Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	nRM2010843574
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?	70.12 (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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	nRM2006453458
District RP	
Facility ID	
Application ID	

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

Printed Name: Amy Barnhill Title: Waste and Water Specialist

Signature: Date: 10-29-20

email: ABarnhill@chevron.com Telephone: 432-687-7108

OCD Only

Received by: Cristina Eads Date: 10/29/2020

State of New Mexico
Oil Conservation Division

Incident ID	nRM2010843574
District RP	
Facility ID	
Application ID	

Remediation Plan

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

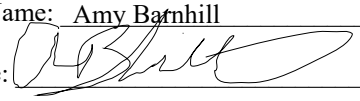
- [x] Detailed description of proposed remediation technique
- [x] Scaled sitemap with GPS coordinates showing delineation points
- [x] Estimated volume of material to be remediated
- [x] Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- [x] Proposed schedule for remediation (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

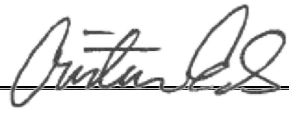
Signature:  Date: 10-29-20

email: ABarnhill@chevron.com Telephone: 432-687-7108

OCD Only

Received by: Cristina Eads Date: 10/29/2020

- [x] Approved
- [ ] Approved with Attached Conditions of Approval
- [ ] Denied
- [ ] Deferral Approved

Signature:  Date: 01/21/2021

Tracking Number: nRM2010843574
Delineation Report and Remediation Plan
SD CTB 19 Water Tank 1
Crude Oil and Produced Water Release
Eddy County, New Mexico

Latitude: N 32.035014°
Longitude: W -103.616825°

LAI Project No. 20-0107-13

October 26, 2020

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

This Page Intentionally Left Blank

Table of Contents

Tables

Figures

Appendices

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 1 for a produced water release at the SD CTB Water Tank 1 (Site) located in Unit D (NW/4, SW/4), Section 29, Township 26 South, Range 35 East in Eddy County, New Mexico. The geodetic position is North 32.035014° and West -103.616825°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

The release was discovered on March 16, 2020, at about 7:00AM MST. The release occurred due to a hole in Tank 1 inlet valve. The release was contained in the lined berm. Chevron reported that 1.5 barrels (bbls) of crude oil and 3.5 bbls of produced water was released and 5 bbls were recovered. The affected area measures approximately 1,826 square feet. The liner was visually inspected, and no defects were observed. The initial C-141 was submitted to OCD District 1 on April 1, 2020, and assigned incident number nRM2010843574. Appendix A presents the chevron spill calculation.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,178 feet above mean sea level (msl).
- The surface topography gradually decreases to the southwest.
- There are no surface water features within 1,000 feet of the Site.
- Karst data provided by the USGS describes the Site as “medium risk” potential.
- The soils are designated as Pyote soil and dune land, 0 to 3 percent slopes, consisting of 0 to 30 fine sand, underlain by 30 to 60 inches of a fine sandy loam.
- The geology is Quaternary age sand and silt, and locally includes cover sand.
- Groundwater occurs at a depth greater than 70.12 feet below ground surface (bgs) based on depth to groundwater measurements taken 72 hours after installing a boring (BH-1) on April 28, 2020, approximately 0.34 miles or 1,809 feet southeast from the Site.

Appendix B presents BH-1 boring Log.

1.3 Remediation Standards

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

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

2.0 DELINEATION

On May 7, 2020, LAI personnel used a stainless-steel hand auger to collect soil samples from five (5) locations outside of the lined containment (SP-1 through SP-5) to delineate the release. The samples were collected to approximately 1-foot bgs. The soil samples were delivered under chain of custody and preservation to Xenco Laboratories (Xenco) in Midland, Texas, which analyzed the samples for benzene, toluene, ethylbenzene and xylenes (BTEX) and total petroleum hydrocarbons (TPH), including gasoline range organics (C6-C12), diesel range organics (>C12-C28) and oil range organics (>C28-C35), and chloride by EPA SW-846 Methods 8021B and 8015M, and M300, respectively.

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

Sample ID, Depth (feet)	**Chloride Concentration (mg/Kg)**
SP-5, 0 to 0.5'	5,710
SP-5, 0.5 to 1'	2,300

On June 2, 2020, LAI personnel used a Geoprobe® 7822DT direct push rig to further delineate chloride at sample point SP-5. Soil samples were collected at 1, 3, 5, and 10 feet bgs depending on location and subsurface conditions. The samples were delivered under chain of custody and preservation to Xenco Laboratories (Xenco) and were analyzed for chloride by EPA Method 300. Chloride was delineated to 600 mg/Kg in sample SP-5, 3 feet (454 mg/Kg). All chloride values are below the OCD remediation limit (10,000 mg/Kg). Table 1 presents the soil sample analytical data summary. Figure 2 presents an aerial map showing the sample locations. Figure 4 presents an aerial map showing monitoring well BH-1 location. Appendix C presents the laboratory reports. Appendix D presents photograhs.

3.0 Remediation Plan

Chevron proposes the following remedial actions:

- Excavate soil from an area measuring approximately 154 square feet encompassing SP-5 to a depth of 2 feet bgs.
- Collect five (5) point composite bottom and sidewall confirmation soil samples every 200 square feet and analyze for BTEX, TPH and chloride.
- Backfill excavation with clean caliche on the production pad assuming achievement of OCD remediation levels.
- Prepare report with photographs for submittal to OCD District 1.

Figure 3 presents the proposed excavation areas.

Tables

Table 1
Soil Sample Analytical Data Summary
SD CTB 19 Water Tank 1
Eddy County, New Mexico
North 32° 2' 6.05", West 103° 37' 0.57"

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				**10**	**50**				**100 / 2,500**	**600 / 10,000**
SP-1	0 - 0.5	5/7/2020	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	45.7
	0.5 - 1	5/7/2020	In-Situ	<0.00199	0.00227	<49.9	<49.9	<49.9	<49.9	19.0
SP-2	0 - 0.5	5/7/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	50.3
	0.5 - 1	5/7/2020	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	18.4
SP-3	0 - 0.5	5/7/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	13.1
	0.5 - 1	5/7/2020	In-Situ	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	125
SP-4	0 - 0.5	5/7/2020	In-Situ	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	125
	0.5 - 1	5/7/2020	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	70.2
SP-5	0 - 0.5	5/7/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	**5,710**
	0.5 - 1	5/7/2020	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	**2,300**
	1	6/2/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	**4,210**
	3	6/2/2020	In-Situ	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	454
	5	6/2/2020	In-Situ	--	--	--	--	--	--	11.2
	10	6/2/2020	In-Situ	--	--	--	--	--	--	10.5
SP-6	0 - 0.5	5/21/2020	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	311
	0.5 - 1	5/21/2020	In-Situ	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	103

