

Incident ID	nRM1935746562
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?	86.36 (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

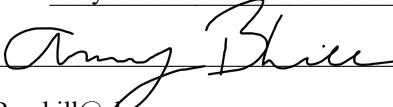
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, 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: 2-11-2021
email: ABarnhill@chevron.com Telephone: 432-687-7108

OCD Only

Received by: _____ Date: _____

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Remediation Plan

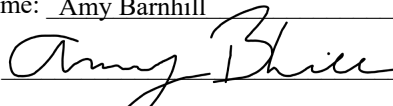
Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☒ 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: 2-11-2021
email: ABarnhill@chevron.com Telephone: 432-687-7108

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

Tracking Number: nRM1935746562
Delineation Report and Remediation Plan
SD EA 29 31 Fed Com P10 #018H
Produced Water Release
Lea County, New Mexico

Latitude: N 32.021488°
Longitude: W -103.594331°

LAI Project No. 19-0180-09

January 21, 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



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



Robert Nelson
Sr. Geoscientist

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Tracking Numbers: nRM1935746562
Delineation Report and Remediation Plan
SD EA 29 31 Fed Com P10 #018H
Lea County, New Mexico
January 21, 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 produced water and crude oil releases at the Salado Draw Pad #10 Well 18H (Site) located in Unit B (NW/4, NE/4), Section 29, Township 26 South, Range 33 East, in Lea County, New Mexico. The geodetic position is North 32.021488° and West -103.594331°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

On October 23, 2019, a produced water release was discovered at the Well 18H location and resulted from wireline pump down water supply manifold when the hose was removed from the fitting and adjacent hose on manifold siphoned water from frac tank. Chevron reported approximately 15.55 barrels (bbls) of produced water was released. Approximately 8 bbls of fluid was recovered. The affected area measures approximately 3,335 square feet. Chevron submitted the initial C-141 to the OCD District I. The release was assigned incident number nRM1935746562. Appendix A presents the initial C-141 and Chevron spill documentation.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,246 feet above mean sea level (msl).
- The surface topography gradually slopes 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 / Pyote soils and dune land", consisting of 30 inches of fine sand, underlain by 30 inches of fine sandy loam in descending order.
- The surface geology consists of the Quaternary-age sand and silt deposited in sheets that locally includes cover sand (USGS).
- Groundwater occurs at a depth of approximately 86.36 feet below ground surface (bgs) based on a depth to groundwater measurement take 72 hours after drilling a groundwater bore (GWB-1) to approximately 115 feet bgs on November 30, 2020.

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

1.3 Remediation Levels

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 10,000 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 Numbers: nRM1935746562
Delineation Report and Remediation Plan
SD EA 29 31 Fed Com P10 #018H
Lea County, New Mexico
January 21, 2021

2.0 DELINEATION

On October 21, 2019 and July 17, 2020, LAI personnel used a stainless-steel hand auger to collect soil samples from seven (7) locations inside the spill (S-1 through S-7) and in each cardinal direction of the spill (North, South, East, and West). The horizontal delineation soil sample collected at the Well 20H release (S-6) was additionally used as the horizontal (East) delineation sample for this release. The samples were collected between approximately 0 to 1-foot bgs depending on subsurface conditions. The soil samples were delivered under chain of custody and preservation to Permian Basin Environmental Laboratories (PBEL) and Xenco Laboratories (Xenco) in Midland, Texas, and were analyzed 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. Figure 2 presents an aerial map showing the sample locations.

Benzene, BTEX, and TPH were below the analytical method reporting limit (RL) and OCD delineation 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 (mg/Kg)
S-1	0 - 1	18,500
S-2	0 - 1	5,160
S-3	0 - 1	5,280

On August 4, 2020, LAI personnel used a Geoprobe® 7822DT direct push rig to vertically delineate the release at sample locations S-1 through S-3 and horizontally at two (2) locations (S-8 and S-9). Soil samples were collected at approximately one (1), three (3), five (5), and ten (10) feet bgs, depending on subsurface conditions. The samples were analyzed for BTEX, TPH, and chloride. Laboratory analysis indicated two (2) sample locations (S-3 and S-8) remained above the OCD delineation level for chloride (600 mg/Kg).

On November 30, 2020, Scarborough Drilling Inc., (SDI) under supervision from LAI further delineated S-3 and S-8 within the well 18H release. Soil Samples were collected every five (5) feet to a depth of approximately twenty (20) 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 between 50 and 100 feet bgs.

3.0 REMEDIATION PLAN

Chevron proposes the following remedial actions:

- Excavate soil from an area measuring approximately 787 square feet, encompassing S-8 to approximately 0.5 feet bgs.
- Excavate soil from an area measuring approximately 4,326 square feet, encompassing S-3, S-9, S-10 to approximately 1-foot bgs.
- Excavate soil from an area measuring approximately 1,204 square feet, encompassing S-1 and S-2 to approximately 2 feet bgs.

Tracking Numbers: nRM1935746562
Delineation Report and Remediation Plan
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Lea County, New Mexico
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- Collect five (5) point composite bottom and sidewall confirmation soil samples every 200 square feet of excavation and analyze for BTEX, TPH and chloride.
- Prepare report with photographs for submittal to OCD District I

Figure 3 presents the proposed excavation areas.

Tables

Table 1
Delineation Soil Sample Analytical Data Summary
Chevron USA, SD Pad 10 Well 18H
Lea County, New Mexico
North 32.021488° West -103.594331°

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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				2,500	10,000 / 600
S-1	0 - 1	10/21/2019	In-Situ	<0.00108	<0.00647	<26.9	<26.9	<26.9	<26.9	18,500
	1	8/4/2020	In-Situ	<0.00199	<0.00199	<50.0	104	<50.0	104	1,800
	3	8/4/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	406
	5	8/4/2020	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	200
S-2	0 - 1	10/21/2019	In-Situ	<0.00108	<0.00647	<26.9	<26.9	<26.9	<26.9	5,160
	1	8/4/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	722
	3	8/4/2020	In-Situ	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	485
	5	8/4/2020	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	45.4
S-3	0 - 1	10/21/2019	In-Situ	<0.00109	<0.00653	<27.2	<27.2	<27.2	<27.2	5,280
	1	8/4/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	22.2
	3	8/4/2020	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	69.8
	5	8/4/2020	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	1,880
	5	11/30/2020	In-Situ	--	--	--	--	--	--	255
	10	11/30/2020	In-Situ	--	--	--	--	--	--	121
	15	11/30/2020	In-Situ	--	--	--	--	--	--	128
	20	11/30/2020	In-Situ	--	--	--	--	--	--	136
S-4	0 - 1	10/21/2019	In-Situ	<0.00105	<0.00631	<26.3	<26.3	<26.3	<26.3	484
S-5	0 - 1	10/21/2019	In-Situ	<0.00106	<0.00637	<26.6	<26.6	<26.6	<26.6	384
S-6	0 - 1	10/21/2019	In-Situ	<0.00106	<0.00637	<26.6	<26.6	<26.6	<26.6	382

Table 1
Delineation Soil Sample Analytical Data Summary
Chevron USA, SD Pad 10 Well 18H
Lea County, New Mexico
North 32.021488° West -103.594331°

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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				2,500	10,000 / 600
S-7	0 - 1	10/21/2019	In-Situ	<0.00104	<0.00624	<26.0	<26.0	<26.0	<26.0	525
S-8	1	8/4/2020	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	30.3
	3	8/4/2020	In-Situ	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	81.7
	5	8/4/2020	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	754
	5	11/30/2020	In-Situ	--	--	--	--	--	--	60.9
	10	11/30/2020	In-Situ	--	--	--	--	--	--	148
	15	11/30/2020	In-Situ	--	--	--	--	--	--	172
	20	11/30/2020	In-Situ	--	--	--	--	--	--	125
S-9	1	8/4/2020	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	121
	3	8/4/2020	In-Situ	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	205
	5	8/4/2020	In-Situ	<0.00199	<0.00199	<50.0	82.5	<50.0	82.5	1,650
	7	8/4/2020	In-Situ	--	--	--	--	--	--	104
S-10	0.5	11/24/2020	In-Situ	<0.00201	<0.00201	<49.9	94.8	<49.8	94.8	203
	1	11/24/2020	In-Situ	<0.00201	<0.00201	<49.8	101	<49.8	101	335
	1.5	12/17/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	16.8
S-11	0.5	12/17/2020	In-Situ	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	12.5
S-6 (Well 20H)	0 - 1	7/17/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	11.1

Notes: Analysis performed by Permian Basin Environmental Laboratory (PBEL) and Xenco Laboratories (Xenco) in Midland, Texas by

EPA SW-846 Methods 8021B (BTEX), 8015M (TPH), and M300 (chloride)

Depth in feet below ground surface (bgs)

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

Table 1
Delineation Soil Sample Analytical Data Summary
Chevron USA, SD Pad 10 Well 18H
Lea County, New Mexico
North 32.021488° West -103.594331°

Page 3 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				2,500	10,000 / 600

<: denotes concentration less than analytical method reporting limit

Bold and Highlighted exceeds OCD remediation levels

Figures

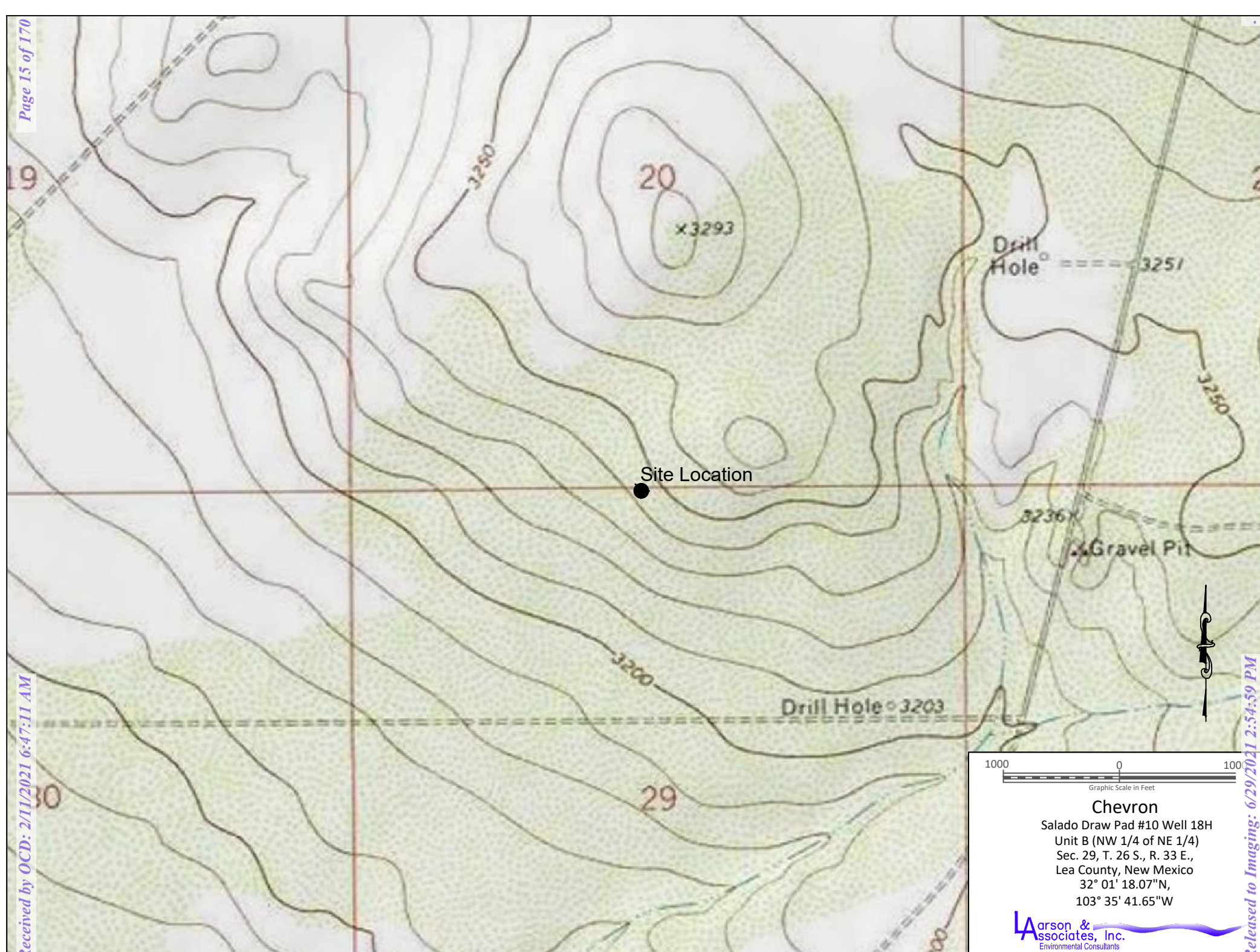
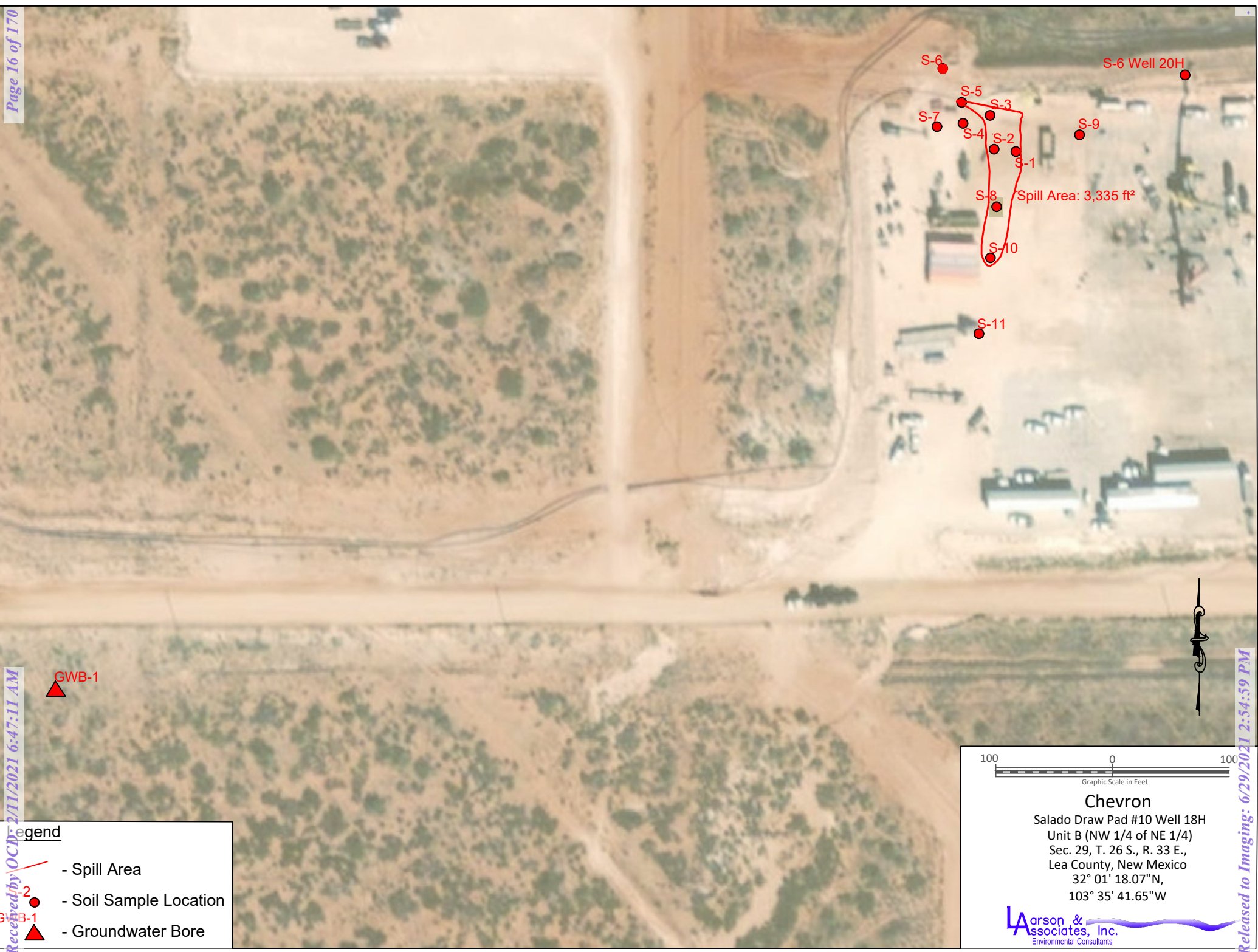


Figure 1 - Topographic Map

Chevron
Salado Draw Pad #10 Well 18H
Unit B (NW 1/4 of NE 1/4)
Sec. 29, T. 26 S., R. 33 E.,
Lea County, New Mexico
32° 01' 18.07"N,
103° 35' 41.65"W

