.16.2021

MB Sample Id: 7723457-1-BLK

LCS Sample Id: 7723457-1-BKS

LCSD Sample Id: 7723457-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.107	107	0.113	113	70-130	5	35	mg/kg	03.16.2021 17:12	
Toluene	<0.00200	0.100	0.0915	92	0.101	101	70-130	10	35	mg/kg	03.16.2021 17:12	
Ethylbenzene	<0.00200	0.100	0.0993	99	0.108	108	70-130	8	35	mg/kg	03.16.2021 17:12	
m,p-Xylenes	<0.00400	0.200	0.204	102	0.224	112	70-130	9	35	mg/kg	03.16.2021 17:12	
o-Xylene	<0.00200	0.100	0.105	105	0.111	111	70-130	6	35	mg/kg	03.16.2021 17:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		114		126		70-130	%	03.16.2021 17:12
4-Bromofluorobenzene	62	**	96		104		70-130	%	03.16.2021 17:12

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



Larson and Associates, Inc.

SD SWD 13

Analytical Method: BTEX by EPA 8021B

Seq Number: 3154070

Matrix: Solid

Prep Method: SW5035A

Date Prep: 03.16.2021

MB Sample Id: 7723460-1-BLK

LCS Sample Id: 7723460-1-BKS

LCSD Sample Id: 7723460-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0910	91	0.0983	98	70-130	8	35	mg/kg	03.17.2021 06:45	
Toluene	<0.00200	0.100	0.0909	91	0.0964	96	70-130	6	35	mg/kg	03.17.2021 06:45	
Ethylbenzene	<0.00200	0.100	0.0895	90	0.0939	94	70-130	5	35	mg/kg	03.17.2021 06:45	
m,p-Xylenes	<0.00400	0.200	0.183	92	0.192	96	70-130	5	35	mg/kg	03.17.2021 06:45	
o-Xylene	<0.00200	0.100	0.0921	92	0.0962	96	70-130	4	35	mg/kg	03.17.2021 06:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		107		105		70-130	%	03.17.2021 06:45
4-Bromofluorobenzene	70		87		86		70-130	%	03.17.2021 06:45

Analytical Method: BTEX by EPA 8021B

Seq Number: 3153889

Matrix: Soil

Prep Method: SW5035A

Date Prep: 03.16.2021

Parent Sample Id: 691386-037

MS Sample Id: 691386-037 S

MSD Sample Id: 691386-037 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0915	91	0.0795	79	70-130	14	35	mg/kg	03.16.2021 18:02	
Toluene	<0.00202	0.101	0.0750	74	0.0716	71	70-130	5	35	mg/kg	03.16.2021 18:02	
Ethylbenzene	<0.00202	0.101	0.0758	75	0.0721	71	70-130	5	35	mg/kg	03.16.2021 18:02	
m,p-Xylenes	<0.00404	0.202	0.164	81	0.157	78	70-130	4	35	mg/kg	03.16.2021 18:02	
o-Xylene	<0.00202	0.101	0.0817	81	0.0776	77	70-130	5	35	mg/kg	03.16.2021 18:02	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		111		70-130	%	03.16.2021 18:02
4-Bromofluorobenzene	100		101		70-130	%	03.16.2021 18:02

Analytical Method: BTEX by EPA 8021B

Seq Number: 3154070

Matrix: Soil

Prep Method: SW5035A

Date Prep: 03.16.2021

Parent Sample Id: 691113-007

MS Sample Id: 691113-007 S

MSD Sample Id: 691113-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0863	87	0.0832	83	70-130	4	35	mg/kg	03.17.2021 07:38	
Toluene	<0.00199	0.0994	0.0835	84	0.0792	79	70-130	5	35	mg/kg	03.17.2021 07:38	
Ethylbenzene	<0.00199	0.0994	0.0802	81	0.0746	75	70-130	7	35	mg/kg	03.17.2021 07:38	
m,p-Xylenes	<0.00398	0.199	0.163	82	0.152	76	70-130	7	35	mg/kg	03.17.2021 07:38	
o-Xylene	<0.00199	0.0994	0.0804	81	0.0744	75	70-130	8	35	mg/kg	03.17.2021 07:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		103		70-130	%	03.17.2021 07:38
4-Bromofluorobenzene	95		87		70-130	%	03.17.2021 07:38

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec

Varson & Associates, Inc.
Environmental Consultants

DATE: 3/10/21 PAGE 1 OF 1
PO#: _____ LAB WORK ORDER#: _____
PROJECT LOCATION OR NAME: SD SWD 13
LAI PROJECT #: 21-0100 - 03 COLLECTOR: JT + MB