Notes: Analysis performed by Xenco Laboratories
Depth in feet below ground surface (bgs)
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)
<: denotes concentration less than analytical method reporting limit

Table 1
Soil Sample Analytical Data Summary
SD CTB 19 Water Tank 1
Eddy County, New Mexico
North 32° 2' 6.05", West 103° 37' 0.57"

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				**10**	**50**				**100 / 2,500**	**600 / 10,000**

Bold and Highlighted exceeds OCD remediation action limits

Figures

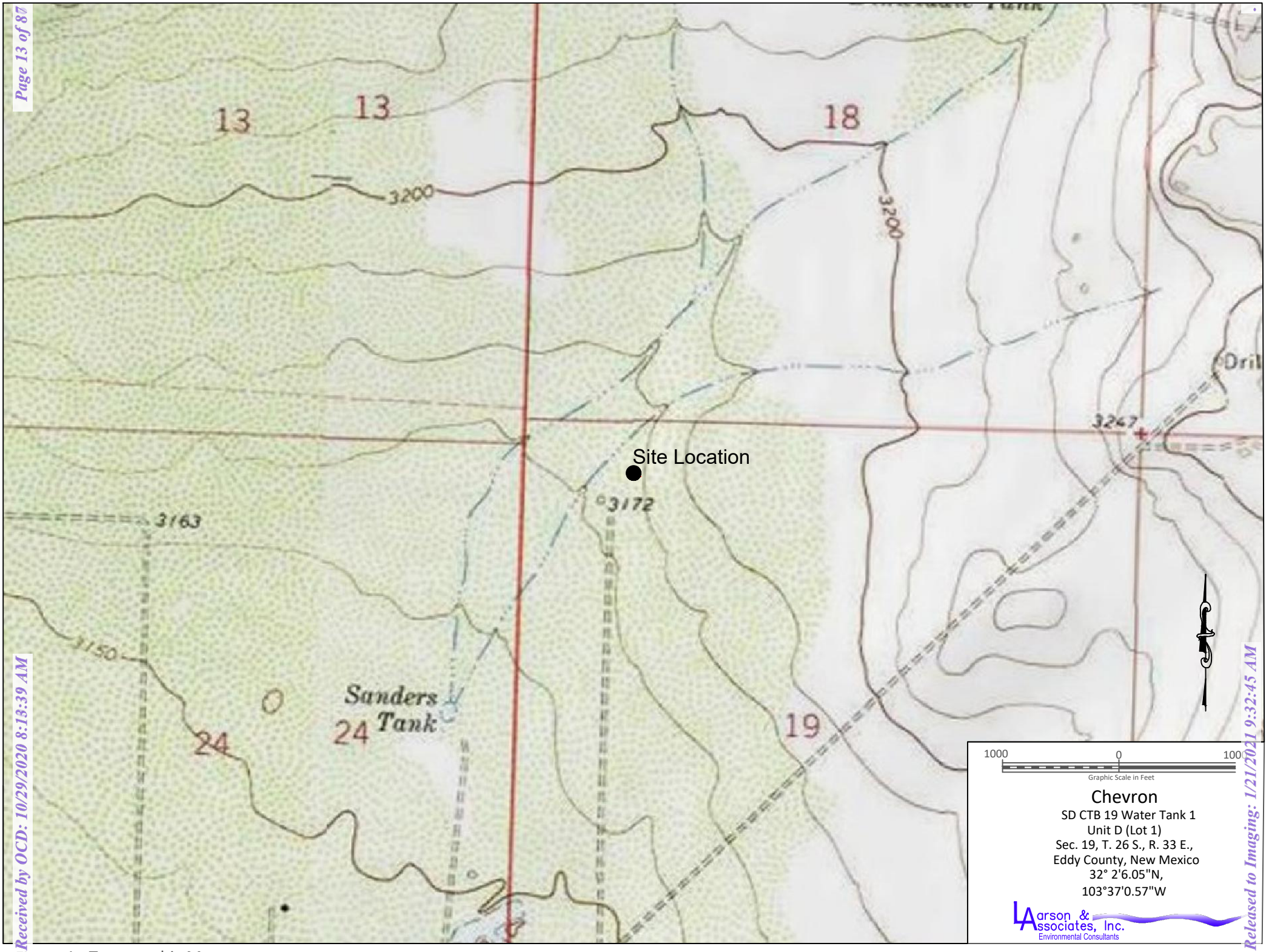


Figure 1 - Topographic Map

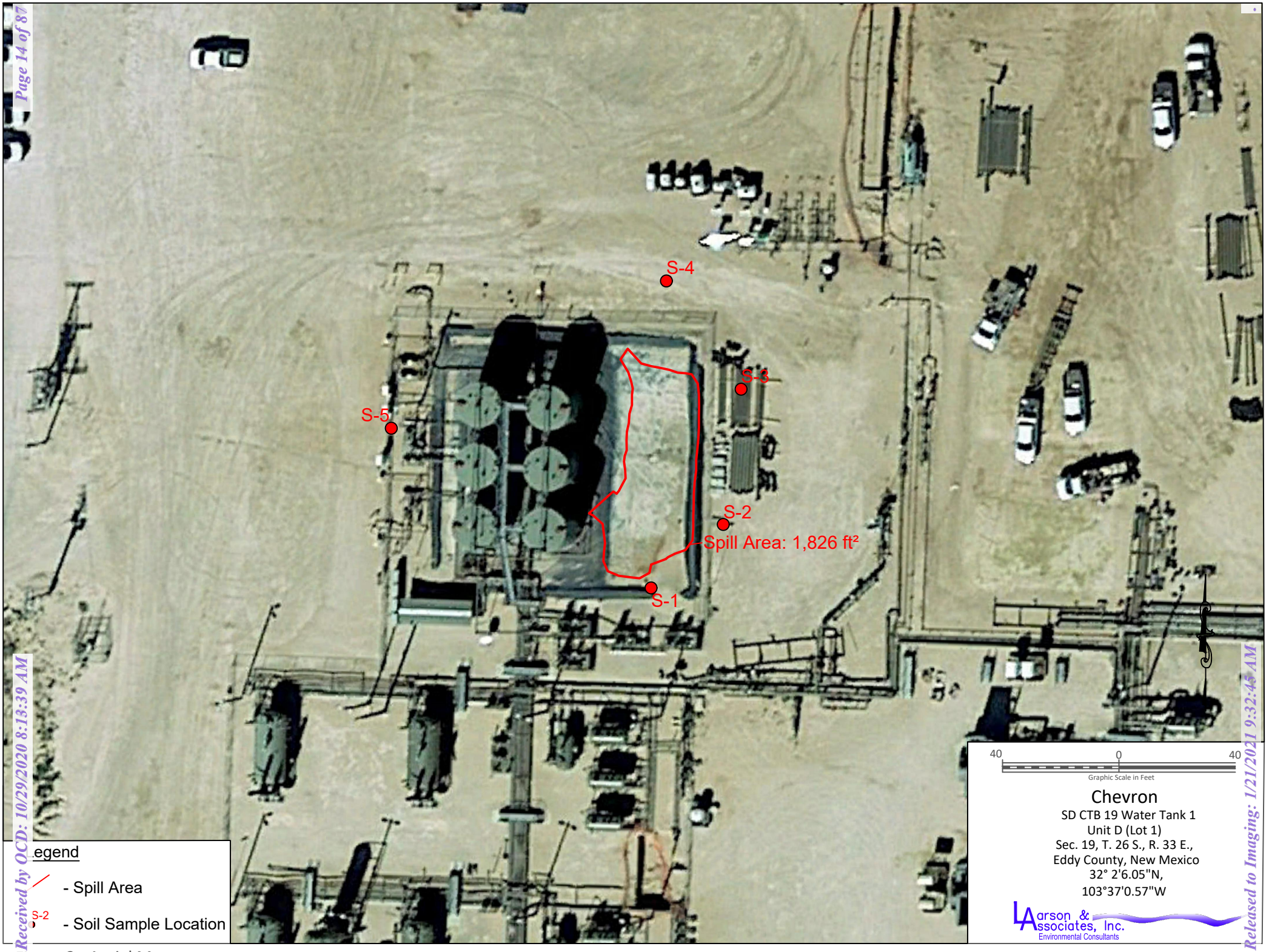


Figure 2 - Aerial Map

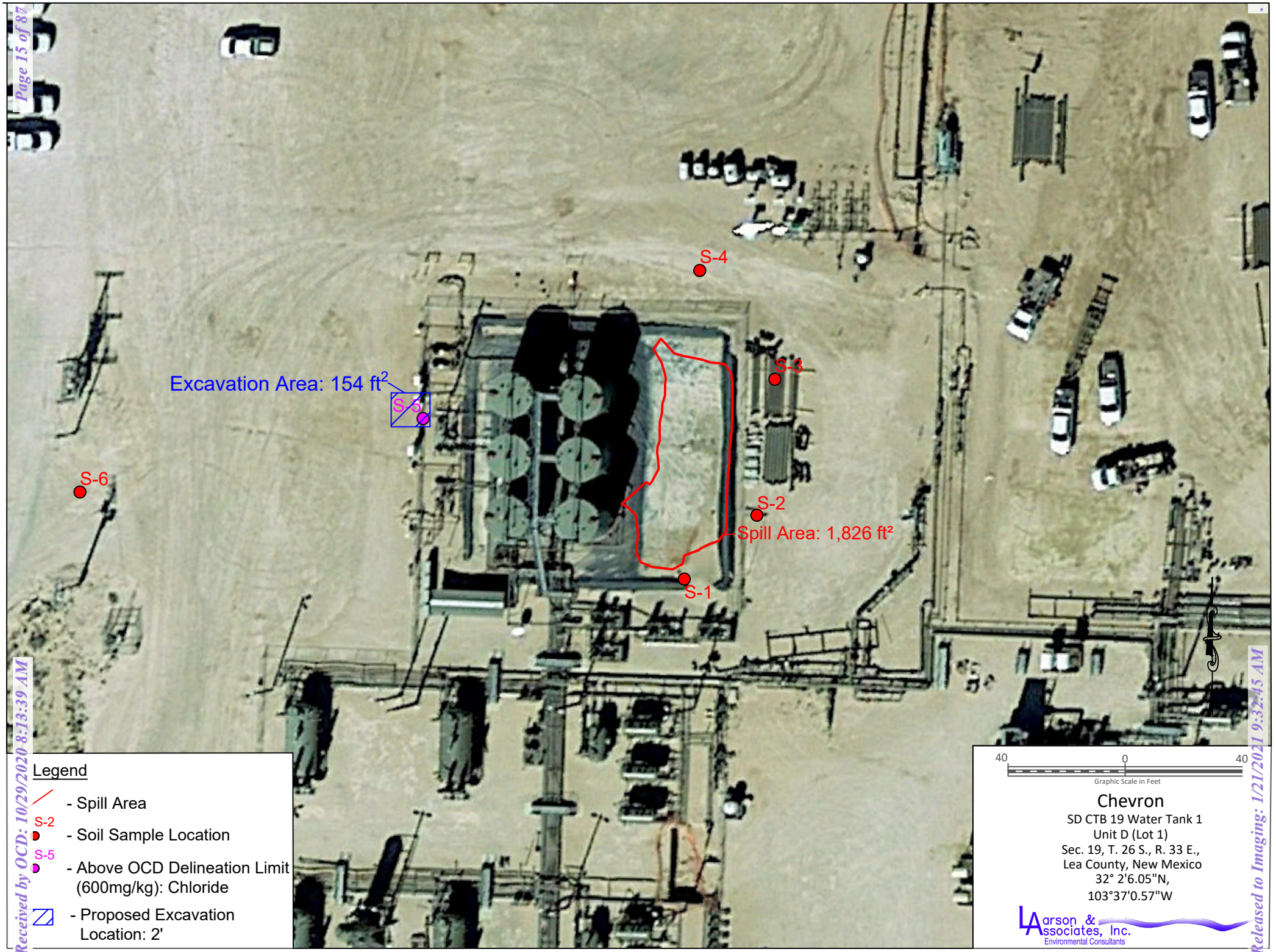


Figure 3 - Aerial Map Showing Proposed Excavation Location

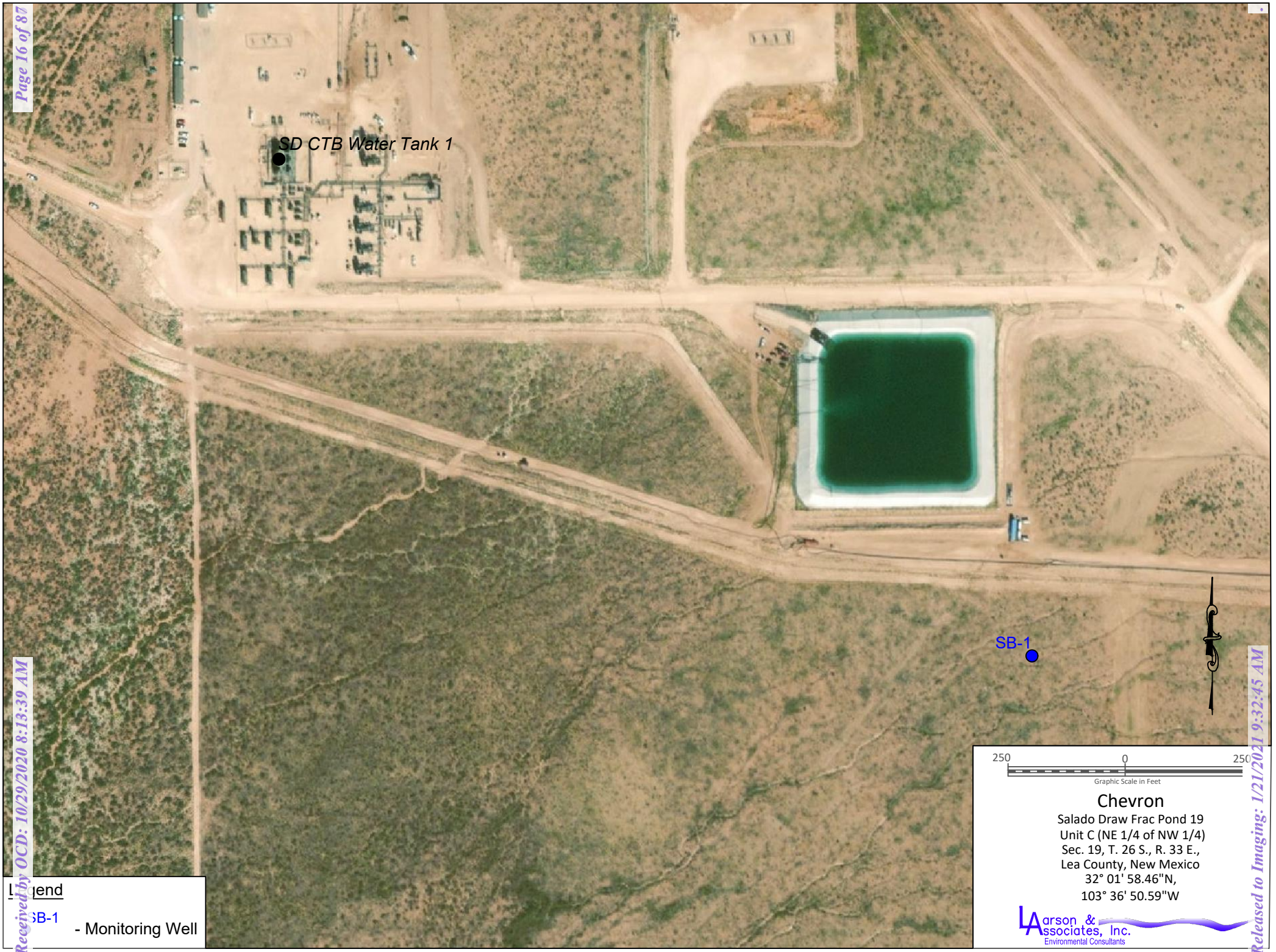


Figure 4 - Aerial Map Showing Monitoring Well and SD CTB Water Tank 1

Appendix A

Chevron Spill Calculation

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Incident Date			3/16/2020		
Incident Time			Start Time	End Time	
			7:00 AM	9:00 AM	
Location			CTB 19 Water Tank 1		
Area	Standing Liquid	In Soil	size	Oil Volume	Water Volume
1	1.5	0	40 X 20	1.5	3.56
2					
3					
4					
5					
			Total Fluid	1.5	3.5
			Fluid Recovered	Oil Volume	Water Volume
				1.5	3.5

Appendix B

Boring Log

BORING RECORD

Start: 12:20 MDT
Finish: 15:40

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Silty Sand, 5YR 5/4, Reddish Brown, Very Fine Grained Quartz Sand, Poorly Sorted, Dry	ML	
	6			
	10	2.5YR 5/4, Light Reddish Brown, Below 4 ft	Caliche	
	20	Caliche, 7.5YR 8/2, Pinkish White, Coarse Grained, Poorly Sorted, Dry		