Larson & Associates, Inc.
Environmental Consultants

Figure 2 - Aerial Map



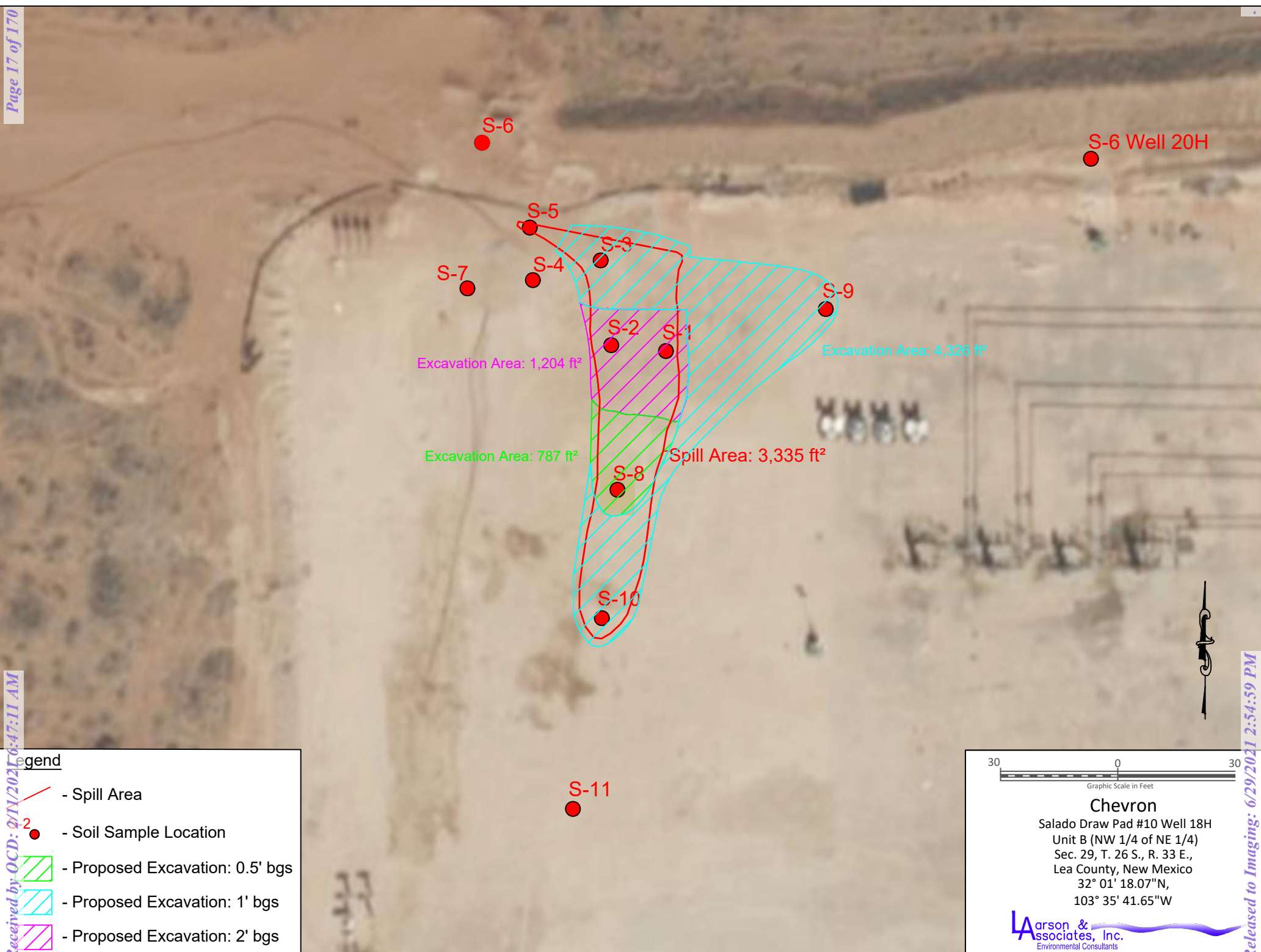


Figure 3 - Aerial Map Showing Proposed Excavation Locations



Salado Draw Pad #10

Salado 29 26 33

GWB-1

Legend

 - Groundwater Bore

130 0 130
Graphic Scale in Feet

Chevron
Salado 29 26 33
Unit C (NE 1/4 of NW 1/4)
Sec. 29, T. 26 S., R. 33 E.
Lea County, New Mexico
32° 01' 14.53"N,
103° 35' 53.79"W

Larson & Associates, Inc.
Environmental Consultants

Figure 4 - Aerial Map Showing Salado Draw Pad #10

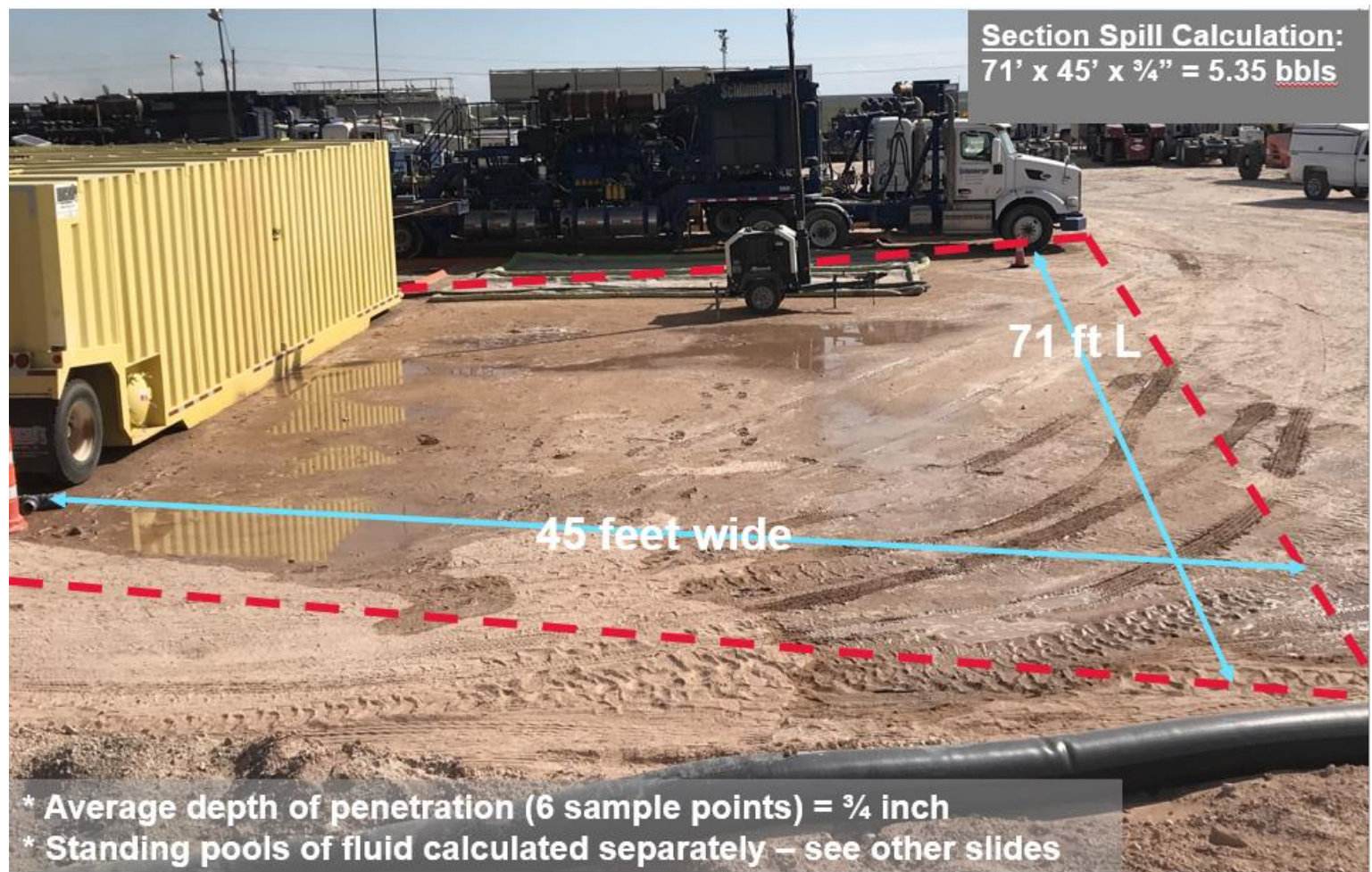
Appendix A
Chevron Spill Calculation

Incident ID	
District RP	
Facility ID	
Application ID	

Directions to Spill Site:

From Highway 1 (Orla Road), head east on Battle Axe Road for approximately 6.8 miles to the entrance of the Salado Draw development on the left. Turn into the development and drive 0.2 miles to Pad 11 and reclaimed frac pond on your right; for Pad 10, take the right immediately before Pad 11/reclaimed frac pond and follow the road for 0.6 miles to the pad on your left

Pictures and Calculations:



Incident ID	
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Application ID	



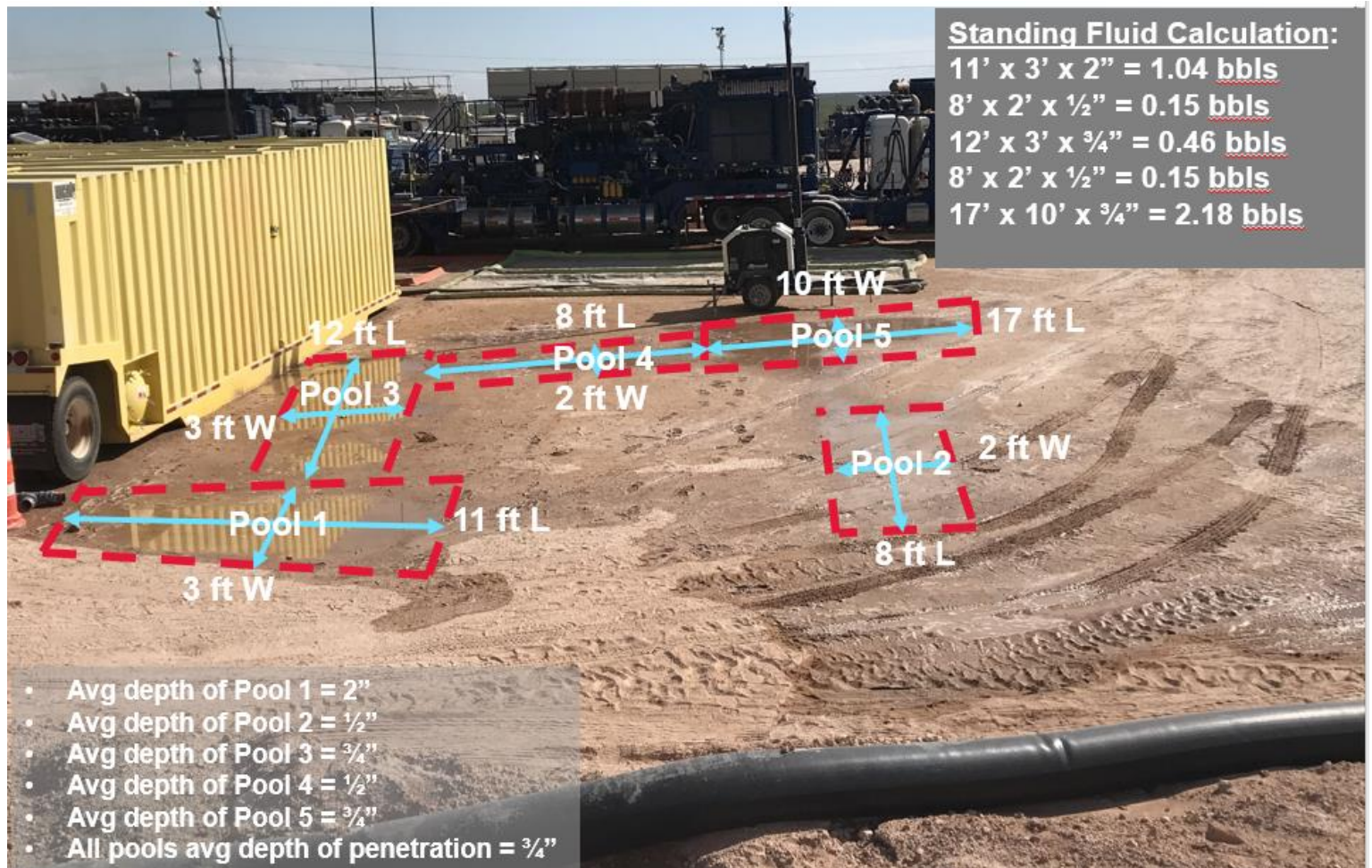
Incident ID	
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Appendix B

Boring Log

BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 12:15 Finish: 2:30 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING										SAMPLE			REMARKS	
					PPM X _____										NUMBER	PID READING	RECOVERY	DEPTH	BACKGROUND PID READING
					2	4	6	8	10	12	14	16	18						
	0	Sand, 2.5YR 5/8, Red, Well Sorted, Subrounded, Medium Fine Grained Quartz Sand	SW															1	
	5																	5	
	10	Caliche, 7.5YR 8/3, Pink																10	
	15																	15	
	20	Sand, 5YR 7/6, Reddish Yellow, Moderately Sorted, Subrounded, Fine Grained Quartz Sand with 10-20mm Clasts	SW															20	
	25																	25	
	30	5YR 5/8, Yellowish Red, Moderately Sorted, Subrounded, Moderate Grained Quartz Sand with 5-10mm Clasts	SW															30	
	35																	35	
	40	5YR 6/6, Reddish Yellow, Poorly Sorted, Subrounded, Fine Grained Quartz Sand with 3-10mm Clasts	SW															40	
	45																	45	
	50	2.5YR 4/8, Red, Well Sorted Rounded, Fine Grained Quartz Sand	SW															50	
	55																	55	
	60																	60	
	65																	65	

☐ 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/ 20-0107-08HOLE DIAMETER : 5"LOCATION : Salado Draw 29 26 33LAI GEOLOGIST : D. St. GermainDRILLING CONTRACTOR : SDIDRILLING METHOD : Air Rotary

DRILL DATE :
11/30/2020BORING NUMBER :
GWB-1

BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 12:15 Finish: 2:30 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING										SAMPLE		REMARKS		
					PPM X _____										NUMBER	PID READING	RECOVERY	DEPTH	BACKGROUND PID READING
					2	4	6	8	10	12	14	16	18						
	70																		
	75		SW															75	
	80																	80	
	85																	85	
	90	Sand, 5YR 4/6, Yellowish Red, Moderately Sorted, Subrounded, Medium Grained Quartz Sand with 1-3mm Clasts																90	
	95																	95	
	100	7.5YR 5/8, Strong Brown, Moderately Sorted, Subrounded, Fine to Medium Grained Quartz Sand	SW															100	
	105	5YR 4/6, Yellowish Red, Moderately Sorted, Subrounded, Medium Grained Quartz Sand with 1-5mm Clasts																105	
	110																	110	
	115	TD: 115'																115	
	120																	120	

 Groundwater at 86.30'

☐ ONE CONTINUOUS AUGER SAMPLER
☐ STANDARD PENETRATION TEST
☐ UNDISTURBED SAMPLE
☐ WATER TABLE (24 HRS)

 WATER TABLE (TIME OF BORING)
 LABORATORY TEST LOCATION
 PENETROMETER (TONS/ SQ. FT)
 NO RECOVERY



DRILL DATE : 11/30/2020
BORING NUMBER : GWB-1

JOB NUMBER : Chevron/ 20-0107-08
HOLE DIAMETER : 5"
LOCATION : Salado Draw 29 26 33
LAI GEOLOGIST : D. St. Germain
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Appendix C

Karst Risk Potential



Browser

★ Favorites

▶ Spatial Bookmarks

▶ Project Home

▶ Home

▶ C:\

▶ D:\

▶ L:\

▶ Z:\

▶ GeoPackage

▶ Spatialite

▶ PostGIS

▶ MSSQL

▶ Oracle

▶ DB2

▶ WMS/WMTS

▶ XYZ Tiles

▶ WCS

▶ WFS / OGC API - Features

▶ OWS

▶ ArcGisMapServer

▶ ArcGisFeatureServer

▶ GeoNode

Layers

☒ Added geom info

☒ carlsbad_west

☒ Karst_or_No_Karst

- ☒ High
- ☒ Low
- ☒ Medium

☒ Bing Satellite



Appendix D
Laboratory Reports

**PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701**



Analytical Report

Prepared for:

Mark Larson
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: Chevron-Salado Draw Pad #10

Project Number: 19-0180-02

Location: NM

Lab Order Number: 9J23002



NELAP/TCEQ # T104704516-17-8

Report Date: 10/30/19

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-1 @ (0-1')	9J23002-01	Soil	10/21/19 12:00	10-23-2019 08:33
S-2 @ (0-1')	9J23002-02	Soil	10/21/19 12:02	10-23-2019 08:33
S-3 @ (0-1')	9J23002-03	Soil	10/21/19 12:11	10-23-2019 08:33
S-4 @ (0-1')	9J23002-04	Soil	10/21/19 12:15	10-23-2019 08:33
S-5 @ (0-1')	9J23002-05	Soil	10/21/19 12:20	10-23-2019 08:33
S-6 @ (0-1')	9J23002-06	Soil	10/21/19 12:21	10-23-2019 08:33
S-7 @ (0-1')	9J23002-07	Soil	10/21/19 12:22	10-23-2019 08:33

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

S-1 @ (0-1')
9J23002-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00215	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		98.0 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		96.9 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	18500	53.8	mg/kg dry	50	P9J2807	10/28/19	10/30/19	EPA 300.0	
% Moisture	7.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.9	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		127 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		133 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

S-2 @ (0-1')
9J23002-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00215	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00108	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		97.4 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		96.8 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	5160	26.9	mg/kg dry	25	P9J2807	10/28/19	10/30/19	EPA 300.0	
% Moisture	7.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.9	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		128 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		134 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

S-3 @ (0-1')
9J23002-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00217	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		94.8 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		94.3 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	5280	27.2	mg/kg dry	25	P9J2807	10/28/19	10/30/19	EPA 300.0	
% Moisture	8.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		122 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		128 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

S-4 @ (0-1')
9J23002-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00105	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Toluene	ND	0.00105	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Ethylbenzene	ND	0.00105	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (p/m)	ND	0.00211	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Xylene (o)	ND	0.00105	mg/kg dry	1	P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		94.7 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		98.3 %	75-125		P9J2303	10/23/19	10/23/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	484	1.05	mg/kg dry	1	P9J2807	10/28/19	10/30/19	EPA 300.0	
% Moisture	5.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.3	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		127 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		136 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

S-5 @ (0-1')
9J23002-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		106 %	75-125		P9J2402	10/24/19	10/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		92.2 %	75-125		P9J2402	10/24/19	10/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	384	1.06	mg/kg dry	1	P9J2807	10/28/19	10/30/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		127 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		136 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

S-6 @ (0-1')
9J23002-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Toluene	ND	0.00106	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		104 %	75-125		P9J2402	10/24/19	10/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		104 %	75-125		P9J2402	10/24/19	10/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	382	1.06	mg/kg dry	1	P9J2807	10/28/19	10/30/19	EPA 300.0	
% Moisture	6.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		113 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		121 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

S-7 @ (0-1')
9J23002-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Toluene	ND	0.00104	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Ethylbenzene	ND	0.00104	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Xylene (p/m)	ND	0.00208	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P9J2402	10/24/19	10/24/19	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		88.1 %	75-125		P9J2402	10/24/19	10/24/19	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		98.9 %	75-125		P9J2402	10/24/19	10/24/19	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	525	1.04	mg/kg dry	1	P9J2807	10/28/19	10/30/19	EPA 300.0	
% Moisture	4.0	0.1	%	1	P9J2403	10/24/19	10/24/19	ASTM D2216	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: 1-Chlorooctane		120 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Surrogate: o-Terphenyl		125 %	70-130		P9J2310	10/23/19	10/25/19	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	10/23/19	10/25/19	calc	

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P9J2303 - General Preparation (GC)

Blank (P9J2303-BLK1)

Prepared & Analyzed: 10/23/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.119		"	0.120		99.0	75-125			
Surrogate: 1,4-Difluorobenzene	0.114		"	0.120		94.8	75-125			

LCS (P9J2303-BS1)