PAGE 1 OF 1

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10

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691113

CHAIN-OF-CUSTODY

TRRP report? ☐ Yes ☒ No		S=SOIL W=WATER A=AIR		P=PAINT SL=SLUDGE OT=OTHER	
TIME ZONE: Time zone/State: MST					
Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers
5-10 1'		3/17/04	1008	S	1
5-3 1'			1014		
5-3 3			1016		
5-3 5'			1018		
5-3 10'			1020		
5-7 1'			1044		
5-7 3'			1046		
5-7 5'			1048		
5-7 10'			1050		
5-8 1'			1034		
5-8 3'			1036		
5-8 5'			1038		
5-8 10'			1040		
TOTAL 13					
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
LABORATORY: Xcel		DATE/TIME		RECEIVED BY: (Signature)	
TURN AROUND TIME NORMAL ☒ 1 DAY ☐ 2 DAY ☐ OTHER ☐					
LABORATORY USE ONLY: RECEIVING TEMP: 20/3.4 THERM#: 128 CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED ☐ CARRIER BILL # ☐ HAND DELIVERED					
PRESERVATION HCl HNO ₃ H ₂ SO ₄ ☐ NaOH ☐ ICE UNPRESERVED					
ANALYSES BTEX+MTBE ☐ TPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ GASOLINE MOD 8015 ☐ DIESEL - MOD 8015 ☐ OIL - MOD 8015 ☐ VOC 8280 ☐ SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ TCLP - METALS (RCRA) ☐ TCLP VOC ☐ 8082 PCBS ☐ TCLP - METALS (RCRA) ☐ TCLP VOC ☐ TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ TOTAL METALS (RCRA) ☐ OTHER LIST ☐ LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ RCI ☐ TOX ☐ FLASHPOINT ☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ PH ☐ HEXAVALENT CHROMIUM ☐ EXPLOSIVES ☐ PENTACHLORATE ☐ CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐					
FIELD NOTES					

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 03.10.2021 08.21.00 AM**Work Order #:** 691113**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 03.10.2021

Checklist reviewed by:

Holly Taylor

Date: 03.15.2021

Appendix E
Photographs

Tracking Number: nAPP2036347592
Delineation Report and Remediation Plan
Chevron USA, Inc., Salado Draw 13 SWD Corridor Line
Produced Water Release
April 26, 2021

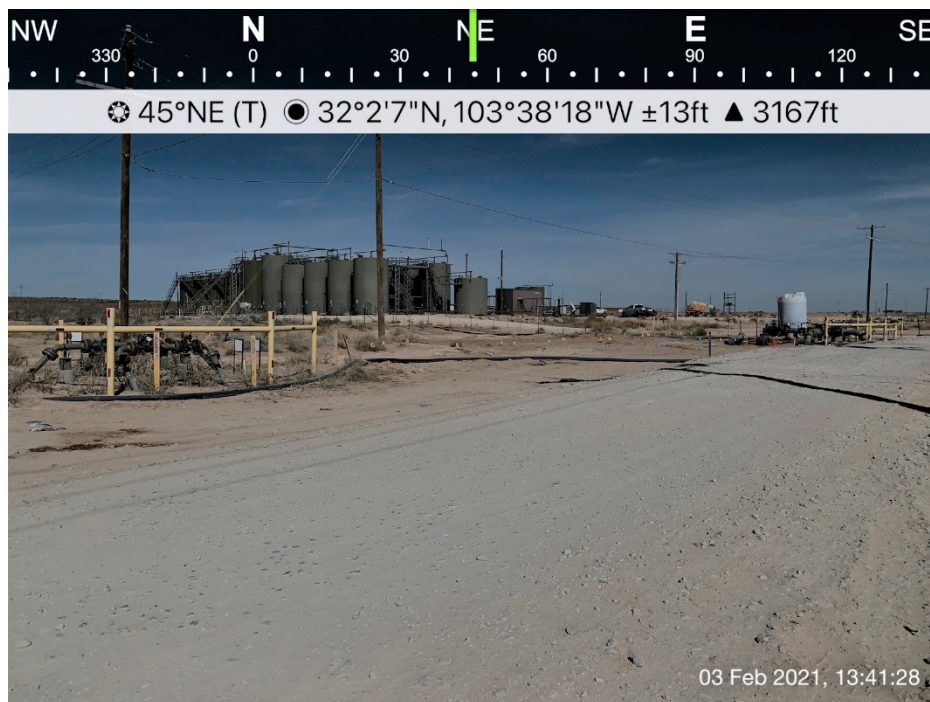


Impacted area viewing West, February 3, 2021



Impacted area viewing Northwest, February 3, 2021

Tracking Number: nAPP2036347592
Delineation Report and Remediation Plan
Chevron USA, Inc., Salado Draw 13 SWD Corridor Line
Produced Water Release
April 26, 2021



Impacted area viewing Northwest, February 3, 2021



Impacted area viewing East, February 3, 2021

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 27025

CONDITIONS

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 27025
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
chensley	None	7/30/2021