	25			
	30	Silty Sand, 2.5YR 6/4, Light Reddish Brown, Fine Grained, Well Sorted, Dry	ML	
	40			
	50	Began Injecting Water		
	55			
	60	Caliche, 7.5YR 8/2, Pinkish White, Fine Grained, Dry	Caliche	
	66			
70.12' Depth of Water	70	Silty Sand, 7.5YR 4/2, Fine Grained Quartz Sand, Well Sorted, Dry	ML	
	80			
	90			
	100			
	110			
		TD: 110.75'		

PID READING
PPM X 1
2 4 6 8 10 12 14 16 18

SAMPLE NUMBER	PID READING	RECOVERY	DEPTH
1			6
2			25
3			55
4			66
5			110.75

REMARKS
BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

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)
NR NO RECOVERY

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 04-09-2020
BORING NUMBER : SB-01

JOB NUMBER : Chevron/19-0180-05
HOLE DIAMETER : 2"
LOCATION : Salado Draw Frac Pond 19
LAI GEOLOGIST : E. Chavez
DRILLING CONTRACTOR : Scarborough
DRILLING METHOD : Air Rotary

Appendix C

Laboratory Reports

Certificate of Analysis Summary 661008

Larson and Associates, Inc., Midland, TX

Project Name: Chevron-SD CTB 19

Project Id: 20-0107-13
Contact: Mark Larson
Project Location:

Date Received in Lab: Fri 05.08.2020 11:30
Report Date: 05.15.2020 13:52
Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	661008-001		661008-002		661008-003		661008-004		661008-005		661008-006	
	Field Id:	S-1 0-0.5'		S-1 0.5-1'		S-2 0-0.5'		S-2 0.5-1'		S-3 0-0.5'		S-3 0.5-1'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	05.07.2020 10:23		05.07.2020 10:27		05.07.2020 10:33		05.07.2020 10:35		05.07.2020 10:42		05.07.2020 10:47	
BTEX by EPA 8021B	***Extracted:***	05.12.2020 17:00		05.12.2020 17:00		05.12.2020 17:00		05.12.2020 08:00		05.12.2020 08:00		05.12.2020 08:00	