Prepared & Analyzed: 10/23/19

Benzene	0.0860	0.00100	mg/kg wet	0.100		86.0	70-130			
Toluene	0.104	0.00100	"	0.100		104	70-130			
Ethylbenzene	0.102	0.00100	"	0.100		102	70-130			
Xylene (p/m)	0.202	0.00200	"	0.200		101	70-130			
Xylene (o)	0.103	0.00100	"	0.100		103	70-130			
Surrogate: 1,4-Difluorobenzene	0.138		"	0.120		115	75-125			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		109	75-125			

LCS Dup (P9J2303-BSD1)

Prepared & Analyzed: 10/23/19

Benzene	0.0938	0.00100	mg/kg wet	0.100		93.8	70-130	8.65	20	
Toluene	0.102	0.00100	"	0.100		102	70-130	1.57	20	
Ethylbenzene	0.104	0.00100	"	0.100		104	70-130	2.46	20	
Xylene (p/m)	0.207	0.00200	"	0.200		104	70-130	2.35	20	
Xylene (o)	0.111	0.00100	"	0.100		111	70-130	7.83	20	
Surrogate: 1,4-Difluorobenzene	0.136		"	0.120		113	75-125			
Surrogate: 4-Bromofluorobenzene	0.120		"	0.120		100	75-125			

Calibration Blank (P9J2303-CCB1)

Prepared & Analyzed: 10/23/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.120		"	0.120		99.8	75-125			
Surrogate: 1,4-Difluorobenzene	0.111		"	0.120		92.6	75-125			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P9J2303 - General Preparation (GC)

Calibration Blank (P9J2303-CCB2)

Prepared & Analyzed: 10/23/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.124		"	0.120		103	75-125			
Surrogate: 4-Bromofluorobenzene	0.116		"	0.120		96.5	75-125			

Calibration Blank (P9J2303-CCB3)

Prepared & Analyzed: 10/23/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.111		"	0.120		92.6	75-125			
Surrogate: 4-Bromofluorobenzene	0.120		"	0.120		99.8	75-125			

Calibration Check (P9J2303-CCV1)

Prepared & Analyzed: 10/23/19

Benzene	0.0900	0.00100	mg/kg wet	0.100		90.0	80-120			
Toluene	0.0974	0.00100	"	0.100		97.4	80-120			
Ethylbenzene	0.105	0.00100	"	0.100		105	80-120			
Xylene (p/m)	0.193	0.00200	"	0.200		96.3	80-120			
Xylene (o)	0.107	0.00100	"	0.100		107	80-120			
Surrogate: 1,4-Difluorobenzene	0.130		"	0.120		109	75-125			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		110	75-125			

Calibration Check (P9J2303-CCV2)

Prepared & Analyzed: 10/23/19

Benzene	0.0970	0.00100	mg/kg wet	0.100		97.0	80-120			
Toluene	0.102	0.00100	"	0.100		102	80-120			
Ethylbenzene	0.113	0.00100	"	0.100		113	80-120			
Xylene (p/m)	0.202	0.00200	"	0.200		101	80-120			
Xylene (o)	0.111	0.00100	"	0.100		111	80-120			
Surrogate: 4-Bromofluorobenzene	0.133		"	0.120		110	75-125			
Surrogate: 1,4-Difluorobenzene	0.136		"	0.120		113	75-125			

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P9J2303 - General Preparation (GC)

Calibration Check (P9J2303-CCV3)

Prepared & Analyzed: 10/23/19

Benzene	0.0900	0.00100	mg/kg wet	0.100		90.0	80-120			
Toluene	0.0974	0.00100	"	0.100		97.4	80-120			
Ethylbenzene	0.105	0.00100	"	0.100		105	80-120			
Xylene (p/m)	0.193	0.00200	"	0.200		96.3	80-120			
Xylene (o)	0.107	0.00100	"	0.100		107	80-120			
Surrogate: 4-Bromofluorobenzene	0.131		"	0.120		110	75-125			
Surrogate: 1,4-Difluorobenzene	0.130		"	0.120		109	75-125			

Matrix Spike (P9J2303-MS1)

Source: 9J22005-01

Prepared & Analyzed: 10/23/19

Benzene	0.0552	0.00103	mg/kg dry	0.103	ND	53.6	80-120			QM-05
Toluene	0.0643	0.00103	"	0.103	ND	62.4	80-120			QM-05
Ethylbenzene	0.0835	0.00103	"	0.103	ND	81.0	80-120			
Xylene (p/m)	0.125	0.00206	"	0.206	ND	60.5	80-120			QM-05
Xylene (o)	0.0600	0.00103	"	0.103	ND	58.2	80-120			QM-05
Surrogate: 1,4-Difluorobenzene	0.146		"	0.124		118	75-125			
Surrogate: 4-Bromofluorobenzene	0.136		"	0.124		110	75-125			

Matrix Spike Dup (P9J2303-MSD1)

Source: 9J22005-01

Prepared & Analyzed: 10/23/19

Benzene	0.0498	0.00103	mg/kg dry	0.103	ND	48.3	80-120	10.4	20	QM-05
Toluene	0.0539	0.00103	"	0.103	ND	52.3	80-120	17.7	20	QM-05
Ethylbenzene	0.0667	0.00103	"	0.103	ND	64.7	80-120	22.4	20	QM-05
Xylene (p/m)	0.103	0.00206	"	0.206	ND	49.8	80-120	19.4	20	QM-05
Xylene (o)	0.0469	0.00103	"	0.103	ND	45.4	80-120	24.6	20	QM-05
Surrogate: 1,4-Difluorobenzene	0.145		"	0.124		117	75-125			
Surrogate: 4-Bromofluorobenzene	0.125		"	0.124		101	75-125			

Batch P9J2402 - General Preparation (GC)

Blank (P9J2402-BLK1)

Prepared & Analyzed: 10/24/19

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.143		"	0.120		119	75-125			
Surrogate: 1,4-Difluorobenzene	0.117		"	0.120		97.6	75-125			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P9J2402 - General Preparation (GC)

LCS (P9J2402-BS1)		Prepared & Analyzed: 10/24/19								
Benzene	0.0970	0.00100	mg/kg wet	0.100		97.0	70-130			
Toluene	0.103	0.00100	"	0.100		103	70-130			
Ethylbenzene	0.109	0.00100	"	0.100		109	70-130			
Xylene (p/m)	0.212	0.00200	"	0.200		106	70-130			
Xylene (o)	0.0976	0.00100	"	0.100		97.6	70-130			
Surrogate: 1,4-Difluorobenzene	0.133		"	0.120		110	75-125			
Surrogate: 4-Bromofluorobenzene	0.124		"	0.120		103	75-125			

LCS Dup (P9J2402-BSD1)		Prepared & Analyzed: 10/24/19								
Benzene	0.0906	0.00100	mg/kg wet	0.100		90.6	70-130	6.81	20	
Toluene	0.109	0.00100	"	0.100		109	70-130	5.54	20	
Ethylbenzene	0.102	0.00100	"	0.100		102	70-130	6.09	20	
Xylene (p/m)	0.199	0.00200	"	0.200		99.6	70-130	6.15	20	
Xylene (o)	0.101	0.00100	"	0.100		101	70-130	2.95	20	
Surrogate: 4-Bromofluorobenzene	0.136		"	0.120		113	75-125			
Surrogate: 1,4-Difluorobenzene	0.130		"	0.120		108	75-125			

Calibration Blank (P9J2402-CCB1)		Prepared & Analyzed: 10/24/19								
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.122		"	0.120		102	75-125			
Surrogate: 1,4-Difluorobenzene	0.117		"	0.120		97.3	75-125			

Calibration Blank (P9J2402-CCB2)		Prepared & Analyzed: 10/24/19								
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	0.123		"	0.120		103	75-125			
Surrogate: 4-Bromofluorobenzene	0.121		"	0.120		101	75-125			

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P9J2402 - General Preparation (GC)

Calibration Blank (P9J2402-CCB3)

Prepared & Analyzed: 10/24/19

Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	0.110		"	0.120		91.3	75-125			
Surrogate: 1,4-Difluorobenzene	0.123		"	0.120		103	75-125			

Calibration Check (P9J2402-CCV1)

Prepared & Analyzed: 10/24/19

Benzene	0.0968	0.00100	mg/kg wet	0.100		96.8	80-120			
Toluene	0.106	0.00100	"	0.100		106	80-120			
Ethylbenzene	0.116	0.00100	"	0.100		116	80-120			
Xylene (p/m)	0.219	0.00200	"	0.200		109	80-120			
Xylene (o)	0.120	0.00100	"	0.100		120	80-120			
Surrogate: 4-Bromofluorobenzene	0.109		"	0.120		90.9	75-125			
Surrogate: 1,4-Difluorobenzene	0.134		"	0.120		112	75-125			

Calibration Check (P9J2402-CCV2)

Prepared & Analyzed: 10/24/19

Benzene	0.0819	0.00100	mg/kg wet	0.100		81.9	80-120			
Toluene	0.0853	0.00100	"	0.100		85.3	80-120			
Ethylbenzene	0.0988	0.00100	"	0.100		98.8	80-120			
Xylene (p/m)	0.161	0.00200	"	0.200		80.6	80-120			
Xylene (o)	0.0845	0.00100	"	0.100		84.5	80-120			
Surrogate: 4-Bromofluorobenzene	0.119		"	0.120		99.0	75-125			
Surrogate: 1,4-Difluorobenzene	0.131		"	0.120		109	75-125			

Calibration Check (P9J2402-CCV3)

Prepared & Analyzed: 10/24/19

Benzene	0.0910	0.00100	mg/kg wet	0.100		91.0	80-120			
Toluene	0.0918	0.00100	"	0.100		91.8	80-120			
Ethylbenzene	0.105	0.00100	"	0.100		105	80-120			
Xylene (p/m)	0.182	0.00200	"	0.200		91.0	80-120			
Xylene (o)	0.104	0.00100	"	0.100		104	80-120			
Surrogate: 4-Bromofluorobenzene	0.111		"	0.120		92.3	75-125			
Surrogate: 1,4-Difluorobenzene	0.138		"	0.120		115	75-125			

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P9J2402 - General Preparation (GC)

Matrix Spike (P9J2402-MS1)		Source: 9J23005-01		Prepared & Analyzed: 10/24/19						
Benzene	0.0494	0.00101	mg/kg dry	0.101	ND	48.9	80-120			QM-05
Toluene	0.0383	0.00101	"	0.101	ND	37.9	80-120			QM-05
Ethylbenzene	0.0313	0.00101	"	0.101	ND	31.0	80-120			QM-05
Xylene (p/m)	0.0457	0.00202	"	0.202	ND	22.6	80-120			QM-05
Xylene (o)	0.0238	0.00101	"	0.101	ND	23.5	80-120			QM-05
Surrogate: 4-Bromofluorobenzene	0.102		"	0.121		84.1	75-125			
Surrogate: 1,4-Difluorobenzene	0.137		"	0.121		113	75-125			

Matrix Spike Dup (P9J2402-MSD1)		Source: 9J23005-01		Prepared & Analyzed: 10/24/19						
Benzene	0.0554	0.00101	mg/kg dry	0.101	ND	54.8	80-120	11.3	20	QM-05
Toluene	0.0488	0.00101	"	0.101	ND	48.3	80-120	24.0	20	QM-05
Ethylbenzene	0.0468	0.00101	"	0.101	ND	46.4	80-120	39.8	20	QM-05
Xylene (p/m)	0.0594	0.00202	"	0.202	ND	29.4	80-120	26.1	20	QM-05
Xylene (o)	0.0307	0.00101	"	0.101	ND	30.4	80-120	25.4	20	QM-05
Surrogate: 1,4-Difluorobenzene	0.138		"	0.121		114	75-125			
Surrogate: 4-Bromofluorobenzene	0.112		"	0.121		92.2	75-125			

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Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P9J2403 - * DEFAULT PREP *****

Blank (P9J2403-BLK1)		Prepared & Analyzed: 10/24/19								
% Moisture	ND	0.1	%							
Duplicate (P9J2403-DUP1)		Source: 9J23001-09		Prepared & Analyzed: 10/24/19						
% Moisture	8.0	0.1	%		8.0			0.00	20	
Duplicate (P9J2403-DUP2)		Source: 9J23006-03		Prepared & Analyzed: 10/24/19						
% Moisture	8.0	0.1	%		8.0			0.00	20	
Duplicate (P9J2403-DUP3)		Source: 9J23006-05		Prepared & Analyzed: 10/24/19						
% Moisture	10.0	0.1	%		9.0			10.5	20	

Batch P9J2807 - * DEFAULT PREP *****

Blank (P9J2807-BLK1)		Prepared: 10/28/19 Analyzed: 10/29/19								
Chloride	ND	0.100	mg/kg wet							
LCS (P9J2807-BS1)		Prepared: 10/28/19 Analyzed: 10/29/19								
Chloride	436	1.00	mg/kg wet	400		109	80-120			
LCS Dup (P9J2807-BSD1)		Prepared: 10/28/19 Analyzed: 10/29/19								
Chloride	442	1.00	mg/kg wet	400		110	80-120	1.25	20	
Calibration Blank (P9J2807-CCB1)		Prepared: 10/28/19 Analyzed: 10/29/19								
Chloride	0.00		mg/kg wet							
Calibration Blank (P9J2807-CCB2)		Prepared: 10/28/19 Analyzed: 10/29/19								
Chloride	0.00		mg/kg wet							

Permian Basin Environmental Lab, L.P.

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P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9J2807 - *** DEFAULT PREP ***										
Calibration Check (P9J2807-CCV1)				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	21.2		mg/kg	20.0		106	0-200			
Calibration Check (P9J2807-CCV2)				Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	20.5		mg/kg	20.0		103	0-200			
Calibration Check (P9J2807-CCV3)				Prepared: 10/28/19 Analyzed: 10/30/19						
Chloride	20.9		mg/kg	20.0		105	0-200			
Matrix Spike (P9J2807-MS1)				Source: 9J22005-04 Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	1190	11.2	mg/kg dry	1120	2.84	105	80-120			
Matrix Spike (P9J2807-MS2)				Source: 9J22005-13 Prepared: 10/28/19 Analyzed: 10/30/19						
Chloride	745	5.38	mg/kg dry	538	223	97.2	80-120			
Matrix Spike Dup (P9J2807-MSD1)				Source: 9J22005-04 Prepared: 10/28/19 Analyzed: 10/29/19						
Chloride	1140	11.2	mg/kg dry	1120	2.84	101	80-120	4.32	20	
Matrix Spike Dup (P9J2807-MSD2)				Source: 9J22005-13 Prepared: 10/28/19 Analyzed: 10/30/19						
Chloride	765	5.38	mg/kg dry	538	223	101	80-120	2.66	20	

Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P9J2310 - TX 1005

Blank (P9J2310-BLK1)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	130		"	100		130	70-130			
Surrogate: o-Terphenyl	66.8		"	50.0		134	70-130			S-GC

LCS (P9J2310-BS1)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	976	25.0	mg/kg wet	1000		97.6	75-125			
>C12-C28	974	25.0	"	1000		97.4	75-125			
Surrogate: 1-Chlorooctane	122		"	100		122	70-130			
Surrogate: o-Terphenyl	61.8		"	50.0		124	70-130			

LCS Dup (P9J2310-BSD1)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	979	25.0	mg/kg wet	1000		97.9	75-125	0.372	20	
>C12-C28	951	25.0	"	1000		95.1	75-125	2.33	20	
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	62.8		"	50.0		126	70-130			

Calibration Blank (P9J2310-CCB1)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	8.74		mg/kg wet							
>C12-C28	7.53		"							
Surrogate: 1-Chlorooctane	116		"	100		116	70-130			
Surrogate: o-Terphenyl	61.7		"	50.0		123	70-130			

Calibration Check (P9J2310-CCV1)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	521	25.0	mg/kg wet	500		104	85-115			
>C12-C28	572	25.0	"	500		114	85-115			
Surrogate: 1-Chlorooctane	120		"	100		120	70-130			
Surrogate: o-Terphenyl	62.0		"	50.0		124	70-130			

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch P9J2310 - TX 1005

Calibration Check (P9J2310-CCV2)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	982	25.0	mg/kg wet	1000		98.2	85-115			
>C12-C28	935	25.0	"	1000		93.5	85-115			
Surrogate: 1-Chlorooctane	115		"	100		115	70-130			
Surrogate: o-Terphenyl	58.4		"	50.0		117	70-130			

Calibration Check (P9J2310-CCV3)

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	529	25.0	mg/kg wet	500		106	85-115			
>C12-C28	500	25.0	"	500		99.9	85-115			
Surrogate: 1-Chlorooctane	121		"	100		121	70-130			
Surrogate: o-Terphenyl	61.0		"	50.0		122	70-130			

Matrix Spike (P9J2310-MS1)

Source: 9J23002-07

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	1000	26.0	mg/kg dry	1040	16.0	94.8	75-125			
>C12-C28	987	26.0	"	1040	11.4	93.7	75-125			
Surrogate: 1-Chlorooctane	115		"	104		111	70-130			
Surrogate: o-Terphenyl	53.8		"	52.1		103	70-130			

Matrix Spike Dup (P9J2310-MSD1)

Source: 9J23002-07

Prepared: 10/23/19 Analyzed: 10/25/19

C6-C12	995	26.0	mg/kg dry	1040	16.0	94.0	75-125	0.864	20	
>C12-C28	999	26.0	"	1040	11.4	94.8	75-125	1.24	20	
Surrogate: 1-Chlorooctane	124		"	104		119	70-130			
Surrogate: o-Terphenyl	54.0		"	52.1		104	70-130			

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Chevron-Salado Draw Pad #10
Project Number: 19-0180-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

ROI Received on Ice

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

BULK Samples received in Bulk soil containers

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

10/30/2019

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.

Project: Chevron-Salado Draw Pad #10

Fax: (432) 687-0456

P.O. Box 50685

Project Number: 19-0180-02

Midland TX, 79710

Project Manager: Mark Larson

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 10/22/2019 PAGE 1 OF 1
PO#: LAB WORK ORDER# 9523002
PROJECT LOCATION OR NAME: Chevron - Salvador Drua Rd #
LAI PROJECT #: 19-080-02 COLLECTOR: KO/EC

CHAIN-OF-CUSTODY

- NO 0752

Page 22 of 22

Received by OCD: 2/11/2021 6:47:11 AM

TRRP report?		S=SOIL W=WATER A=AIR		P=PAINT SL=SLUDGE OT=OTHER		TIME ZONE: Time zone/State:		PRESERVATION		ANALYSES		FIELD NOTES																			
Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO ₃	H ₂ SO ₄ ☐ NaOH ☐	ICE	UNPRESERVED	BTX ☐ MTBE ☐	TPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	Gasoline MOD 8015 ☐	Diesel - MOD 8015 ☐	Oil - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐	8081 PESTICIDES ☐	8082 PCBS ☐	TBLP - METALS (RCRA) ☐	TCLP - PEST ☐	TOTAL METALS (RCRA) ☐	LEAD - TOTAL ☐	RCI ☐	TDS ☐	PH ☐	EXPLOSIVES ☐	CHLORIDE ☐	ANIONS ☐	ALKALINITY ☐	
S-1 (D-1)	1	10/21	12:00	S	1				X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-2 (D-1)	2		12:02																												
S-3 (D-1)	3		12:11																												
S-4 (D-1)	4		12:15																												
S-5 (D-1)	5		12:20																												
S-6 (D-1)	6		12:21																												
S-7 (D-1)	7		12:22																												
TOTAL																															

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:

TURN AROUND TIME

NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 30/40 THERM#:CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL #

HAND DELIVERED

HAND DELIVERED

Certificate of Analysis Summary 669564

Larson and Associates, Inc., Midland, TX

Project Name: Pad 10 18H

Project Id: 19-0180-02

Contact: Mark Larson

Project Location:

Date Received in Lab: Mon 08.10.2020 09:00

Report Date: 08.17.2020 16:12

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	669564-001	669564-002	669564-003	669564-004	669564-005	669564-006
	<i>Field Id:</i>	S-1 1'	S-1 3'	S-1 5'	S-2 1'	S-2 3'	S-2 5'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	08.04.2020 13:14	08.04.2020 13:15	08.04.2020 13:16	08.04.2020 13:33	08.04.2020 13:34	08.04.2020 13:35
BTEX by EPA 8021B	<i>Extracted:</i>	08.11.2020 08:30	08.11.2020 13:30	08.11.2020 13:30	08.11.2020 13:30	08.11.2020 13:30	08.11.2020 15:00
	<i>Analyzed:</i>	08.11.2020 13:45	08.11.2020 14:06	08.11.2020 14:26	08.11.2020 14:47	08.11.2020 16:28	08.11.2020 16:49
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00397 0.00397	<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Chloride by EPA 300	<i>Extracted:</i>	08.10.2020 16:40	08.10.2020 16:40	08.10.2020 16:40	08.10.2020 16:40	08.10.2020 16:40	08.10.2020 16:40
	<i>Analyzed:</i>	08.10.2020 21:48	08.10.2020 22:07	08.10.2020 22:13	08.10.2020 22:32	08.10.2020 22:39	08.10.2020 22:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1800 24.8	406 25.2	200 24.9	722 5.02	485 5.00	45.4 5.00
TPH by SW8015 Mod	<i>Extracted:</i>	08.11.2020 12:00	08.11.2020 12:00	08.11.2020 12:00	08.11.2020 12:00	08.11.2020 12:00	08.11.2020 12:00
	<i>Analyzed:</i>	08.11.2020 12:56	08.11.2020 13:55	08.11.2020 14:14	08.11.2020 14:34	08.11.2020 14:53	08.11.2020 15:13
	<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	<49.9 49.9	<50.0 50.0	<49.8 49.8	<49.9 49.9
Diesel Range Organics (DRO)		104 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<49.9 49.9
Total TPH		104 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<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 669564

Larson and Associates, Inc., Midland, TX

Project Name: Pad 10 18H

Project Id: 19-0180-02

Contact: Mark Larson

Project Location:

Date Received in Lab: Mon 08.10.2020 09:00

Report Date: 08.17.2020 16:12

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	669564-007	669564-008	669564-009	669564-010	669564-011	669564-012
	<i>Field Id:</i>	S-3 1'	S-3 2'	S-3 5'	S-8 1'	S-8 3'	S-8 5'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	08.04.2020 14:21	08.04.2020 14:22	08.04.2020 14:23	08.04.2020 13:43	08.04.2020 13:44	08.04.2020 13:45
BTEX by EPA 8021B	<i>Extracted:</i>	08.11.2020 15:00	08.11.2020 15:00	08.11.2020 15:00	08.11.2020 16:00	08.11.2020 16:00	08.11.2020 16:00
	<i>Analyzed:</i>	08.11.2020 17:09	08.11.2020 17:30	08.11.2020 17:50	08.11.2020 22:57	08.11.2020 23:18	08.11.2020 23:38
	<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	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398	<0.00397 0.00397	<0.00398 0.00398	<0.00401 0.00401	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201
Chloride by EPA 300	<i>Extracted:</i>	08.10.2020 16:40	08.10.2020 16:40	08.10.2020 16:40	08.10.2020 16:40	08.11.2020 10:50	08.11.2020 10:50
	<i>Analyzed:</i>	08.10.2020 22:51	08.10.2020 22:58	08.10.2020 23:04	08.10.2020 23:10	08.11.2020 16:10	08.11.2020 16:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		22.2 5.00	69.8 4.99	1880 24.8	30.3 5.04	81.7 5.02	754 4.96
TPH by SW8015 Mod	<i>Extracted:</i>	08.11.2020 12:00	08.11.2020 12:00	08.11.2020 12:00	08.11.2020 12:00	08.11.2020 12:00	08.11.2020 12:00
	<i>Analyzed:</i>	08.11.2020 15:32	08.11.2020 15:52	08.11.2020 16:11	08.11.2020 16:30	08.11.2020 17:08	08.11.2020 17:27
	<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)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0
Total TPH		<50.0 50.0	<49.9 49.9	<50.0 50.0	<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 669564

Larson and Associates, Inc., Midland, TX

Project Name: Pad 10 18H

Project Id: 19-0180-02

Contact: Mark Larson

Project Location:

Date Received in Lab: Mon 08.10.2020 09:00

Report Date: 08.17.2020 16:12

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	669564-013	669564-014	669564-015	669564-016		
	Field Id:	S-9 1'	S-9 3'	S-9 5'	S-9 7'		
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	08.04.2020 14:01	08.04.2020 14:02	08.04.2020 14:03	08.04.2020 14:15		
BTEX by EPA 8021B	Extracted:	08.11.2020 16:00	08.11.2020 16:00	08.11.2020 16:00			
	Analyzed:	08.11.2020 23:59	08.12.2020 00:19	08.12.2020 00:40			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199			
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199			
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199			
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00398 0.00398			
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199			
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199			
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00199 0.00199			
Chloride by EPA 300	Extracted:	08.11.2020 10:50	08.11.2020 10:50	08.11.2020 10:50	08.11.2020 10:50		
	Analyzed:	08.11.2020 16:35	08.11.2020 16:42	08.11.2020 16:48	08.11.2020 17:07		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		121 4.99	205 5.04	1650 25.0	104 5.00		
TPH by SW8015 Mod	Extracted:	08.11.2020 12:00	08.11.2020 12:00	08.11.2020 12:00			
	Analyzed:	08.11.2020 17:47	08.11.2020 18:06	08.11.2020 18:26			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0			
Diesel Range Organics (DRO)		<49.9 49.9	<49.8 49.8	82.5 50.0			
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0			
Total TPH		<49.9 49.9	<49.8 49.8	82.5 50.0			

BRL - Below Reporting Limit

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



Analytical Report 669564

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Pad 10 18H

19-0180-02

08.17.2020

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-37), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), 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 (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



08.17.2020

Project Manager: **Mark Larson**

Larson and Associates, Inc.

P. O. Box 50685

Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **669564**

Pad 10 18H

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) 669564. 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. 669564 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 669564****Larson and Associates, Inc., Midland, TX**

Pad 10 18H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1 1'	S	08.04.2020 13:14		669564-001
S-1 3'	S	08.04.2020 13:15		669564-002
S-1 5'	S	08.04.2020 13:16		669564-003
S-2 1'	S	08.04.2020 13:33		669564-004
S-2 3'	S	08.04.2020 13:34		669564-005
S-2 5'	S	08.04.2020 13:35		669564-006
S-3 1'	S	08.04.2020 14:21		669564-007
S-3 2'	S	08.04.2020 14:22		669564-008
S-3 5'	S	08.04.2020 14:23		669564-009
S-8 1'	S	08.04.2020 13:43		669564-010
S-8 3'	S	08.04.2020 13:44		669564-011
S-8 5'	S	08.04.2020 13:45		669564-012
S-9 1'	S	08.04.2020 14:01		669564-013
S-9 3'	S	08.04.2020 14:02		669564-014
S-9 5'	S	08.04.2020 14:03		669564-015
S-9 7'	S	08.04.2020 14:15		669564-016



CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: Pad 10 18H

Project ID: 19-0180-02
Work Order Number(s): 669564

Report Date: 08.17.2020
Date Received: 08.10.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3134270 BTEX by EPA 8021B

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

Samples affected are: 669564-009,669564-001.



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-1 1' Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-001 Date Collected: 08.04.2020 13:14
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.10.2020 16:40 Basis: Wet Weight
 Seq Number: 3134094

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1800	24.8	mg/kg	08.10.2020 21:48		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.11.2020 12:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	104	50.0	mg/kg	08.11.2020 12:56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.11.2020 12:56	U	1
Total TPH	PHC635	104	50.0	mg/kg	08.11.2020 12:56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	08.11.2020 12:56	
o-Terphenyl	84-15-1	117	%	70-130	08.11.2020 12:56	



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Larson and Associates, Inc., Midland, TX

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Sample Id: S-1 1'
Lab Sample Id: 669564-001

Matrix: Soil
Date Collected: 08.04.2020 13:14

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 08:30

Basis: Wet Weight

Seq Number: 3134270

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.2020 13:45	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.2020 13:45	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.11.2020 13:45	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.2020 13:45	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.2020 13:45	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.2020 13:45	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.11.2020 13:45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	121	%	70-130	08.11.2020 13:45		
4-Bromofluorobenzene	460-00-4	187	%	70-130	08.11.2020 13:45	**	



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Pad 10 18H

Sample Id: **S-1 3'** Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-002 Date Collected: 08.04.2020 13:15
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.10.2020 16:40 Basis: Wet Weight
 Seq Number: 3134094

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	406	25.2	mg/kg	08.10.2020 22:07		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.11.2020 13:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.11.2020 13:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.11.2020 13:55	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.11.2020 13:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-130	08.11.2020 13:55	
o-Terphenyl	84-15-1	112	%	70-130	08.11.2020 13:55	



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Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-1 3'
Lab Sample Id: 669564-002

Matrix: Soil
Date Collected: 08.04.2020 13:15

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 13:30

Basis: Wet Weight

Seq Number: 3134270

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.2020 14:06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.2020 14:06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.11.2020 14:06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.2020 14:06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.2020 14:06	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.2020 14:06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.11.2020 14:06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	08.11.2020 14:06		
1,4-Difluorobenzene	540-36-3	120	%	70-130	08.11.2020 14:06		



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Pad 10 18H

Sample Id: S-1 5' Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-003 Date Collected: 08.04.2020 13:16
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.10.2020 16:40 Basis: Wet Weight
 Seq Number: 3134094

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	200	24.9	mg/kg	08.10.2020 22:13		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.11.2020 14:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.11.2020 14:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.11.2020 14:14	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.11.2020 14:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	08.11.2020 14:14	
o-Terphenyl	84-15-1	112	%	70-130	08.11.2020 14:14	



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Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-1 5'
Lab Sample Id: 669564-003

Matrix: Soil
Date Collected: 08.04.2020 13:16

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 13:30

Basis: Wet Weight

Seq Number: 3134270

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.2020 14:26	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.2020 14:26	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.2020 14:26	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.11.2020 14:26	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.2020 14:26	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.2020 14:26	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.2020 14:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.11.2020 14:26	
1,4-Difluorobenzene	540-36-3	114	%	70-130	08.11.2020 14:26	



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Sample Id: S-2 1' Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-004 Date Collected: 08.04.2020 13:33
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.10.2020 16:40 Basis: Wet Weight
 Seq Number: 3134094

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	722	5.02	mg/kg	08.10.2020 22:32		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.11.2020 14:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.11.2020 14:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.11.2020 14:34	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.11.2020 14:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-130	08.11.2020 14:34	
o-Terphenyl	84-15-1	111	%	70-130	08.11.2020 14:34	



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Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-2 1'
Lab Sample Id: 669564-004

Matrix: Soil
Date Collected: 08.04.2020 13:33

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 13:30

Basis: Wet Weight

Seq Number: 3134270

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.2020 14:47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.2020 14:47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.2020 14:47	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.2020 14:47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.2020 14:47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.2020 14:47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.2020 14:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.11.2020 14:47	
1,4-Difluorobenzene	540-36-3	114	%	70-130	08.11.2020 14:47	



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Sample Id: S-2 3' Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-005 Date Collected: 08.04.2020 13:34
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.10.2020 16:40 Basis: Wet Weight
 Seq Number: 3134094

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	485	5.00	mg/kg	08.10.2020 22:39		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.11.2020 14:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	08.11.2020 14:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.11.2020 14:53	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	08.11.2020 14:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-130	08.11.2020 14:53	
o-Terphenyl	84-15-1	110	%	70-130	08.11.2020 14:53	



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Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-2 3'
Lab Sample Id: 669564-005

Matrix: Soil
Date Collected: 08.04.2020 13:34

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 13:30

Basis: Wet Weight

Seq Number: 3134270

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.11.2020 16:28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.11.2020 16:28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.11.2020 16:28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.11.2020 16:28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.11.2020 16:28	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.11.2020 16:28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.11.2020 16:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	70-130	08.11.2020 16:28	
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.11.2020 16:28	



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Sample Id: S-2 5' Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-006 Date Collected: 08.04.2020 13:35
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.10.2020 16:40 Basis: Wet Weight
 Seq Number: 3134094

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.4	5.00	mg/kg	08.10.2020 22:45		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.11.2020 15:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.11.2020 15:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.11.2020 15:13	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.11.2020 15:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-130	08.11.2020 15:13	
o-Terphenyl	84-15-1	111	%	70-130	08.11.2020 15:13	



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Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-2 5'
Lab Sample Id: 669564-006

Matrix: Soil
Date Collected: 08.04.2020 13:35

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 15:00

Basis: Wet Weight

Seq Number: 3134270

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.2020 16:49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.2020 16:49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.11.2020 16:49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.2020 16:49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.2020 16:49	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.2020 16:49	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.11.2020 16:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116	%	70-130	08.11.2020 16:49	
4-Bromofluorobenzene	460-00-4	119	%	70-130	08.11.2020 16:49	



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Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-3 1' Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-007 Date Collected: 08.04.2020 14:21
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.10.2020 16:40 Basis: Wet Weight
 Seq Number: 3134094

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.2	5.00	mg/kg	08.10.2020 22:51		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.11.2020 15:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.11.2020 15:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.11.2020 15:32	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.11.2020 15:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-130	08.11.2020 15:32	
o-Terphenyl	84-15-1	110	%	70-130	08.11.2020 15:32	



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Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-3 1'
Lab Sample Id: 669564-007

Matrix: Soil
Date Collected: 08.04.2020 14:21

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 15:00

Basis: Wet Weight

Seq Number: 3134270

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.2020 17:09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.2020 17:09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.2020 17:09	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.11.2020 17:09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.2020 17:09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.2020 17:09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.2020 17:09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.11.2020 17:09		
1,4-Difluorobenzene	540-36-3	114	%	70-130	08.11.2020 17:09		



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Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-3 2' Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-008 Date Collected: 08.04.2020 14:22
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.10.2020 16:40 Basis: Wet Weight
 Seq Number: 3134094

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	69.8	4.99	mg/kg	08.10.2020 22:58		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.11.2020 15:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.11.2020 15:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.11.2020 15:52	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.11.2020 15:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	08.11.2020 15:52	
o-Terphenyl	84-15-1	115	%	70-130	08.11.2020 15:52	



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-3 2'
Lab Sample Id: 669564-008

Matrix: Soil
Date Collected: 08.04.2020 14:22

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 15:00

Basis: Wet Weight

Seq Number: 3134270

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.2020 17:30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.2020 17:30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.11.2020 17:30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.2020 17:30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.2020 17:30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.2020 17:30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.11.2020 17:30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.11.2020 17:30		
1,4-Difluorobenzene	540-36-3	115	%	70-130	08.11.2020 17:30		



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-3 5' Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-009 Date Collected: 08.04.2020 14:23
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.10.2020 16:40 Basis: Wet Weight
 Seq Number: 3134094

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1880	24.8	mg/kg	08.10.2020 23:04		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.11.2020 16:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.11.2020 16:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.11.2020 16:11	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.11.2020 16:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-130	08.11.2020 16:11	
o-Terphenyl	84-15-1	116	%	70-130	08.11.2020 16:11	



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-3 5'
Lab Sample Id: 669564-009

Matrix: Soil
Date Collected: 08.04.2020 14:23

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 15:00

Basis: Wet Weight

Seq Number: 3134270

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.11.2020 17:50	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.11.2020 17:50	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.11.2020 17:50	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.11.2020 17:50	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.11.2020 17:50	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.11.2020 17:50	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.11.2020 17:50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	143	%	70-130	08.11.2020 17:50	**	
1,4-Difluorobenzene	540-36-3	122	%	70-130	08.11.2020 17:50		



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: **S-8 1'** Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-010 Date Collected: 08.04.2020 13:43
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.10.2020 16:40 Basis: Wet Weight
 Seq Number: 3134094

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.3	5.04	mg/kg	08.10.2020 23:10		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.11.2020 16:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.11.2020 16:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.11.2020 16:30	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.11.2020 16:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	08.11.2020 16:30	
o-Terphenyl	84-15-1	104	%	70-130	08.11.2020 16:30	



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: **S-8 1'**
Lab Sample Id: 669564-010

Matrix: Soil
Date Collected: 08.04.2020 13:43

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 16:00

Basis: Wet Weight

Seq Number: 3134276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.2020 22:57	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.2020 22:57	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.11.2020 22:57	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.2020 22:57	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.2020 22:57	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.2020 22:57	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.11.2020 22:57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	08.11.2020 22:57	
4-Bromofluorobenzene	460-00-4	124	%	70-130	08.11.2020 22:57	



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: **S-8 3'**
Lab Sample Id: 669564-011

Matrix: Soil
Date Collected: 08.04.2020 13:44

Date Received: 08.10.2020 09:00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.11.2020 10:50

Basis: Wet Weight

Seq Number: 3134228

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	81.7	5.02	mg/kg	08.11.2020 16:10		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.11.2020 12:00

Basis: Wet Weight

Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.11.2020 17:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	08.11.2020 17:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.11.2020 17:08	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	08.11.2020 17:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	08.11.2020 17:08	
o-Terphenyl	84-15-1	104	%	70-130	08.11.2020 17:08	



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: **S-8 3'**
Lab Sample Id: 669564-011