	Analyzed:	05.13.2020 04:39		05.13.2020 05:00		05.13.2020 05:20		05.13.2020 00:24		05.13.2020 00:44		05.13.2020 01:04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199
Toluene		<0.00201	0.00201	0.00227	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199
Ethylbenzene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199
m,p-Xylenes		<0.00402	0.00402	<0.00398	0.00398	<0.00401	0.00401	<0.00397	0.00397	<0.00399	0.00399	<0.00398	0.00398
o-Xylene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199
Total Xylenes		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199
Total BTEX		<0.00201	0.00201	0.00227	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00200	0.00200	<0.00199	0.00199
Chloride by EPA 300	***Extracted:***	05.08.2020 15:15		05.08.2020 15:15		05.08.2020 15:15		05.08.2020 15:15		05.08.2020 15:15		05.08.2020 15:15	
	Analyzed:	05.09.2020 18:21		05.09.2020 18:39		05.09.2020 18:45		05.09.2020 18:51		05.09.2020 18:57		05.09.2020 19:16	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		45.7	5.00	19.0	5.03	50.3	4.99	18.4	4.98	13.1	4.96	8.20	5.02
TPH by SW8015 Mod	***Extracted:***	05.08.2020 14:00		05.08.2020 14:00		05.08.2020 14:00		05.08.2020 14:00		05.08.2020 14:00		05.08.2020 14:00	
	Analyzed:	05.08.2020 14:35		05.08.2020 15:31		05.08.2020 15:50		05.08.2020 16:08		05.08.2020 16:26		05.08.2020 16:45	
	Units/RL:	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	<50.0	50.0	<49.9	49.9	<50.0	50.0
Diesel Range Organics (DRO)		<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0
Total TPH		<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0