Matrix: Soil
Date Collected: 08.04.2020 13:44

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 16:00

Basis: Wet Weight

Seq Number: 3134276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.11.2020 23:18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.11.2020 23:18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.11.2020 23:18	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.11.2020 23:18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.11.2020 23:18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.11.2020 23:18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.11.2020 23:18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	08.11.2020 23:18		
1,4-Difluorobenzene	540-36-3	115	%	70-130	08.11.2020 23:18		



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: **S-8 5'** Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-012 Date Collected: 08.04.2020 13:45
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.11.2020 10:50 Basis: Wet Weight
 Seq Number: 3134228

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	754	4.96	mg/kg	08.11.2020 16:29		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.11.2020 17:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.11.2020 17:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.11.2020 17:27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.11.2020 17:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-130	08.11.2020 17:27	
o-Terphenyl	84-15-1	112	%	70-130	08.11.2020 17:27	



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: S-8 5'
Lab Sample Id: 669564-012

Matrix: Soil
Date Collected: 08.04.2020 13:45

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 16:00

Basis: Wet Weight

Seq Number: 3134276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.11.2020 23:38	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.11.2020 23:38	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.11.2020 23:38	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.11.2020 23:38	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.11.2020 23:38	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.11.2020 23:38	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.11.2020 23:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	118	%	70-130	08.11.2020 23:38	
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.11.2020 23:38	



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: **S-9 1'** Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-013 Date Collected: 08.04.2020 14:01
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.11.2020 10:50 Basis: Wet Weight
 Seq Number: 3134228

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	121	4.99	mg/kg	08.11.2020 16:35		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.11.2020 17:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.11.2020 17:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.11.2020 17:47	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.11.2020 17:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	08.11.2020 17:47	
o-Terphenyl	84-15-1	118	%	70-130	08.11.2020 17:47	



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: **S-9 1'**
Lab Sample Id: 669564-013

Matrix: Soil
Date Collected: 08.04.2020 14:01

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 16:00

Basis: Wet Weight

Seq Number: 3134276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.11.2020 23:59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.11.2020 23:59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.11.2020 23:59	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.11.2020 23:59	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.11.2020 23:59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.11.2020 23:59	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.11.2020 23:59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	08.11.2020 23:59		
1,4-Difluorobenzene	540-36-3	109	%	70-130	08.11.2020 23:59		



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: **S-9 3'** Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-014 Date Collected: 08.04.2020 14:02
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.11.2020 10:50 Basis: Wet Weight
 Seq Number: 3134228

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	205	5.04	mg/kg	08.11.2020 16:42		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	08.11.2020 18:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	08.11.2020 18:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	08.11.2020 18:06	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	08.11.2020 18:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-130	08.11.2020 18:06	
o-Terphenyl	84-15-1	115	%	70-130	08.11.2020 18:06	



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: **S-9 3'**
Lab Sample Id: 669564-014

Matrix: Soil
Date Collected: 08.04.2020 14:02

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 16:00

Basis: Wet Weight

Seq Number: 3134276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.12.2020 00:19	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.12.2020 00:19	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.12.2020 00:19	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.12.2020 00:19	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.12.2020 00:19	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.12.2020 00:19	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.12.2020 00:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	120	%	70-130	08.12.2020 00:19	
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.12.2020 00:19	



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: **S-9 5'** Matrix: Soil Date Received: 08.10.2020 09:00
 Lab Sample Id: 669564-015 Date Collected: 08.04.2020 14:03
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE % Moisture:
 Analyst: CHE Date Prep: 08.11.2020 10:50 Basis: Wet Weight
 Seq Number: 3134228

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1650	25.0	mg/kg	08.11.2020 16:48		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 08.11.2020 12:00 Basis: Wet Weight
 Seq Number: 3134289

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.11.2020 18:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	82.5	50.0	mg/kg	08.11.2020 18:26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.11.2020 18:26	U	1
Total TPH	PHC635	82.5	50.0	mg/kg	08.11.2020 18:26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-130	08.11.2020 18:26	
o-Terphenyl	84-15-1	118	%	70-130	08.11.2020 18:26	



Certificate of Analytical Results 669564

Larson and Associates, Inc., Midland, TX

Pad 10 18H

Sample Id: **S-9 5'**
Lab Sample Id: 669564-015

Matrix: Soil
Date Collected: 08.04.2020 14:03

Date Received: 08.10.2020 09:00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 08.11.2020 16:00

Basis: Wet Weight

Seq Number: 3134276

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.12.2020 00:40	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.12.2020 00:40	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.12.2020 00:40	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.12.2020 00:40	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.12.2020 00:40	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.12.2020 00:40	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.12.2020 00:40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	120	%	70-130	08.12.2020 00:40		
1,4-Difluorobenzene	540-36-3	111	%	70-130	08.12.2020 00:40		

**Certificate of Analytical Results 669564****Larson and Associates, Inc., Midland, TX**

Pad 10 18H

Sample Id: **S-9 7'**
Lab Sample Id: 669564-016

Matrix: Soil
Date Collected: 08.04.2020 14:15

Date Received: 08.10.2020 09:00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.11.2020 10:50

Basis: Wet Weight

Seq Number: 3134228

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	104	5.00	mg/kg	08.11.2020 17:07		1

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.
Pad 10 18H

Analytical Method: Chloride by EPA 300

Seq Number: 3134094

MB Sample Id: 7709100-1-BLK

Matrix: Solid

LCS Sample Id: 7709100-1-BKS

Prep Method: E300P

Date Prep: 08.10.2020

LCSD Sample Id: 7709100-1-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	267	107	267	107	90-110	0	20	mg/kg	08.10.2020 20:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3134228

MB Sample Id: 7709150-1-BLK

Matrix: Solid

LCS Sample Id: 7709150-1-BKS

Prep Method: E300P

Date Prep: 08.11.2020

LCSD Sample Id: 7709150-1-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	264	106	265	106	90-110	0	20	mg/kg	08.11.2020 15:57	

Analytical Method: Chloride by EPA 300

Seq Number: 3134094

Parent Sample Id: 669564-001

Matrix: Soil

MS Sample Id: 669564-001 S

Prep Method: E300P

Date Prep: 08.10.2020

MSD Sample Id: 669564-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1800	1240	3130	107	3130	107	90-110	0	20	mg/kg	08.10.2020 21:54	

Analytical Method: Chloride by EPA 300

Seq Number: 3134094

Parent Sample Id: 669576-004

Matrix: Soil

MS Sample Id: 669576-004 S

Prep Method: E300P

Date Prep: 08.10.2020

MSD Sample Id: 669576-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	49.7	250	334	114	332	113	90-110	1	20	mg/kg	08.10.2020 20:25	X

Analytical Method: Chloride by EPA 300

Seq Number: 3134228

Parent Sample Id: 669564-011

Matrix: Soil

MS Sample Id: 669564-011 S

Prep Method: E300P

Date Prep: 08.11.2020

MSD Sample Id: 669564-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	81.7	251	350	107	345	105	90-110	1	20	mg/kg	08.11.2020 16:16	

Analytical Method: Chloride by EPA 300

Seq Number: 3134228

Parent Sample Id: 669565-005

Matrix: Soil

MS Sample Id: 669565-005 S

Prep Method: E300P

Date Prep: 08.11.2020

MSD Sample Id: 669565-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	78.8	1260	1430	107	1420	106	90-110	1	20	mg/kg	08.11.2020 17:45	

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.

Pad 10 18H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3134289

MB Sample Id: 7709212-1-BLK

Matrix: Solid

LCS Sample Id: 7709212-1-BKS

Prep Method: SW8015P

Date Prep: 08.11.2020

LCSD Sample Id: 7709212-1-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	854	85	884	88	70-130	3	20	mg/kg	08.11.2020 12:17	
Diesel Range Organics (DRO)	<50.0	1000	838	84	898	90	70-130	7	20	mg/kg	08.11.2020 12:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		124		129		70-130	%	08.11.2020 12:17
o-Terphenyl	121		120		128		70-130	%	08.11.2020 12:17

Analytical Method: TPH by SW8015 Mod

Seq Number: 3134289

Matrix: Solid

Prep Method: SW8015P

Date Prep: 08.11.2020

MB Sample Id: 7709212-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	08.11.2020 11:57	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3134289

Matrix: Soil

Prep Method: SW8015P

Date Prep: 08.11.2020

Parent Sample Id: 669564-001

MS Sample Id: 669564-001 S

MSD Sample Id: 669564-001 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)	<49.9	997	801	80	821	82	70-130	2	20	mg/kg	08.11.2020 13:16	
Diesel Range Organics (DRO)	104	997	874	77	866	77	70-130	1	20	mg/kg	08.11.2020 13:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		124		70-130	%	08.11.2020 13:16
o-Terphenyl	120		124		70-130	%	08.11.2020 13:16

Analytical Method: BTEX by EPA 8021B

Seq Number: 3134270

Matrix: Solid

Prep Method: SW5035A

Date Prep: 08.11.2020

MB Sample Id: 7709255-1-BLK

LCS Sample Id: 7709255-1-BKS

LCSD Sample Id: 7709255-1-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	0.0995	100	0.0991	99	70-130	0	35	mg/kg	08.11.2020 09:20	
Toluene	<0.00200	0.100	0.0957	96	0.0944	94	70-130	1	35	mg/kg	08.11.2020 09:20	
Ethylbenzene	<0.00200	0.100	0.0949	95	0.0928	93	70-130	2	35	mg/kg	08.11.2020 09:20	
m,p-Xylenes	<0.00400	0.200	0.192	96	0.187	94	70-130	3	35	mg/kg	08.11.2020 09:20	
o-Xylene	<0.00200	0.100	0.0935	94	0.0919	92	70-130	2	35	mg/kg	08.11.2020 09:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		97		97		70-130	%	08.11.2020 09:20
4-Bromofluorobenzene	87		96		94		70-130	%	08.11.2020 09:20

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.
Pad 10 18H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3134276

Matrix: Solid

Prep Method: SW5035A

Date Prep: 08.11.2020

MB Sample Id: 7709267-1-BLK

LCS Sample Id: 7709267-1-BKS

LCSD Sample Id: 7709267-1-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	0.104	104	0.106	106	70-130	2	35	mg/kg	08.11.2020 20:35	
Toluene	<0.00200	0.100	0.0980	98	0.100	100	70-130	2	35	mg/kg	08.11.2020 20:35	
Ethylbenzene	<0.00200	0.100	0.0951	95	0.0982	98	70-130	3	35	mg/kg	08.11.2020 20:35	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.195	98	70-130	3	35	mg/kg	08.11.2020 20:35	
o-Xylene	<0.00200	0.100	0.0937	94	0.0971	97	70-130	4	35	mg/kg	08.11.2020 20:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		101		100		70-130	%	08.11.2020 20:35
4-Bromofluorobenzene	105		100		100		70-130	%	08.11.2020 20:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3134270

Matrix: Soil

Prep Method: SW5035A

Date Prep: 08.11.2020

Parent Sample Id: 669564-001

MS Sample Id: 669564-001 S

MSD Sample Id: 669564-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.103	104	0.103	103	70-130	0	35	mg/kg	08.11.2020 10:01	
Toluene	<0.00198	0.0992	0.0938	95	0.0890	89	70-130	5	35	mg/kg	08.11.2020 10:01	
Ethylbenzene	<0.00198	0.0992	0.0892	90	0.0781	78	70-130	13	35	mg/kg	08.11.2020 10:01	
m,p-Xylenes	<0.00397	0.198	0.180	91	0.155	78	70-130	15	35	mg/kg	08.11.2020 10:01	
o-Xylene	<0.00198	0.0992	0.0865	87	0.0762	76	70-130	13	35	mg/kg	08.11.2020 10:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		105		70-130	%	08.11.2020 10:01
4-Bromofluorobenzene	98		101		70-130	%	08.11.2020 10:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3134276

Matrix: Soil

Prep Method: SW5035A

Date Prep: 08.11.2020

Parent Sample Id: 669564-015

MS Sample Id: 669564-015 S

MSD Sample Id: 669564-015 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	0.0875	88	0.0812	82	70-130	7	35	mg/kg	08.11.2020 21:16	
Toluene	<0.00200	0.0998	0.0818	82	0.0794	80	70-130	3	35	mg/kg	08.11.2020 21:16	
Ethylbenzene	<0.00200	0.0998	0.0758	76	0.0729	73	70-130	4	35	mg/kg	08.11.2020 21:16	
m,p-Xylenes	<0.00399	0.200	0.154	77	0.153	77	70-130	1	35	mg/kg	08.11.2020 21:16	
o-Xylene	<0.00200	0.0998	0.0768	77	0.0769	78	70-130	0	35	mg/kg	08.11.2020 21:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		70-130	%	08.11.2020 21:16
4-Bromofluorobenzene	101		105		70-130	%	08.11.2020 21:16

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

No 1324

Marson & Associates, Inc.
Environmental Consultants

507 N. Marientfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 8/5/20 PAGE 2 OF 2
PO#: _____ LAB WORK ORDER#: _____
PROJECT LOCATION OR NAME: Ind 10 18H
LAI PROJECT #: 14-0180-02 COLLECTOR: TT+DS

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

HCl

HNO₃

H₂SO₄ ☐ NaOH ☐

ICE

UNPRESSERVED

PRESERVATION

ANALYSES

BTEX ☐ MTBE ☐

TRPH 418.1 ☐ TPH 1005 ☐ TPH 1008 ☐

GASOLINE MOD 8015 ☐

DIESEL - MOD 8015 ☐

OIL - MOD 8015 ☐

VOC 8260 ☐

SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐

8081 PESTICIDES ☐ 8151 HERBICIDES ☐

TBLP - METALS (RCRA) ☐ TCLP VOC ☐

TCLP - PEST ☐ HERB ☐ Semi-VOC ☐

TOTAL METALS (RCRA) ☐ OTHER LIST ☐

LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐

RCL ☐ TOX ☐ FLASHPOINT ☐

TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

pH ☐ HEXAVALENT CHROMIUM ☐

EXPLOSIVES ☐ PECHLORATE ☐

CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

5-9 71

8/4/20

1415

5

1

X

X

TOTAL 1

RELINQUISHED BY: (Signature)
Carroll

DATE/TIME
8/10/20

RECEIVED BY: (Signature)
TT

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 16/16 THERM#: MC

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

LABORATORY: Xenaco

☐ HAND DELIVERED

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 08.10.2020 09.00.00 AM**Work Order #:** 669564**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** IR-8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#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 BTEX was in bulk container
#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: 08.10.2020

Checklist reviewed by:

Holly Taylor

Date: 08.11.2020

Certificate of Analysis Summary 679287

Larson and Associates, Inc., Midland, TX

Project Name: Salado Draw Pad 10 Well 18H

Project Id: 19-0180-09

Contact: Mark Larson

Project Location:

Date Received in Lab: Tue 12.01.2020 09:33

Report Date: 12.08.2020 09:58

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	679287-001	679287-002	679287-003	679287-004	679287-005	679287-006
	<i>Field Id:</i>	S-10, 0.5'	S-10, 1'	S-8, 5'	S-8, 10'	S-8, 15'	S-8, 20'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.24.2020 11:05	11.24.2020 11:15	11.30.2020 15:45	11.30.2020 15:50	11.30.2020 15:53	11.30.2020 15:57
BTEX by EPA 8021B	<i>Extracted:</i>	12.02.2020 16:00	12.02.2020 16:00				
	<i>Analyzed:</i>	12.03.2020 00:53	12.03.2020 01:13				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Benzene		<0.00201 0.00201	<0.00201 0.00201				
Toluene		<0.00201 0.00201	<0.00201 0.00201				
Ethylbenzene		<0.00201 0.00201	<0.00201 0.00201				
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402				
o-Xylene		<0.00201 0.00201	<0.00201 0.00201				
Total Xylenes		<0.002010 0.002010	<0.002010 0.002010				
Total BTEX		<0.002010 0.002010	<0.002010 0.002010				
Chloride by EPA 300	<i>Extracted:</i>	12.01.2020 16:50	12.01.2020 16:50	12.01.2020 16:50	12.01.2020 16:50	12.01.2020 16:50	12.01.2020 16:50
	<i>Analyzed:</i>	12.01.2020 18:39	12.01.2020 18:44	12.01.2020 18:49	12.01.2020 18:54	12.01.2020 19:10	12.01.2020 19:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		203 4.98	335 5.04	60.9 4.96	148 4.95	172 4.95	125 4.99
TPH by SW8015 Mod	<i>Extracted:</i>	12.01.2020 17:00	12.01.2020 17:00				
	<i>Analyzed:</i>	12.02.2020 01:55	12.02.2020 02:17				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.8 49.8				
Diesel Range Organics (DRO)		94.8 49.9	101 49.8				
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8				
Total TPH		94.80 49.90	101.0 49.80				

BRL - Below Reporting Limit

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



Certificate of Analysis Summary 679287

Larson and Associates, Inc., Midland, TX

Project Name: Salado Draw Pad 10 Well 18H

Project Id: 19-0180-09

Date Received in Lab: Tue 12.01.2020 09:33

Contact: Mark Larson

Report Date: 12.08.2020 09:58

Project Location:

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	679287-007	679287-008	679287-009	679287-010		
	Field Id:	S-3, 5'	S-3, 10'	S-3, 15'	S-3, 20'		
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	11.30.2020 16:10	11.30.2020 16:13	11.30.2020 16:16	11.30.2020 16:20		
Chloride by EPA 300	Extracted:	12.01.2020 15:00	12.01.2020 15:00	12.01.2020 15:00	12.01.2020 15:00		
	Analyzed:	12.01.2020 19:46	12.01.2020 19:54	12.01.2020 20:01	12.01.2020 20:09		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		255 5.05	121 5.03	128 4.96	136 5.01		

BRL - Below Reporting Limit

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



Analytical Report 679287

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Salado Draw Pad 10 Well 18H

19-0180-09

12.08.2020

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 (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



12.08.2020

Project Manager: **Mark Larson**

Larson and Associates, Inc.

P. O. Box 50685

Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **679287**

Salado Draw Pad 10 Well 18H

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) 679287. 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. 679287 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 679287****Larson and Associates, Inc., Midland, TX**

Salado Draw Pad 10 Well 18H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-10, 0.5'	S	11.24.2020 11:05		679287-001
S-10, 1'	S	11.24.2020 11:15		679287-002
S-8, 5'	S	11.30.2020 15:45		679287-003
S-8, 10'	S	11.30.2020 15:50		679287-004
S-8, 15'	S	11.30.2020 15:53		679287-005
S-8, 20'	S	11.30.2020 15:57		679287-006
S-3, 5'	S	11.30.2020 16:10		679287-007
S-3, 10'	S	11.30.2020 16:13		679287-008
S-3, 15'	S	11.30.2020 16:16		679287-009
S-3, 20'	S	11.30.2020 16:20		679287-010



CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: Salado Draw Pad 10 Well 18H

Project ID: 19-0180-09

Report Date: 12.08.2020

Work Order Number(s): 679287

Date Received: 12.01.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 679287

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 18H

Sample Id: **S-10, 0.5'**
Lab Sample Id: 679287-001

Matrix: Soil
Date Collected: 11.24.2020 11:05

Date Received: 12.01.2020 09:33

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.01.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3143689

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	203	4.98	mg/kg	12.01.2020 18:39		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.01.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143721

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.02.2020 01:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	94.8	49.9	mg/kg	12.02.2020 01:55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.02.2020 01:55	U	1
Total TPH	PHC635	94.80	49.90	mg/kg	12.02.2020 01:55		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	97	%	70-130	12.02.2020 01:55		
o-Terphenyl	84-15-1	105	%	70-130	12.02.2020 01:55		



Certificate of Analytical Results 679287

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 18H

Sample Id: **S-10, 0.5'**
Lab Sample Id: 679287-001

Matrix: Soil
Date Collected: 11.24.2020 11:05

Date Received: 12.01.2020 09:33

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 12.02.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143824

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.03.2020 00:53	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.03.2020 00:53	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.03.2020 00:53	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.03.2020 00:53	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.03.2020 00:53	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	12.03.2020 00:53	U	1
Total BTEX		<0.002010	0.002010	mg/kg	12.03.2020 00:53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	12.03.2020 00:53		
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.03.2020 00:53		



Certificate of Analytical Results 679287

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 18H

Sample Id: **S-10, 1'**
Lab Sample Id: 679287-002

Matrix: Soil
Date Collected: 11.24.2020 11:15

Date Received: 12.01.2020 09:33

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.01.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3143689

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	335	5.04	mg/kg	12.01.2020 18:44		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.01.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143721

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.02.2020 02:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	101	49.8	mg/kg	12.02.2020 02:17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.02.2020 02:17	U	1
Total TPH	PHC635	101.0	49.80	mg/kg	12.02.2020 02:17		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	101	%	70-130	12.02.2020 02:17		
o-Terphenyl	84-15-1	109	%	70-130	12.02.2020 02:17		



Certificate of Analytical Results 679287

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 18H

Sample Id: **S-10, 1'**
Lab Sample Id: 679287-002

Matrix: Soil
Date Collected: 11.24.2020 11:15

Date Received: 12.01.2020 09:33

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MNR

Analyst: MNR

Date Prep: 12.02.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143824

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.03.2020 01:13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.03.2020 01:13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.03.2020 01:13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.03.2020 01:13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.03.2020 01:13	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	12.03.2020 01:13	U	1
Total BTEX		<0.002010	0.002010	mg/kg	12.03.2020 01:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	12.03.2020 01:13		
1,4-Difluorobenzene	540-36-3	100	%	70-130	12.03.2020 01:13		



Certificate of Analytical Results 679287

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 18H

Sample Id: S-8, 5'
Lab Sample Id: 679287-003

Matrix: Soil
Date Collected: 11.30.2020 15:45

Date Received: 12.01.2020 09:33

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.01.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3143689

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	60.9	4.96	mg/kg	12.01.2020 18:49		1

**Certificate of Analytical Results 679287****Larson and Associates, Inc., Midland, TX**

Salado Draw Pad 10 Well 18H

Sample Id: **S-8, 10'**
Lab Sample Id: 679287-004

Matrix: Soil
Date Collected: 11.30.2020 15:50

Date Received: 12.01.2020 09:33

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.01.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3143689

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	148	4.95	mg/kg	12.01.2020 18:54		1



Certificate of Analytical Results 679287

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 18H

Sample Id: S-8, 15'
Lab Sample Id: 679287-005

Matrix: Soil
Date Collected: 11.30.2020 15:53

Date Received: 12.01.2020 09:33

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.01.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3143689

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	172	4.95	mg/kg	12.01.2020 19:10		1

**Certificate of Analytical Results 679287****Larson and Associates, Inc., Midland, TX**

Salado Draw Pad 10 Well 18H

Sample Id: **S-8, 20'**
Lab Sample Id: 679287-006

Matrix: Soil
Date Collected: 11.30.2020 15:57

Date Received: 12.01.2020 09:33

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.01.2020 16:50

% Moisture:
Basis: Wet Weight

Seq Number: 3143689

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	125	4.99	mg/kg	12.01.2020 19:16		1

**Certificate of Analytical Results 679287****Larson and Associates, Inc., Midland, TX**

Salado Draw Pad 10 Well 18H

Sample Id: S-3, 5'
Lab Sample Id: 679287-007

Matrix: Soil
Date Collected: 11.30.2020 16:10

Date Received: 12.01.2020 09:33

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.01.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143685

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	255	5.05	mg/kg	12.01.2020 19:46		1

**Certificate of Analytical Results 679287****Larson and Associates, Inc., Midland, TX**

Salado Draw Pad 10 Well 18H

Sample Id: **S-3, 10'**
Lab Sample Id: 679287-008

Matrix: Soil
Date Collected: 11.30.2020 16:13

Date Received: 12.01.2020 09:33

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.01.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143685

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	121	5.03	mg/kg	12.01.2020 19:54		1

**Certificate of Analytical Results 679287****Larson and Associates, Inc., Midland, TX**

Salado Draw Pad 10 Well 18H

Sample Id: S-3, 15'
Lab Sample Id: 679287-009

Matrix: Soil
Date Collected: 11.30.2020 16:16

Date Received: 12.01.2020 09:33

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.01.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143685

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	128	4.96	mg/kg	12.01.2020 20:01		1

**Certificate of Analytical Results 679287****Larson and Associates, Inc., Midland, TX**

Salado Draw Pad 10 Well 18H

Sample Id: **S-3, 20'**
Lab Sample Id: 679287-010

Matrix: Soil
Date Collected: 11.30.2020 16:20

Date Received: 12.01.2020 09:33

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.01.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143685

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	136	5.01	mg/kg	12.01.2020 20:09		1

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.
Salado Draw Pad 10 Well 18H

Analytical Method: Chloride by EPA 300

Seq Number: 3143685

MB Sample Id: 7716190-1-BLK

Matrix: Solid

LCS Sample Id: 7716190-1-BKS

Prep Method: E300P

Date Prep: 12.01.2020

LCSD Sample Id: 7716190-1-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	264	106	265	106	90-110	0	20	mg/kg	12.01.2020 16:36	

Analytical Method: Chloride by EPA 300

Seq Number: 3143689

MB Sample Id: 7716191-1-BLK

Matrix: Solid

LCS Sample Id: 7716191-1-BKS

Prep Method: E300P

Date Prep: 12.01.2020

LCSD Sample Id: 7716191-1-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	252	101	253	101	90-110	0	20	mg/kg	12.01.2020 18:12	

Analytical Method: Chloride by EPA 300

Seq Number: 3143685

Parent Sample Id: 679301-001

Matrix: Soil

MS Sample Id: 679301-001 S

Prep Method: E300P

Date Prep: 12.01.2020

MSD Sample Id: 679301-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1390	1250	2650	101	2670	102	90-110	1	20	mg/kg	12.02.2020 12:37	

Analytical Method: Chloride by EPA 300

Seq Number: 3143685

Parent Sample Id: 679348-002

Matrix: Soil

MS Sample Id: 679348-002 S

Prep Method: E300P

Date Prep: 12.01.2020

MSD Sample Id: 679348-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	287	250	522	94	521	94	90-110	0	20	mg/kg	12.01.2020 18:40	

Analytical Method: Chloride by EPA 300

Seq Number: 3143689

Parent Sample Id: 679286-001

Matrix: Soil

MS Sample Id: 679286-001 S

Prep Method: E300P

Date Prep: 12.01.2020

MSD Sample Id: 679286-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.2	251	279	105	282	106	90-110	1	20	mg/kg	12.01.2020 18:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3143689

Parent Sample Id: 679348-011

Matrix: Soil

MS Sample Id: 679348-011 S

Prep Method: E300P

Date Prep: 12.01.2020

MSD Sample Id: 679348-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	438	248	676	96	677	96	90-110	0	20	mg/kg	12.01.2020 19:42	

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.
 Salado Draw Pad 10 Well 18H
Analytical Method: TPH by SW8015 Mod

Seq Number: 3143721

MB Sample Id: 7716218-1-BLK

Matrix: Solid

LCS Sample Id: 7716218-1-BKS

Prep Method: SW8015P

Date Prep: 12.01.2020

LCSD Sample Id: 7716218-1-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	951	95	812	81	70-130	16	20	mg/kg	12.01.2020 18:55	
Diesel Range Organics (DRO)	<50.0	1000	870	87	872	87	70-130	0	20	mg/kg	12.01.2020 18:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		101		101		70-130	%	12.01.2020 18:55
o-Terphenyl	102		101		106		70-130	%	12.01.2020 18:55

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143721

Matrix: Solid

MB Sample Id: 7716218-1-BLK

Prep Method: SW8015P

Date Prep: 12.01.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.01.2020 18:33	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143721

Matrix: Soil

Parent Sample Id: 679349-001

MS Sample Id: 679349-001 S

Prep Method: SW8015P

Date Prep: 12.01.2020

MSD Sample Id: 679349-001 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)	<49.9	998	849	85	824	83	70-130	3	20	mg/kg	12.01.2020 20:00	
Diesel Range Organics (DRO)	58.4	998	886	83	908	85	70-130	2	20	mg/kg	12.01.2020 20:00	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		94		70-130	%	12.01.2020 20:00
o-Terphenyl	91		96		70-130	%	12.01.2020 20:00

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143824

Matrix: Solid

MB Sample Id: 7716353-1-BLK

LCS Sample Id: 7716353-1-BKS

Prep Method: SW5035A

Date Prep: 12.02.2020

LCSD Sample Id: 7716353-1-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	0.0997	100	0.0944	94	70-130	5	35	mg/kg	12.02.2020 16:00	
Toluene	<0.00200	0.100	0.113	113	0.0888	89	70-130	24	35	mg/kg	12.02.2020 16:00	
Ethylbenzene	<0.00200	0.100	0.107	107	0.0959	96	70-130	11	35	mg/kg	12.02.2020 16:00	
m,p-Xylenes	<0.00400	0.200	0.213	107	0.189	95	70-130	12	35	mg/kg	12.02.2020 16:00	
o-Xylene	<0.00200	0.100	0.105	105	0.0936	94	70-130	11	35	mg/kg	12.02.2020 16:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		100		101		70-130	%	12.02.2020 16:00
4-Bromofluorobenzene	108		103		97		70-130	%	12.02.2020 16:00

 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.
 Salado Draw Pad 10 Well 18H
Analytical Method: BTEX by EPA 8021B

Seq Number: 3143824

Parent Sample Id: 678987-018

Matrix: Soil

MS Sample Id: 678987-018 S

Prep Method: SW5035A

Date Prep: 12.02.2020

MSD Sample Id: 678987-018 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	0.127	127	0.129	129	70-130	2	35	mg/kg	12.02.2020 16:41	
Toluene	<0.00200	0.0998	0.116	116	0.118	118	70-130	2	35	mg/kg	12.02.2020 16:41	
Ethylbenzene	<0.00200	0.0998	0.116	116	0.118	118	70-130	2	35	mg/kg	12.02.2020 16:41	
m,p-Xylenes	<0.00399	0.200	0.234	117	0.240	120	70-130	3	35	mg/kg	12.02.2020 16:41	
o-Xylene	<0.00200	0.0998	0.110	110	0.113	113	70-130	3	35	mg/kg	12.02.2020 16:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	12.02.2020 16:41
4-Bromofluorobenzene	104		105		70-130	%	12.02.2020 16:41

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

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 12.01.2020 09.33.00 AM

Work Order #: 679287

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)?	.5
#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: 12.01.2020

Checklist reviewed by:



Holly Taylor

Date: 12.01.2020

Certificate of Analysis Summary 681713



Larson and Associates, Inc., Midland, TX

Project Name: SD Pad 10 Well 18H

Project Id: 19-0180-09

Date Received in Lab: Fri 12.18.2020 08:56

Contact: Mark Larson

Report Date: 12.22.2020 09:06

Project Location:

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	681713-001	681713-003				
	Field Id:	S-10 (1.5')	S-11 (0.5')				
	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	12.17.2020 10:12	12.17.2020 10:20				
BTEX by EPA 8021B	Extracted:	12.19.2020 10:00	12.19.2020 10:00				
	Analyzed:	12.20.2020 20:14	12.20.2020 20:35				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00200 0.00200	<0.00201 0.00201				
Toluene		<0.00200 0.00200	<0.00201 0.00201				
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201				
m,p-Xylenes		<0.00399 0.00399	<0.00402 0.00402				
o-Xylene		<0.00200 0.00200	<0.00201 0.00201				
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201				
Total BTEX		<0.00200 0.00200	<0.00201 0.00201				
Chloride by EPA 300	Extracted:	12.20.2020 10:30	12.20.2020 10:30				
	Analyzed:	12.20.2020 11:34	12.20.2020 11:50				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		16.8 4.99	12.5 4.96				
TPH by SW8015 Mod	Extracted:	12.18.2020 17:00	12.18.2020 17:00				
	Analyzed:	12.19.2020 05:57	12.19.2020 06:54				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.8 49.8				
Diesel Range Organics (DRO)		<50.0 50.0	<49.8 49.8				
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.8 49.8				
Total TPH		<50.0 50.0	<49.8 49.8				

BRL - Below Reporting Limit

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

Analytical Report 681713

for

Larson and Associates, Inc.

Project Manager: Mark Larson

SD Pad 10 Well 18H

19-0180-09

12.22.2020

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 (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



12.22.2020

Project Manager: **Mark Larson**
Larson and Associates, Inc.
P. O. Box 50685
Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **681713**
SD Pad 10 Well 18H
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) 681713. 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. 681713 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,

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 681713****Larson and Associates, Inc., Midland, TX**

SD Pad 10 Well 18H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-10 (1.5')	S	12.17.2020 10:12		681713-001
S-11 (0.5')	S	12.17.2020 10:20		681713-003
S-10 (2')	S	12.17.2020 10:15		Not Analyzed
S-11(1')	S	12.17.2020 10:25		Not Analyzed



CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: SD Pad 10 Well 18H

Project ID: 19-0180-09
Work Order Number(s): 681713

Report Date: 12.22.2020
Date Received: 12.18.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 681713

Larson and Associates, Inc., Midland, TX

SD Pad 10 Well 18H

Sample Id: **S-10 (1.5')**

Matrix: Soil

Date Received: 12.18.2020 08:56

Lab Sample Id: 681713-001

Date Collected: 12.17.2020 10:12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.20.2020 10:30

% Moisture:

Seq Number: 3145511

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.8	4.99	mg/kg	12.20.2020 11:34		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.18.2020 17:00

% Moisture:

Seq Number: 3145526

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.19.2020 05:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.19.2020 05:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.19.2020 05:57	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.19.2020 05:57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	98	%	70-130	12.19.2020 05:57		
o-Terphenyl	84-15-1	98	%	70-130	12.19.2020 05:57		



Certificate of Analytical Results 681713

Larson and Associates, Inc., Midland, TX

SD Pad 10 Well 18H

Sample Id: S-10 (1.5')

Matrix: Soil

Date Received: 12.18.2020 08:56

Lab Sample Id: 681713-001

Date Collected: 12.17.2020 10:12

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.19.2020 10:00

% Moisture:

Seq Number: 3145493

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.20.2020 20:14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.20.2020 20:14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.20.2020 20:14	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.20.2020 20:14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.20.2020 20:14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.20.2020 20:14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.20.2020 20:14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	12.20.2020 20:14		
4-Bromofluorobenzene	460-00-4	114	%	70-130	12.20.2020 20:14		



Certificate of Analytical Results 681713

Larson and Associates, Inc., Midland, TX

SD Pad 10 Well 18H

Sample Id: S-11 (0.5')

Matrix: Soil

Date Received: 12.18.2020 08:56

Lab Sample Id: 681713-003

Date Collected: 12.17.2020 10:20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.20.2020 10:30

% Moisture:

Seq Number: 3145511

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.5	4.96	mg/kg	12.20.2020 11:50		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.18.2020 17:00

% Moisture:

Seq Number: 3145526

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.19.2020 06:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.19.2020 06:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.19.2020 06:54	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.19.2020 06:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	93	%	70-130	12.19.2020 06:54		
o-Terphenyl	84-15-1	94	%	70-130	12.19.2020 06:54		



Certificate of Analytical Results 681713

Larson and Associates, Inc., Midland, TX

SD Pad 10 Well 18H

Sample Id: S-11 (0.5')

Matrix: Soil

Date Received: 12.18.2020 08:56

Lab Sample Id: 681713-003

Date Collected: 12.17.2020 10:20

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.19.2020 10:00

% Moisture:

Seq Number: 3145493

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.20.2020 20:35	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.20.2020 20:35	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.20.2020 20:35	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.20.2020 20:35	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.20.2020 20:35	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.20.2020 20:35	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.20.2020 20:35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	129	%	70-130	12.20.2020 20:35		
1,4-Difluorobenzene	540-36-3	89	%	70-130	12.20.2020 20:35		

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 Pad 10 Well 18H

Analytical Method: Chloride by EPA 300

Seq Number: 3145511

MB Sample Id: 7717545-1-BLK

Matrix: Solid

LCS Sample Id: 7717545-1-BKS

Prep Method: E300P

Date Prep: 12.20.2020

LCSD Sample Id: 7717545-1-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	251	100	252	101	90-110	0	20	mg/kg	12.20.2020 10:52	

Analytical Method: Chloride by EPA 300

Seq Number: 3145511

Parent Sample Id: 681619-001

Matrix: Soil

MS Sample Id: 681619-001 S

Prep Method: E300P

Date Prep: 12.20.2020

MSD Sample Id: 681619-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	139	252	384	97	385	98	90-110	0	20	mg/kg	12.20.2020 11:08	

Analytical Method: Chloride by EPA 300

Seq Number: 3145511

Parent Sample Id: 681721-005

Matrix: Soil

MS Sample Id: 681721-005 S

Prep Method: E300P

Date Prep: 12.20.2020

MSD Sample Id: 681721-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5170	2530	8120	117	8140	117	90-110	0	20	mg/kg	12.20.2020 12:21	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3145526