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

Holly Taylor
Project Manager

Certificate of Analysis Summary 661008

Larson and Associates, Inc., Midland, TX

Project Name: Chevron-SD CTB 19

Project Id: 20-0107-13
Contact: Mark Larson
Project Location:

Date Received in Lab: Fri 05.08.2020 11:30
Report Date: 05.15.2020 13:52
Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	661008-007		661008-008		661008-009		661008-010					
	Field Id:	S-4 0-0.5'		S-4 0.5-1'		S-5 0-0.5'		S-5 0.5-1'					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	05.07.2020 11:03		05.07.2020 11:05		05.07.2020 11:21		05.07.2020 11:25					
BTEX by EPA 8021B	***Extracted:***	05.12.2020 08:00		05.12.2020 08:00		05.12.2020 08:00		05.12.2020 08:00					
	Analyzed:	05.13.2020 01:25		05.13.2020 01:45		05.13.2020 09:28		05.13.2020 09:48					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Toluene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Ethylbenzene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
m,p-Xylenes		<0.00397	0.00397	<0.00398	0.00398	<0.00399	0.00399	<0.00401	0.00401				
o-Xylene		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Total Xylenes		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Total BTEX		<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	05.08.2020 15:15		05.08.2020 15:15		05.08.2020 15:15		05.08.2020 15:15					
	Analyzed:	05.09.2020 19:22		05.09.2020 19:28		05.09.2020 19:34		05.09.2020 19:40					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		125	5.00	70.2	5.00	5710	50.0	2300	25.2				
TPH by SW8015 Mod	***Extracted:***	05.08.2020 14:00		05.08.2020 14:00		05.08.2020 14:00		05.08.2020 14:00					
	Analyzed:	05.08.2020 17:04		05.08.2020 17:22		05.08.2020 17:41		05.08.2020 18:00					
	Units/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				
Diesel Range Organics (DRO)		<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9				
Total TPH		<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9				

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

Holly Taylor
Project Manager

Analytical Report 661008

for

Larson and Associates, Inc.

Project Manager: Mark Larson

Chevron-SD CTB 19

20-0107-13

05.15.2020

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
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 (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

05.15.2020

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

Reference: XENCO Report No(s): **661008**
Chevron-SD CTB 19
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 XENCO Report Number(s) 661008. 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 XENCO Laboratories. 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. 661008 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 XENCO Laboratories 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

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 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1 0-0.5'	S	05.07.2020 10:23		661008-001
S-1 0.5-1'	S	05.07.2020 10:27		661008-002
S-2 0-0.5'	S	05.07.2020 10:33		661008-003
S-2 0.5-1'	S	05.07.2020 10:35		661008-004
S-3 0-0.5'	S	05.07.2020 10:42		661008-005
S-3 0.5-1'	S	05.07.2020 10:47		661008-006
S-4 0-0.5'	S	05.07.2020 11:03		661008-007
S-4 0.5-1'	S	05.07.2020 11:05		661008-008
S-5 0-0.5'	S	05.07.2020 11:21		661008-009
S-5 0.5-1'	S	05.07.2020 11:25		661008-010

CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: Chevron-SD CTB 19

Project ID: *20-0107-13*
Work Order Number(s): *661008*

Report Date: *05.15.2020*
Date Received: *05.08.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3125822 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered below QC limits. Samples affected are: 7703250-1-BLK,661008-006.

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-1 0-0.5'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-001	Date Collected:	05.07.2020 10:23		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.08.2020 15:15	Basis:	Wet Weight
Seq Number:	3125513				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**45.7**	5.00	mg/kg	05.09.2020 18:21		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.08.2020 14:00	Basis:	Wet Weight
Seq Number:	3125525				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.08.2020 14:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.08.2020 14:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.08.2020 14:35	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.08.2020 14:35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-130	05.08.2020 14:35	
o-Terphenyl	84-15-1	76	%	70-130	05.08.2020 14:35	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-1 0-0.5'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-001	Date Collected:	05.07.2020 10:23		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.12.2020 17:00	Basis:	Wet Weight
Seq Number:	3125729				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.13.2020 04:39	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.13.2020 04:39	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.13.2020 04:39	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.13.2020 04:39	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.13.2020 04:39	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.13.2020 04:39	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.13.2020 04:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	05.13.2020 04:39	
4-Bromofluorobenzene	460-00-4	111	%	70-130	05.13.2020 04:39	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-1 0.5-1'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-002	Date Collected:	05.07.2020 10:27		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.08.2020 15:15	Basis:	Wet Weight
Seq Number:	3125513				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**19.0**	5.03	mg/kg	05.09.2020 18:39		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.08.2020 14:00	Basis:	Wet Weight
Seq Number:	3125525				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.08.2020 15:31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	05.08.2020 15:31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.08.2020 15:31	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	05.08.2020 15:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-130	05.08.2020 15:31	
o-Terphenyl	84-15-1	80	%	70-130	05.08.2020 15:31	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-1 0.5-1'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-002	Date Collected:	05.07.2020 10:27		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.12.2020 17:00	Basis:	Wet Weight
Seq Number:	3125729				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.13.2020 05:00	U	1
Toluene	108-88-3	**0.00227**	0.00199	mg/kg	05.13.2020 05:00		1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.13.2020 05:00	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.13.2020 05:00	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.13.2020 05:00	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.13.2020 05:00	U	1
Total BTEX		**0.00227**	0.00199	mg/kg	05.13.2020 05:00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	108	%	70-130	05.13.2020 05:00	
4-Bromofluorobenzene	460-00-4	114	%	70-130	05.13.2020 05:00	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-2 0-0.5'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-003	Date Collected:	05.07.2020 10:33		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.08.2020 15:15	Basis:	Wet Weight
Seq Number:	3125513				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**50.3**	4.99	mg/kg	05.09.2020 18:45		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.08.2020 14:00	Basis:	Wet Weight
Seq Number:	3125525				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.08.2020 15:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.08.2020 15:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.08.2020 15:50	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.08.2020 15:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-130	05.08.2020 15:50	
o-Terphenyl	84-15-1	77	%	70-130	05.08.2020 15:50	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-2 0-0.5'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-003	Date Collected:	05.07.2020 10:33		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.12.2020 17:00	Basis:	Wet Weight
Seq Number:	3125729				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.13.2020 05:20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.13.2020 05:20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.13.2020 05:20	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.13.2020 05:20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.13.2020 05:20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.13.2020 05:20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.13.2020 05:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	05.13.2020 05:20	
4-Bromofluorobenzene	460-00-4	122	%	70-130	05.13.2020 05:20	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-2 0.5-1'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-004	Date Collected:	05.07.2020 10:35		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.08.2020 15:15	Basis:	Wet Weight
Seq Number:	3125513				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**18.4**	4.98	mg/kg	05.09.2020 18:51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.08.2020 14:00	Basis:	Wet Weight
Seq Number:	3125525				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.08.2020 16:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.08.2020 16:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.08.2020 16:08	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.08.2020 16:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-130	05.08.2020 16:08	
o-Terphenyl	84-15-1	78	%	70-130	05.08.2020 16:08	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-2 0.5-1'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-004	Date Collected:	05.07.2020 10:35		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.12.2020 08:00	Basis:	Wet Weight
Seq Number:	3125822				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.13.2020 00:24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.13.2020 00:24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.13.2020 00:24	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	05.13.2020 00:24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.13.2020 00:24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.13.2020 00:24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.13.2020 00:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	05.13.2020 00:24	
4-Bromofluorobenzene	460-00-4	90	%	70-130	05.13.2020 00:24	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-3 0-0.5'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-005	Date Collected:	05.07.2020 10:42		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.08.2020 15:15	Basis:	Wet Weight
Seq Number:	3125513				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.1**	4.96	mg/kg	05.09.2020 18:57		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.08.2020 14:00	Basis:	Wet Weight
Seq Number:	3125525				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.08.2020 16:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	05.08.2020 16:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.08.2020 16:26	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	05.08.2020 16:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-130	05.08.2020 16:26	
o-Terphenyl	84-15-1	76	%	70-130	05.08.2020 16:26	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-3 0-0.5'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-005	Date Collected:	05.07.2020 10:42		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.12.2020 08:00	Basis:	Wet Weight
Seq Number:	3125822				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.13.2020 00:44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.13.2020 00:44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.13.2020 00:44	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.13.2020 00:44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.13.2020 00:44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.13.2020 00:44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.13.2020 00:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	70-130	05.13.2020 00:44	
1,4-Difluorobenzene	540-36-3	105	%	70-130	05.13.2020 00:44	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-3 0.5-1'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-006	Date Collected:	05.07.2020 10:47		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.08.2020 15:15	Basis:	Wet Weight
Seq Number:	3125513				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8.20**	5.02	mg/kg	05.09.2020 19:16		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.08.2020 14:00	Basis:	Wet Weight
Seq Number:	3125525				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.08.2020 16:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.08.2020 16:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.08.2020 16:45	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.08.2020 16:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-130	05.08.2020 16:45	
o-Terphenyl	84-15-1	79	%	70-130	05.08.2020 16:45	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-3 0.5-1'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-006	Date Collected:	05.07.2020 10:47		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.12.2020 08:00	Basis:	Wet Weight
Seq Number:	3125822				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.13.2020 01:04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.13.2020 01:04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.13.2020 01:04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.13.2020 01:04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.13.2020 01:04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.13.2020 01:04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.13.2020 01:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	90	%	70-130	05.13.2020 01:04	
4-Bromofluorobenzene	460-00-4	63	%	70-130	05.13.2020 01:04	**

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-4 0-0.5'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-007	Date Collected:	05.07.2020 11:03		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.08.2020 15:15	Basis:	Wet Weight
Seq Number:	3125513				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**125**	5.00	mg/kg	05.09.2020 19:22		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.08.2020 14:00	Basis:	Wet Weight
Seq Number:	3125525				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.08.2020 17:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.08.2020 17:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.08.2020 17:04	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.08.2020 17:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-130	05.08.2020 17:04	
o-Terphenyl	84-15-1	77	%	70-130	05.08.2020 17:04	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-4 0-0.5'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-007	Date Collected:	05.07.2020 11:03		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.12.2020 08:00	Basis:	Wet Weight
Seq Number:	3125822				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.13.2020 01:25	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.13.2020 01:25	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.13.2020 01:25	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	05.13.2020 01:25	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.13.2020 01:25	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.13.2020 01:25	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.13.2020 01:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	05.13.2020 01:25	
4-Bromofluorobenzene	460-00-4	100	%	70-130	05.13.2020 01:25	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-4 0.5-1'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-008	Date Collected:	05.07.2020 11:05		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.08.2020 15:15	Basis:	Wet Weight
Seq Number:	3125513				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**70.2**	5.00	mg/kg	05.09.2020 19:28		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.08.2020 14:00	Basis:	Wet Weight
Seq Number:	3125525				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.08.2020 17:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	05.08.2020 17:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.08.2020 17:22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	05.08.2020 17:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-130	05.08.2020 17:22	
o-Terphenyl	84-15-1	79	%	70-130	05.08.2020 17:22	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-4 0.5-1'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-008	Date Collected:	05.07.2020 11:05		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.12.2020 08:00	Basis:	Wet Weight
Seq Number:	3125822				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.13.2020 01:45	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.13.2020 01:45	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.13.2020 01:45	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.13.2020 01:45	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.13.2020 01:45	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.13.2020 01:45	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.13.2020 01:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	05.13.2020 01:45	
4-Bromofluorobenzene	460-00-4	83	%	70-130	05.13.2020 01:45	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-5 0-0.5'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-009	Date Collected:	05.07.2020 11:21		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.08.2020 15:15	Basis:	Wet Weight
Seq Number:	3125513				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5710**	50.0	mg/kg	05.09.2020 19:34		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.08.2020 14:00	Basis:	Wet Weight
Seq Number:	3125525				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.08.2020 17:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.08.2020 17:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.08.2020 17:41	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.08.2020 17:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-130	05.08.2020 17:41	
o-Terphenyl	84-15-1	77	%	70-130	05.08.2020 17:41	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-5 0-0.5'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-009	Date Collected:	05.07.2020 11:21		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.12.2020 08:00	Basis:	Wet Weight
Seq Number:	3125822				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.13.2020 09:28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.13.2020 09:28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.13.2020 09:28	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.13.2020 09:28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.13.2020 09:28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.13.2020 09:28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.13.2020 09:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	05.13.2020 09:28	
4-Bromofluorobenzene	460-00-4	81	%	70-130	05.13.2020 09:28	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-5 0.5-1'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-010	Date Collected:	05.07.2020 11:25		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.08.2020 15:15	Basis:	Wet Weight
Seq Number:	3125513				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2300**	25.2	mg/kg	05.09.2020 19:40		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.08.2020 14:00	Basis:	Wet Weight
Seq Number:	3125525				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.08.2020 18:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	05.08.2020 18:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.08.2020 18:00	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	05.08.2020 18:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-130	05.08.2020 18:00	
o-Terphenyl	84-15-1	79	%	70-130	05.08.2020 18:00	