MB Sample Id: 7717566-1-BLK

Matrix: Solid

LCS Sample Id: 7717566-1-BKS

Prep Method: SW8015P

Date Prep: 12.18.2020

LCSD Sample Id: 7717566-1-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	884	88	974	97	70-130	10	20	mg/kg	12.19.2020 05:20	
Diesel Range Organics (DRO)	<50.0	1000	922	92	980	98	70-130	6	20	mg/kg	12.19.2020 05:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		123		127		70-130	%	12.19.2020 05:20
o-Terphenyl	109		107		117		70-130	%	12.19.2020 05:20

Analytical Method: TPH by SW8015 Mod

Seq Number: 3145526

Matrix: Solid

MB Sample Id: 7717566-1-BLK

Prep Method: SW8015P

Date Prep: 12.18.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.19.2020 05:01	

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 Pad 10 Well 18H
Analytical Method: TPH by SW8015 Mod

Seq Number: 3145526

Parent Sample Id: 681713-001

Matrix: Soil

MS Sample Id: 681713-001 S

Prep Method: SW8015P

Date Prep: 12.18.2020

MSD Sample Id: 681713-001 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)	<49.9	998	873	87	820	82	70-130	6	20	mg/kg	12.19.2020 06:16	
Diesel Range Organics (DRO)	<49.9	998	973	97	968	97	70-130	1	20	mg/kg	12.19.2020 06:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		110		70-130	%	12.19.2020 06:16
o-Terphenyl	97		88		70-130	%	12.19.2020 06:16

Analytical Method: BTEX by EPA 8021B

Seq Number: 3145493

MB Sample Id: 7717544-1-BLK

Matrix: Solid

LCS Sample Id: 7717544-1-BKS

Prep Method: SW5035A

Date Prep: 12.19.2020

LCSD Sample Id: 7717544-1-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	0.0885	89	0.0930	93	70-130	5	35	mg/kg	12.20.2020 10:21	
Toluene	<0.00200	0.100	0.0825	83	0.0873	87	70-130	6	35	mg/kg	12.20.2020 10:21	
Ethylbenzene	<0.00200	0.100	0.0809	81	0.0869	87	70-130	7	35	mg/kg	12.20.2020 10:21	
m,p-Xylenes	<0.00400	0.200	0.159	80	0.173	87	70-130	8	35	mg/kg	12.20.2020 10:21	
o-Xylene	<0.00200	0.100	0.0813	81	0.0877	88	70-130	8	35	mg/kg	12.20.2020 10:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		98		99		70-130	%	12.20.2020 10:21
4-Bromofluorobenzene	108		94		97		70-130	%	12.20.2020 10:21

Analytical Method: BTEX by EPA 8021B

Seq Number: 3145493

Parent Sample Id: 681798-011

Matrix: Soil

MS Sample Id: 681798-011 S

Prep Method: SW5035A

Date Prep: 12.19.2020

MSD Sample Id: 681798-011 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	0.0613	61	0.0672	67	70-130	9	35	mg/kg	12.20.2020 11:02	X
Toluene	<0.00200	0.100	0.0415	42	0.0475	48	70-130	13	35	mg/kg	12.20.2020 11:02	X
Ethylbenzene	<0.00200	0.100	0.0443	44	0.0493	49	70-130	11	35	mg/kg	12.20.2020 11:02	X
m,p-Xylenes	<0.00400	0.200	0.0807	40	0.0901	45	70-130	11	35	mg/kg	12.20.2020 11:02	X
o-Xylene	<0.00200	0.100	0.0503	50	0.0535	54	70-130	6	35	mg/kg	12.20.2020 11:02	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		98		70-130	%	12.20.2020 11:02
4-Bromofluorobenzene	101		101		70-130	%	12.20.2020 11:02

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

No 1459

CHAIN-OF-CUSTODY

Marson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 12/18/2020 PAGE 1 OF 1
PO#: _____ LAB WORK ORDER#: 081713
PROJECT LOCATION OR NAME: 19-0180-04 COLLECTOR: BSG
LAI PROJECT #: 19-0180-04

TRRP report?
☐ Yes ☒ No

S=SOIL
W=WATER
A=AIR
P=PAINT
SL=SLUDGE
OT=OTHER

TIME ZONE:
Time zone/State:

MST / NM

Field
Sample I.D.

Lab #

Date

Time

Matrix

of Containers

HCl

HNO₃H₂SO₄ ☐ NaOH ☐

ICE

UNPRESSERVED

ANALYSES

BTEX ☒ MTBE ☐
TPH 418.1 ☐ TPH 1005 ☐ TPH 1008 ☐
GASOLINE MOD 8015 ☒
DIESEL - MOD 8015 ☒
OIL - MOD 8015 ☒
VOC 8260 ☐
SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐
8081 PESTICIDES ☐ 8151 HERBICIDES ☐
TBLP - METALS (RCRA) ☐ TCLP - METALS (RCRA) ☐
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 ☐ PECHLORATE ☐
CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

5-10 (1.5')
5-10 (2')
5-11 (0.5')
5-11 (1')

12/17/20

1012

S

1

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

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12/17/20

1025

S

1

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X

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X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

TOTAL 4

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: XEND

TURN AROUND TIME

NORMAL ☒1 DAY ☐2 DAY ☐OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 22/2.7 THERM#: KSCUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED

CARRIER BILL #

HAND DELIVERED

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 12.18.2020 08.56.00 AM

Work Order #: 681713

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)?	2.7
#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 BTEX was in bulk container
#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: 12.18.2020

Checklist reviewed by:



Holly Taylor

Date: 12.21.2020

Certificate of Analysis Summary 667586



Larson and Associates, Inc., Midland, TX

Project Name: Salado Draw Pad 10 Well 20

Project Id: 19-0180-02

Date Received in Lab: Fri 07.17.2020 16:17

Contact: Mark Larson

Report Date: 07.27.2020 16:18

Project Location: NM

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	667586-001	667586-002	667586-003	667586-004	667586-005	667586-006
	<i>Field Id:</i>	S-1	S-2	S-3	S-4	S-5	S-6
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	07.17.2020 11:30	07.17.2020 11:40	07.17.2020 11:50	07.17.2020 12:00	07.17.2020 11:25	07.17.2020 11:30
BTEX by EPA 8021B	<i>Extracted:</i>	07.26.2020 10:00	07.26.2020 10:00	07.26.2020 10:00	07.26.2020 10:00	07.26.2020 10:00	07.26.2020 10:00
	<i>Analyzed:</i>	07.26.2020 17:07	07.26.2020 17:28	07.26.2020 17:48	07.26.2020 19:11	07.26.2020 19:32	07.26.2020 19:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.00211 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.0202 0.0202	<0.00202 0.00202	<0.00200 0.00200
Toluene		0.00378 0.00200	<0.00201 0.00201	<0.00202 0.00202	0.0338 0.0202	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		0.00327 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.0202 0.0202	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		0.00638 0.00401	<0.00402 0.00402	<0.00403 0.00403	<0.0403 0.0403	<0.00403 0.00403	<0.00399 0.00399
o-Xylene		0.00318 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.0202 0.0202	<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		0.00956 0.00200	<0.00201 0.00201	<0.00202 0.00202	<0.0202 0.0202	<0.00202 0.00202	<0.00200 0.00200
Total BTEX		0.0187 0.00200	<0.00201 0.00201	<0.00202 0.00202	0.0338 0.0202	<0.00202 0.00202	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	07.21.2020 15:45	07.21.2020 15:45	07.21.2020 15:45	07.21.2020 15:45	07.21.2020 15:45	07.21.2020 15:45
	<i>Analyzed:</i>	07.21.2020 22:01	07.21.2020 22:20	07.21.2020 22:26	07.21.2020 22:32	07.21.2020 22:38	07.21.2020 22:44
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1770 24.9	1400 24.8	282 5.02	2240 25.0	32.7 5.04	11.1 4.96
TPH By SW8015 Mod	<i>Extracted:</i>	07.20.2020 13:00	07.20.2020 13:00	07.20.2020 13:00	07.20.2020 13:00	07.20.2020 13:00	07.20.2020 13:00
	<i>Analyzed:</i>	07.20.2020 18:15	07.20.2020 19:12	07.20.2020 19:31	07.20.2020 19:50	07.20.2020 20:09	07.20.2020 20:27
	<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		89.5 X 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9
Diesel Range Organics		4880 50.0	<49.9 49.9	<49.9 49.9	4070 49.8	<50.0 50.0	<49.9 49.9
Oil Range Hydrocarbons		<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9
Total TPH		4970 50.0	<49.9 49.9	<49.9 49.9	4070 49.8	<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 667586

Larson and Associates, Inc., Midland, TX

Project Name: Salado Draw Pad 10 Well 20

Project Id: 19-0180-02

Contact: Mark Larson

Project Location: NM

Date Received in Lab: Fri 07.17.2020 16:17

Report Date: 07.27.2020 16:18

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	667586-007	667586-008	667586-009			
	Field Id:	S-7	S-8	S-9			
	Depth:						
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	07.17.2020 11:35	07.17.2020 11:40	07.17.2020 11:45			
BTEX by EPA 8021B	Extracted:	07.26.2020 10:00	07.26.2020 11:30	07.26.2020 11:30			
	Analyzed:	07.26.2020 20:13	07.27.2020 01:43	07.27.2020 02:04			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201			
Benzene		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201			
Toluene		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201			
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201			
m,p-Xylenes		<0.00404 0.00404	<0.00400 0.00400	<0.00402 0.00402			
o-Xylene		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201			
Total Xylenes		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201			
Total BTEX		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201			
Chloride by EPA 300	Extracted:	07.21.2020 15:45	07.21.2020 15:45	07.22.2020 16:15			
	Analyzed:	07.21.2020 22:51	07.21.2020 22:57	07.23.2020 11:22			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		1650 25.0	1330 25.0	4520 X 24.8			
Chloride							
TPH By SW8015 Mod	Extracted:	07.20.2020 13:00	07.20.2020 13:00	07.20.2020 13:00			
	Analyzed:	07.20.2020 20:46	07.20.2020 21:05	07.20.2020 21:24			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		<50.0 50.0	<50.0 50.0	<49.9 49.9			
Gasoline Range Hydrocarbons		<50.0 50.0	<50.0 50.0	<49.9 49.9			
Diesel Range Organics		<50.0 50.0	<50.0 50.0	<49.9 49.9			
Oil Range Hydrocarbons		<50.0 50.0	<50.0 50.0	<49.9 49.9			
Total TPH		<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



Analytical Report 667586

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Salado Draw Pad 10 Well 20

19-0180-02

07.27.2020

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



07.27.2020

Project Manager: **Mark Larson**
Larson and Associates, Inc.
P. O. Box 50685
Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **667586**
Salado Draw Pad 10 Well 20
Project Address: NM

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) 667586. 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. 667586 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 667586****Larson and Associates, Inc., Midland, TX**

Salado Draw Pad 10 Well 20

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1	S	07.17.2020 11:30		667586-001
S-2	S	07.17.2020 11:40		667586-002
S-3	S	07.17.2020 11:50		667586-003
S-4	S	07.17.2020 12:00		667586-004
S-5	S	07.17.2020 11:25		667586-005
S-6	S	07.17.2020 11:30		667586-006
S-7	S	07.17.2020 11:35		667586-007
S-8	S	07.17.2020 11:40		667586-008
S-9	S	07.17.2020 11:45		667586-009

**CASE NARRATIVE****Client Name: Larson and Associates, Inc.****Project Name: Salado Draw Pad 10 Well 20**Project ID: 19-0180-02
Work Order Number(s): 667586Report Date: 07.27.2020
Date Received: 07.17.2020**Sample receipt non conformances and comments:****Sample receipt non conformances and comments per sample:**

None

Analytical non conformances and comments:

Batch: LBA-3132192 TPH By SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7707723-1-BKS.

Surrogate o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7707723-1-BLK.

Lab Sample ID 667586-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Gasoline Range Hydrocarbons recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 667586-001, -002, -003, -004, -005, -006, -007, -008, -009.

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

Batch: LBA-3132421 Chloride by EPA 300

Lab Sample ID 667832-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 667586-009.

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

Batch: LBA-3132650 BTEX by EPA 8021B

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

Samples affected are: 667586-001,667586-004,667586-002.



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-1
Lab Sample Id: 667586-001

Matrix: Soil
Date Collected: 07.17.2020 11:30

Date Received: 07.17.2020 16:17

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.21.2020 15:45

Basis: Wet Weight

Seq Number: 3132267

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1770	24.9	mg/kg	07.21.2020 22:01		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 07.20.2020 13:00

Basis: Wet Weight

Seq Number: 3132192

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	89.5	50.0	mg/kg	07.20.2020 18:15	X	1
Diesel Range Organics	C10C28DRO	4880	50.0	mg/kg	07.20.2020 18:15		1
Oil Range Hydrocarbons	PHCG2835	<50.0	50.0	mg/kg	07.20.2020 18:15	U	1
Total TPH	PHC635	4970	50.0	mg/kg	07.20.2020 18:15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-130	07.20.2020 18:15	
o-Terphenyl	84-15-1	124	%	70-130	07.20.2020 18:15	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-1
Lab Sample Id: 667586-001

Matrix: Soil
Date Collected: 07.17.2020 11:30

Date Received: 07.17.2020 16:17

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.26.2020 10:00

Basis: Wet Weight

Seq Number: 3132650

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00211	0.00200	mg/kg	07.26.2020 17:07		1
Toluene	108-88-3	0.00378	0.00200	mg/kg	07.26.2020 17:07		1
Ethylbenzene	100-41-4	0.00327	0.00200	mg/kg	07.26.2020 17:07		1
m,p-Xylenes	179601-23-1	0.00638	0.00401	mg/kg	07.26.2020 17:07		1
o-Xylene	95-47-6	0.00318	0.00200	mg/kg	07.26.2020 17:07		1
Total Xylenes	1330-20-7	0.00956	0.00200	mg/kg	07.26.2020 17:07		1
Total BTEX		0.0187	0.00200	mg/kg	07.26.2020 17:07		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	123	%	70-130	07.26.2020 17:07		
4-Bromofluorobenzene	460-00-4	210	%	70-130	07.26.2020 17:07	**	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-2
Lab Sample Id: 667586-002

Matrix: Soil
Date Collected: 07.17.2020 11:40

Date Received: 07.17.2020 16:17

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.21.2020 15:45

Basis: Wet Weight

Seq Number: 3132267

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1400	24.8	mg/kg	07.21.2020 22:20		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 07.20.2020 13:00

Basis: Wet Weight

Seq Number: 3132192

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	07.20.2020 19:12	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9	mg/kg	07.20.2020 19:12	U	1
Oil Range Hydrocarbons	PHCG2835	<49.9	49.9	mg/kg	07.20.2020 19:12	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	07.20.2020 19:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-130	07.20.2020 19:12	
o-Terphenyl	84-15-1	102	%	70-130	07.20.2020 19:12	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-2
Lab Sample Id: 667586-002

Matrix: Soil
Date Collected: 07.17.2020 11:40

Date Received: 07.17.2020 16:17

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.26.2020 10:00

Basis: Wet Weight

Seq Number: 3132650

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.26.2020 17:28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.26.2020 17:28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.26.2020 17:28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.26.2020 17:28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.26.2020 17:28	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.26.2020 17:28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.26.2020 17:28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	116	%	70-130	07.26.2020 17:28		
4-Bromofluorobenzene	460-00-4	138	%	70-130	07.26.2020 17:28	**	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-3
Lab Sample Id: 667586-003

Matrix: Soil
Date Collected: 07.17.2020 11:50

Date Received: 07.17.2020 16:17

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.21.2020 15:45

Basis: Wet Weight

Seq Number: 3132267

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	282	5.02	mg/kg	07.21.2020 22:26		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 07.20.2020 13:00

Basis: Wet Weight

Seq Number: 3132192

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	07.20.2020 19:31	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9	mg/kg	07.20.2020 19:31	U	1
Oil Range Hydrocarbons	PHCG2835	<49.9	49.9	mg/kg	07.20.2020 19:31	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	07.20.2020 19:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-130	07.20.2020 19:31	
o-Terphenyl	84-15-1	98	%	70-130	07.20.2020 19:31	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-3
Lab Sample Id: 667586-003

Matrix: Soil
Date Collected: 07.17.2020 11:50

Date Received: 07.17.2020 16:17

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.26.2020 10:00

Basis: Wet Weight

Seq Number: 3132650

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.26.2020 17:48	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.26.2020 17:48	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.26.2020 17:48	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	07.26.2020 17:48	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.26.2020 17:48	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.26.2020 17:48	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.26.2020 17:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	07.26.2020 17:48		
1,4-Difluorobenzene	540-36-3	115	%	70-130	07.26.2020 17:48		



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-4
Lab Sample Id: 667586-004

Matrix: Soil
Date Collected: 07.17.2020 12:00

Date Received: 07.17.2020 16:17

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.21.2020 15:45

Basis: Wet Weight

Seq Number: 3132267

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2240	25.0	mg/kg	07.21.2020 22:32		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 07.20.2020 13:00

Basis: Wet Weight

Seq Number: 3132192

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.8	49.8	mg/kg	07.20.2020 19:50	U	1
Diesel Range Organics	C10C28DRO	4070	49.8	mg/kg	07.20.2020 19:50		1
Oil Range Hydrocarbons	PHCG2835	<49.8	49.8	mg/kg	07.20.2020 19:50	U	1
Total TPH	PHC635	4070	49.8	mg/kg	07.20.2020 19:50		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	07.20.2020 19:50	
o-Terphenyl	84-15-1	100	%	70-130	07.20.2020 19:50	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-4
Lab Sample Id: 667586-004

Matrix: Soil
Date Collected: 07.17.2020 12:00

Date Received: 07.17.2020 16:17

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.26.2020 10:00

Basis: Wet Weight

Seq Number: 3132650

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0202	0.0202	mg/kg	07.26.2020 19:11	U	10
Toluene	108-88-3	0.0338	0.0202	mg/kg	07.26.2020 19:11		10
Ethylbenzene	100-41-4	<0.0202	0.0202	mg/kg	07.26.2020 19:11	U	10
m,p-Xylenes	179601-23-1	<0.0403	0.0403	mg/kg	07.26.2020 19:11	U	10
o-Xylene	95-47-6	<0.0202	0.0202	mg/kg	07.26.2020 19:11	U	10
Total Xylenes	1330-20-7	<0.0202	0.0202	mg/kg	07.26.2020 19:11	U	10
Total BTEX		0.0338	0.0202	mg/kg	07.26.2020 19:11		10
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	122	%	70-130	07.26.2020 19:11		
4-Bromofluorobenzene	460-00-4	138	%	70-130	07.26.2020 19:11	**	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-5
Lab Sample Id: 667586-005

Matrix: Soil
Date Collected: 07.17.2020 11:25

Date Received: 07.17.2020 16:17

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.21.2020 15:45

Basis: Wet Weight

Seq Number: 3132267

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.7	5.04	mg/kg	07.21.2020 22:38		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 07.20.2020 13:00