Certificate of Analytical Results 661008

Larson and Associates, Inc., Midland, TX

Chevron-SD CTB 19

Sample Id:	**S-5 0.5-1'**	Matrix:	Soil	Date Received:	05.08.2020 11:30
Lab Sample Id:	661008-010	Date Collected:	05.07.2020 11:25		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.12.2020 08:00	Basis:	Wet Weight
Seq Number:	3125822				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.13.2020 09:48	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.13.2020 09:48	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.13.2020 09:48	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.13.2020 09:48	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.13.2020 09:48	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.13.2020 09:48	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.13.2020 09:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.13.2020 09:48	
4-Bromofluorobenzene	460-00-4	102	%	70-130	05.13.2020 09:48	

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

QC Summary 661008

Larson and Associates, Inc.

Chevron-SD CTB 19

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3125513 — Matrix: Solid — Date Prep: 05.08.2020
MB Sample Id: 7702981-1-BLK — LCS Sample Id: 7702981-1-BKS — LCSD Sample Id: 7702981-1-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	244	98	244	98	90-110	0	20	mg/kg	05.09.2020 18:09	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3125513 — Matrix: Soil — Date Prep: 05.08.2020
Parent Sample Id: 660891-001 — MS Sample Id: 660891-001 S — MSD Sample Id: 660891-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4050	1250	5370	106	4880	66	90-110	10	20	mg/kg	05.09.2020 19:53	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3125513 — Matrix: Soil — Date Prep: 05.08.2020
Parent Sample Id: 661008-001 — MS Sample Id: 661008-001 S — MSD Sample Id: 661008-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	45.7	250	295	100	294	99	90-110	0	20	mg/kg	05.09.2020 18:27	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3125525 — Matrix: Solid — Date Prep: 05.08.2020
MB Sample Id: 7703020-1-BLK — LCS Sample Id: 7703020-1-BKS — LCSD Sample Id: 7703020-1-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	984	98	1000	100	70-130	2	20	mg/kg	05.08.2020 13:57	
Diesel Range Organics (DRO)	<50.0	1000	1020	102	1040	104	70-130	2	20	mg/kg	05.08.2020 13:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		101		106		70-130	%	05.08.2020 13:57
o-Terphenyl	86		87		94		70-130	%	05.08.2020 13:57

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3125525 — Matrix: Solid — Date Prep: 05.08.2020
MB Sample Id: 7703020-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	05.08.2020 13:39	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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

Final 1.000

QC Summary 661008

Larson and Associates, Inc.

Chevron-SD CTB 19

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3125525 Matrix: Soil Date Prep: 05.08.2020
Parent Sample Id: 661008-001 MS Sample Id: 661008-001 S MSD Sample Id: 661008-001 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	878	88	925	93	70-130	5	20	mg/kg	05.08.2020 18:18	
Diesel Range Organics (DRO)	<49.9	997	888	89	934	93	70-130	5	20	mg/kg	05.08.2020 18:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		106		70-130	%	05.08.2020 18:18
o-Terphenyl	86		91		70-130	%	05.08.2020 18:18

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3125822 Matrix: Solid Date Prep: 05.12.2020
MB Sample Id: 7703250-1-BLK LCS Sample Id: 7703250-1-BKS LCSD Sample Id: 7703250-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.107	107	0.0944	94	70-130	13	35	mg/kg	05.12.2020 22:06	
Toluene	<0.00200	0.100	0.0890	89	0.0944	94	70-130	6	35	mg/kg	05.12.2020 22:06	
Ethylbenzene	<0.00200	0.100	0.0851	85	0.0960	96	70-130	12	35	mg/kg	05.12.2020 22:06	
m,p-Xylenes	<0.00400	0.200	0.158	79	0.182	91	70-130	14	35	mg/kg	05.12.2020 22:06	
o-Xylene	<0.00200	0.100	0.0789	79	0.0918	92	70-130	15	35	mg/kg	05.12.2020 22:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		103		103		70-130	%	05.12.2020 22:06
4-Bromofluorobenzene	64	**	98		110		70-130	%	05.12.2020 22:06

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3125729 Matrix: Solid Date Prep: 05.12.2020
MB Sample Id: 7703198-1-BLK LCS Sample Id: 7703198-1-BKS LCSD Sample Id: 7703198-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.101	101	0.109	109	70-130	8	35	mg/kg	05.12.2020 09:12	
Toluene	<0.00200	0.100	0.108	108	0.116	116	70-130	7	35	mg/kg	05.12.2020 09:12	
Ethylbenzene	<0.00200	0.100	0.0971	97	0.105	105	70-130	8	35	mg/kg	05.12.2020 09:12	
m,p-Xylenes	<0.00400	0.200	0.195	98	0.213	107	70-130	9	35	mg/kg	05.12.2020 09:12	
o-Xylene	<0.00200	0.100	0.0950	95	0.103	103	70-130	8	35	mg/kg	05.12.2020 09:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		105		106		70-130	%	05.12.2020 09:12
4-Bromofluorobenzene	106		104		109		70-130	%	05.12.2020 09:12

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 661008

Larson and Associates, Inc.