Basis: Wet Weight

Seq Number: 3132192

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	07.20.2020 20:09	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	07.20.2020 20:09	U	1
Oil Range Hydrocarbons	PHCG2835	<50.0	50.0	mg/kg	07.20.2020 20:09	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	07.20.2020 20:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-130	07.20.2020 20:09	
o-Terphenyl	84-15-1	94	%	70-130	07.20.2020 20:09	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-5
Lab Sample Id: 667586-005

Matrix: Soil
Date Collected: 07.17.2020 11:25

Date Received: 07.17.2020 16:17

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.26.2020 10:00

Basis: Wet Weight

Seq Number: 3132650

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.26.2020 19:32	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.26.2020 19:32	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.26.2020 19:32	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	07.26.2020 19:32	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.26.2020 19:32	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.26.2020 19:32	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.26.2020 19:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	07.26.2020 19:32	
4-Bromofluorobenzene	460-00-4	122	%	70-130	07.26.2020 19:32	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-6
Lab Sample Id: 667586-006

Matrix: Soil
Date Collected: 07.17.2020 11:30

Date Received: 07.17.2020 16:17

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.21.2020 15:45

Basis: Wet Weight

Seq Number: 3132267

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.1	4.96	mg/kg	07.21.2020 22:44		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 07.20.2020 13:00

Basis: Wet Weight

Seq Number: 3132192

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	07.20.2020 20:27	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9	mg/kg	07.20.2020 20:27	U	1
Oil Range Hydrocarbons	PHCG2835	<49.9	49.9	mg/kg	07.20.2020 20:27	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	07.20.2020 20:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-130	07.20.2020 20:27	
o-Terphenyl	84-15-1	100	%	70-130	07.20.2020 20:27	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-6
Lab Sample Id: 667586-006

Matrix: Soil
Date Collected: 07.17.2020 11:30

Date Received: 07.17.2020 16:17

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.26.2020 10:00

Basis: Wet Weight

Seq Number: 3132650

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.26.2020 19:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.26.2020 19:52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.26.2020 19:52	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.26.2020 19:52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.26.2020 19:52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.26.2020 19:52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.26.2020 19:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	70-130	07.26.2020 19:52	
1,4-Difluorobenzene	540-36-3	112	%	70-130	07.26.2020 19:52	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-7
Lab Sample Id: 667586-007

Matrix: Soil
Date Collected: 07.17.2020 11:35

Date Received: 07.17.2020 16:17

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.21.2020 15:45

Basis: Wet Weight

Seq Number: 3132267

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1650	25.0	mg/kg	07.21.2020 22:51		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 07.20.2020 13:00

Basis: Wet Weight

Seq Number: 3132192

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	07.20.2020 20:46	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	07.20.2020 20:46	U	1
Oil Range Hydrocarbons	PHCG2835	<50.0	50.0	mg/kg	07.20.2020 20:46	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	07.20.2020 20:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-130	07.20.2020 20:46	
o-Terphenyl	84-15-1	104	%	70-130	07.20.2020 20:46	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-7
Lab Sample Id: 667586-007

Matrix: Soil
Date Collected: 07.17.2020 11:35

Date Received: 07.17.2020 16:17

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.26.2020 10:00

Basis: Wet Weight

Seq Number: 3132650

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.26.2020 20:13	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.26.2020 20:13	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.26.2020 20:13	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	07.26.2020 20:13	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.26.2020 20:13	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.26.2020 20:13	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.26.2020 20:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	07.26.2020 20:13		
1,4-Difluorobenzene	540-36-3	110	%	70-130	07.26.2020 20:13		



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-8
Lab Sample Id: 667586-008

Matrix: Soil
Date Collected: 07.17.2020 11:40

Date Received: 07.17.2020 16:17

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.21.2020 15:45

Basis: Wet Weight

Seq Number: 3132267

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1330	25.0	mg/kg	07.21.2020 22:57		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 07.20.2020 13:00

Basis: Wet Weight

Seq Number: 3132192

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<50.0	50.0	mg/kg	07.20.2020 21:05	U	1
Diesel Range Organics	C10C28DRO	<50.0	50.0	mg/kg	07.20.2020 21:05	U	1
Oil Range Hydrocarbons	PHCG2835	<50.0	50.0	mg/kg	07.20.2020 21:05	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	07.20.2020 21:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-130	07.20.2020 21:05	
o-Terphenyl	84-15-1	99	%	70-130	07.20.2020 21:05	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-8
Lab Sample Id: 667586-008

Matrix: Soil
Date Collected: 07.17.2020 11:40

Date Received: 07.17.2020 16:17

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.26.2020 11:30

Basis: Wet Weight

Seq Number: 3132653

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.27.2020 01:43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.27.2020 01:43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.27.2020 01:43	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.27.2020 01:43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.27.2020 01:43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.27.2020 01:43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.27.2020 01:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	07.27.2020 01:43	
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.27.2020 01:43	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-9
Lab Sample Id: 667586-009

Matrix: Soil
Date Collected: 07.17.2020 11:45

Date Received: 07.17.2020 16:17

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 07.22.2020 16:15

Basis: Wet Weight

Seq Number: 3132421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4520	24.8	mg/kg	07.23.2020 11:22	X	5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 07.20.2020 13:00

Basis: Wet Weight

Seq Number: 3132192

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<49.9	49.9	mg/kg	07.20.2020 21:24	U	1
Diesel Range Organics	C10C28DRO	<49.9	49.9	mg/kg	07.20.2020 21:24	U	1
Oil Range Hydrocarbons	PHCG2835	<49.9	49.9	mg/kg	07.20.2020 21:24	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	07.20.2020 21:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-130	07.20.2020 21:24	
o-Terphenyl	84-15-1	101	%	70-130	07.20.2020 21:24	



Certificate of Analytical Results 667586

Larson and Associates, Inc., Midland, TX

Salado Draw Pad 10 Well 20

Sample Id: S-9
Lab Sample Id: 667586-009

Matrix: Soil
Date Collected: 07.17.2020 11:45

Date Received: 07.17.2020 16:17

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 07.26.2020 11:30

Basis: Wet Weight

Seq Number: 3132653

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.27.2020 02:04	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.27.2020 02:04	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.27.2020 02:04	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.27.2020 02:04	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.27.2020 02:04	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.27.2020 02:04	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.27.2020 02:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	07.27.2020 02:04	
1,4-Difluorobenzene	540-36-3	108	%	70-130	07.27.2020 02:04	

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.
Salado Draw Pad 10 Well 20

Analytical Method: Chloride by EPA 300

Seq Number: 3132267

MB Sample Id: 7707771-1-BLK

Matrix: Solid

LCS Sample Id: 7707771-1-BKS

Prep Method: E300P

Date Prep: 07.21.2020

LCSD Sample Id: 7707771-1-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	270	108	269	108	90-110	0	20	mg/kg	07.21.2020 19:58	

Analytical Method: Chloride by EPA 300

Seq Number: 3132421

MB Sample Id: 7707858-1-BLK

Matrix: Solid

LCS Sample Id: 7707858-1-BKS

Prep Method: E300P

Date Prep: 07.22.2020

LCSD Sample Id: 7707858-1-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	266	106	273	109	90-110	3	20	mg/kg	07.22.2020 21:16	

Analytical Method: Chloride by EPA 300

Seq Number: 3132267

Parent Sample Id: 667552-007

Matrix: Soil

MS Sample Id: 667552-007 S

Prep Method: E300P

Date Prep: 07.21.2020

MSD Sample Id: 667552-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4370	2510	7180	112	7080	108	90-110	1	20	mg/kg	07.21.2020 20:17	X

Analytical Method: Chloride by EPA 300

Seq Number: 3132267

Parent Sample Id: 667552-017

Matrix: Soil

MS Sample Id: 667552-017 S

Prep Method: E300P

Date Prep: 07.21.2020

MSD Sample Id: 667552-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3250	1250	4610	109	4570	106	90-110	1	20	mg/kg	07.21.2020 21:43	

Analytical Method: Chloride by EPA 300

Seq Number: 3132421

Parent Sample Id: 667586-009

Matrix: Soil

MS Sample Id: 667586-009 S

Prep Method: E300P

Date Prep: 07.22.2020

MSD Sample Id: 667586-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4520	1240	5830	106	5940	115	90-110	2	20	mg/kg	07.23.2020 11:28	X

Analytical Method: Chloride by EPA 300

Seq Number: 3132421

Parent Sample Id: 667832-001

Matrix: Soil

MS Sample Id: 667832-001 S

Prep Method: E300P

Date Prep: 07.22.2020

MSD Sample Id: 667832-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	29.2	249	299	108	300	109	90-110	0	20	mg/kg	07.22.2020 21:38	

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

Larson and Associates, Inc.
 Salado Draw Pad 10 Well 20
Analytical Method: TPH By SW8015 Mod

Seq Number: 3132192

MB Sample Id: 7707723-1-BLK

Matrix: Solid

LCS Sample Id: 7707723-1-BKS

Prep Method: SW8015P

Date Prep: 07.20.2020

LCSD Sample Id: 7707723-1-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	<50.0	1000	1020	102	941	94	70-130	8	20	mg/kg	07.20.2020 17:36	
Diesel Range Organics	<50.0	1000	1140	114	1050	105	70-130	8	20	mg/kg	07.20.2020 17:36	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag		LCSD %Rec	LCSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane	122		141	**		128			70-130	%	07.20.2020 17:36	
o-Terphenyl	131	**	127			123			70-130	%	07.20.2020 17:36	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3132192

Matrix: Solid

MB Sample Id: 7707723-1-BLK

Prep Method: SW8015P

Date Prep: 07.20.2020

Parameter	MB Result	Units	Analysis Date	Flag
Oil Range Hydrocarbons	<50.0	mg/kg	07.20.2020 17:17	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3132192

Matrix: Soil

Parent Sample Id: 667586-001

MS Sample Id: 667586-001 S

Prep Method: SW8015P

Date Prep: 07.20.2020

MSD Sample Id: 667586-001 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	89.5	996	777	69	857	77	70-130	10	20	mg/kg	07.20.2020 18:34	X
Diesel Range Organics	4880	996	5680	80	5710	83	70-130	1	20	mg/kg	07.20.2020 18:34	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			126			123			70-130	%	07.20.2020 18:34	
o-Terphenyl			128			99			70-130	%	07.20.2020 18:34	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3132650

Matrix: Solid

MB Sample Id: 7708102-1-BLK

LCS Sample Id: 7708102-1-BKS

Prep Method: SW5035A

Date Prep: 07.26.2020

LCSD Sample Id: 7708102-1-BSD

Parameter	MB	Spike	LCS	LCS	LCSD	LCSD	Limits	%RPD	RPD	Units	Analysis	Flag
	Result	Amount	Result	%Rec	Result	%Rec			Limit	Date		
Benzene	<0.00200	0.100	0.111	111	0.113	113	70-130	2	35	mg/kg	07.26.2020 12:21	
Toluene	<0.00200	0.100	0.101	101	0.101	101	70-130	0	35	mg/kg	07.26.2020 12:21	
Ethylbenzene	<0.00200	0.100	0.0966	97	0.0958	96	70-130	1	35	mg/kg	07.26.2020 12:21	
m,p-Xylenes	<0.00400	0.200	0.182	91	0.184	92	70-130	1	35	mg/kg	07.26.2020 12:21	
o-Xylene	<0.00200	0.100	0.0925	93	0.0916	92	70-130	1	35	mg/kg	07.26.2020 12:21	
Surrogate	MB	MB	LCS	LCS	LCSD	LCSD	Limits	Units	Analysis			
	%Rec	Flag	%Rec	Flag	%Rec	Flag			Date			
1,4-Difluorobenzene	108		101		100		70-130	%	07.26.2020 12:21			
4-Bromofluorobenzene	104		100		97		70-130	%	07.26.2020 12:21			

 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.
 Salado Draw Pad 10 Well 20
Analytical Method: BTEX by EPA 8021B

Seq Number: 3132653

MB Sample Id: 7708104-1-BLK

Matrix: Solid

LCS Sample Id: 7708104-1-BKS

Prep Method: SW5035A

Date Prep: 07.26.2020

LCSD Sample Id: 7708104-1-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	0.119	119	0.119	119	70-130	0	35	mg/kg	07.26.2020 23:18	
Toluene	<0.00200	0.100	0.101	101	0.107	107	70-130	6	35	mg/kg	07.26.2020 23:18	
Ethylbenzene	<0.00200	0.100	0.0966	97	0.104	104	70-130	7	35	mg/kg	07.26.2020 23:18	
m,p-Xylenes	<0.00400	0.200	0.184	92	0.201	101	70-130	9	35	mg/kg	07.26.2020 23:18	
o-Xylene	<0.00200	0.100	0.0903	90	0.0996	100	70-130	10	35	mg/kg	07.26.2020 23:18	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		103		101		70-130	%	07.26.2020 23:18
4-Bromofluorobenzene	121		97		104		70-130	%	07.26.2020 23:18

Analytical Method: BTEX by EPA 8021B

Seq Number: 3132650

Parent Sample Id: 667520-054

Matrix: Soil

MS Sample Id: 667520-054 S

Prep Method: SW5035A

Date Prep: 07.26.2020

MSD Sample Id: 667520-054 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	0.0967	97	0.0927	93	70-130	4	35	mg/kg	07.26.2020 13:20	
Toluene	<0.00199	0.0996	0.0884	89	0.0844	85	70-130	5	35	mg/kg	07.26.2020 13:20	
Ethylbenzene	<0.00199	0.0996	0.0838	84	0.0796	80	70-130	5	35	mg/kg	07.26.2020 13:20	
m,p-Xylenes	<0.00398	0.199	0.159	80	0.152	76	70-130	5	35	mg/kg	07.26.2020 13:20	
o-Xylene	<0.00199	0.0996	0.0786	79	0.0746	75	70-130	5	35	mg/kg	07.26.2020 13:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		102		70-130	%	07.26.2020 13:20
4-Bromofluorobenzene	102		98		70-130	%	07.26.2020 13:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3132653

Parent Sample Id: 667839-002

Matrix: Soil

MS Sample Id: 667839-002 S

Prep Method: SW5035A

Date Prep: 07.26.2020

MSD Sample Id: 667839-002 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	0.103	103	0.108	108	70-130	5	35	mg/kg	07.26.2020 23:59	
Toluene	<0.00199	0.0996	0.0944	95	0.102	102	70-130	8	35	mg/kg	07.26.2020 23:59	
Ethylbenzene	<0.00199	0.0996	0.0901	90	0.0982	98	70-130	9	35	mg/kg	07.26.2020 23:59	
m,p-Xylenes	<0.00398	0.199	0.173	87	0.190	95	70-130	9	35	mg/kg	07.26.2020 23:59	
o-Xylene	<0.00199	0.0996	0.0862	87	0.0945	95	70-130	9	35	mg/kg	07.26.2020 23:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		100		70-130	%	07.26.2020 23:59
4-Bromofluorobenzene	102		104		70-130	%	07.26.2020 23:59

 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

Marson & Associates, Inc.
Environmental Consultants

507 N. Marientfield, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 7/17/20 PAGE 1 OF 1
PO#: _____ LAB WORK ORDER#: _____
PROJECT LOCATION OR NAME: 544th draw And 10 well 20
LAI PROJECT #: 14-0180-02 COLLECTOR: TJ+DS

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

HCl

HNO₃H₂SO₄ ☐ NaOH ☐

ICE

UNPRESSERVED

PRESERVATION

ANALYSES

BTEX ☒ MTBE ☐TRPH 418.1 ☐ TPH 1005 ☐ TPH 1008 ☐GASOLINE MOD 8015 ☒DIESEL - MOD 8015 ☒OIL - MOD 8015 ☒VOC 8280 ☒SVOC 8270 ☒8081 PESTICIDES ☐ PAH 8270 ☐ HOLDPAH ☐8082 PCBS ☐ 8151 HERBICIDES ☐TCLP - METALS (RCRA) ☐ TCLP VOC ☐TCLP - PEST ☐ HERB ☐ Semi-VOC ☐TOTAL METALS (RCRA) ☐ OTHER LIST ☐LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐RCL ☐ TOX ☐ FLASHPOINT ☐TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐PH ☐ HEXAVALENT CHROMIUM ☐EXPLOSIVES ☐ PECTHLOATE ☐CHLORIDES ☒ ANIONS ☐ ALKALINITY ☐

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CHAIN-OF-CUSTODY

667586

No 1203

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.**Date/ Time Received:** 07.17.2020 04.17.00 PM**Work Order #:** 667586**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)?	5.7
#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: Jessica Kramer
Jessica Kramer

Date: 07.17.2020

Checklist reviewed by: Holly Taylor
Holly Taylor

Date: 07.22.2020

Appendix E
Photographs

Tracking Number: nRM1935746562
Delineation Report and Remediation Plan
SD EA 29 31 Fed Com P10 #018H
Lea County, New Mexico
January 21, 2021



Impacted area viewing southwest, July 17, 2020



Impacted area viewing southeast, July 17, 2020

Tracking Number: nRM1935746562
Delineation Report and Remediation Plan
SD EA 29 31 Fed Com P10 #018H
Lea County, New Mexico
January 21, 2021



Impacted area viewing south, July 17, 2020



Impacted area viewing west, July 17, 2020

Incident ID	nRM1935746562
District RP	
Facility ID	
Application ID	

Remediation Plan

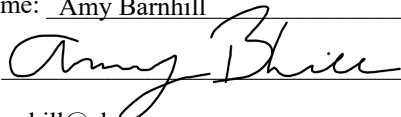
Remediation Plan Checklist: *Each of the following items must be included in the plan.*

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

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

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Amy Barnhill Title: Waste and Water Specialist
Signature:  Date: 2-11-2021
email: ABarnhill@chevron.com Telephone: 432-687-7108

OCD Only

Received by: Robert Hamlet Date: 6/29/2021

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

Signature:  Date: 6/29/2021

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 17771

CONDITIONS

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 17771
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	The Workplan/Remediation Plan is approved with the following conditions: with the groundwater bore (GWB-1) showing groundwater at approximately 86.36', floor samples will need to be delineated/excavated to 10,000 mg/kg for chlorides, 2,500 mg/kg (GRO+DRO+MRO) or 1,000 mg/kg for (GRO+DRO) for vertical delineation. Please make sure the edges/sidewalls are delineated to 600 mg/kg for chlorides and 100 mg/kg for TPH, ensuring the release did not leave the pad. Please collect confirmation samples, representing no more than 200 ft2.	6/29/2021