Chevron-SD CTB 19

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3125822 Matrix: Soil Date Prep: 05.12.2020
Parent Sample Id: 661008-004 MS Sample Id: 661008-004 S MSD Sample Id: 661008-004 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	0.0990	0.0952	96	0.0885	89	70-130	7	35	mg/kg	05.12.2020 22:46	
Toluene	<0.00198	0.0990	0.0931	94	0.0867	87	70-130	7	35	mg/kg	05.12.2020 22:46	
Ethylbenzene	<0.00198	0.0990	0.0934	94	0.0872	88	70-130	7	35	mg/kg	05.12.2020 22:46	
m,p-Xylenes	<0.00396	0.198	0.176	89	0.165	83	70-130	6	35	mg/kg	05.12.2020 22:46	
o-Xylene	<0.00198	0.0990	0.0897	91	0.0849	85	70-130	5	35	mg/kg	05.12.2020 22:46	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		106		70-130	%	05.12.2020 22:46
4-Bromofluorobenzene	118		112		70-130	%	05.12.2020 22:46

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3125729 Matrix: Soil Date Prep: 05.12.2020
Parent Sample Id: 660830-020 MS Sample Id: 660830-020 S MSD Sample Id: 660830-020 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	0.111	111	0.102	103	70-130	8	35	mg/kg	05.12.2020 20:28	
Toluene	<0.00200	0.0998	0.105	105	0.0996	100	70-130	5	35	mg/kg	05.12.2020 20:28	
Ethylbenzene	<0.00200	0.0998	0.0911	91	0.0861	87	70-130	6	35	mg/kg	05.12.2020 20:28	
m,p-Xylenes	<0.00399	0.200	0.166	83	0.169	85	70-130	2	35	mg/kg	05.12.2020 20:28	
o-Xylene	<0.00200	0.0998	0.0875	88	0.0838	84	70-130	4	35	mg/kg	05.12.2020 20:28	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		110		70-130	%	05.12.2020 20:28
4-Bromofluorobenzene	105		106		70-130	%	05.12.2020 20:28

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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 1086

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 5/8/2020 PAGE 1 OF 1

PO#: LAB WORK ORDER#:

PROJECT LOCATION OR NAME: Chevron - SD CTB 19

LAI PROJECT #: 20-0107-13 COLLECTOR: DW

Data Reported to:

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX + MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015	DIESEL - MOD 8015	OIL - MOD 8015	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TBLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE + ANIONS ☐ ALKALINITY ☐	FIELD NOTES
S-1 0-0.5'		5/7/20	10:23	S	1				X		X	X	X	X	X													X		
S-1 0.5-1'			10:27																											
S-2 0-0.5'			10:33																											
S-2 0.5-1'			10:35																											
S-3 0-0.5'			10:42																											
S-3 0.5-1'			10:47																											
S-4 0-0.5'			11:03																											
S-4 0.5-1'			11:05																											
S-5 0-0.5'			11:21																											
S-5 0.5-1'			11:25																											

TOTAL 10

RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
Rachel Owen	5-8-20 / 1800	1130
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)

LABORATORY: Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP: 5.9/5.6 THERM#: 121
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 05.08.2020 11.30.00 AM

Work Order #: 661008

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R9

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.6	
#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: 05.08.2020
Brianna Teel

Checklist reviewed by: Holly Taylor Date: 05.11.2020
Holly Taylor

Certificate of Analysis Summary 662742

Larson and Associates, Inc., Midland, TX

Project Name: SD CTB 19 Water Tank #1

Project Id: 20-0107-13
Contact: Mark Larson
Project Location:

Date Received in Lab: Thu 05.28.2020 08:25
Report Date: 06.01.2020 10:43
Project Manager: Holly Taylor

Analysis Requested									
	Lab Id:	662742-001		662742-002					
	Field Id:	S-6 (0.5')		S-6 (1')					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	05.21.2020 13:05		05.21.2020 13:10					
BTEX by EPA 8021B	***Extracted:***	05.28.2020 13:00		05.28.2020 13:00					
	Analyzed:	05.28.2020 15:00		05.28.2020 15:20					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00199	0.00199				
Toluene		<0.00200	0.00200	<0.00199	0.00199				
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199				
m,p-Xylenes		<0.00401	0.00401	<0.00398	0.00398				
o-Xylene		<0.00200	0.00200	<0.00199	0.00199				
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199				
Total BTEX		<0.00200	0.00200	<0.00199	0.00199				
Chloride by EPA 300	***Extracted:***	05.28.2020 11:30		05.28.2020 11:30					
	Analyzed:	05.28.2020 15:48		05.28.2020 15:55					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		311	24.9	103	4.99				
TPH by SW8015 Mod	***Extracted:***	05.28.2020 11:00		05.28.2020 11:00					
	Analyzed:	05.28.2020 12:10		05.28.2020 13:07					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.1	50.1				
Diesel Range Organics (DRO)		<50.0	50.0	<50.1	50.1				
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.1	50.1				
Total TPH		<50.0	50.0	<50.1	50.1				

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

Holly Taylor
Project Manager

Analytical Report 662742

for

Larson and Associates, Inc.

Project Manager: Mark Larson

SD CTB 19 Water Tank #1

20-0107-13

06.01.2020

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
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 (T104704534-20-6)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

06.01.2020

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

Reference: XENCO Report No(s): **662742**
SD CTB 19 Water Tank #1
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 XENCO Report Number(s) 662742. 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 XENCO Laboratories. 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. 662742 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 XENCO Laboratories 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

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 662742

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-6 (0.5')	S	05.21.2020 13:05		662742-001
S-6 (1')	S	05.21.2020 13:10		662742-002

CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: SD CTB 19 Water Tank #1

Project ID:	*20-0107-13*	Report Date:	*06.01.2020*
Work Order Number(s):	*662742*	Date Received:	*05.28.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 662742

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank #1

Sample Id:	**S-6 (0.5')**	Matrix:	Soil	Date Received:	05.28.2020 08:25
Lab Sample Id:	662742-001	Date Collected:	05.21.2020 13:05		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	05.28.2020 11:30	Basis:	Wet Weight
Seq Number:	3127297				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**311**	24.9	mg/kg	05.28.2020 15:48		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.28.2020 11:00	Basis:	Wet Weight
Seq Number:	3127302				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.28.2020 12:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.28.2020 12:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.28.2020 12:10	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.28.2020 12:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-130	05.28.2020 12:10	
o-Terphenyl	84-15-1	125	%	70-130	05.28.2020 12:10	

Certificate of Analytical Results 662742

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank #1

Sample Id:	**S-6 (0.5')**	Matrix:	Soil	Date Received:	05.28.2020 08:25
Lab Sample Id:	662742-001	Date Collected:	05.21.2020 13:05		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.28.2020 13:00	Basis:	Wet Weight
Seq Number:	3127296				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.28.2020 15:00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.28.2020 15:00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.28.2020 15:00	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.28.2020 15:00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.28.2020 15:00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.28.2020 15:00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.28.2020 15:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	05.28.2020 15:00	
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.28.2020 15:00	

Certificate of Analytical Results 662742

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank #1

Sample Id:	**S-6 (1')**	Matrix:	Soil	Date Received:	05.28.2020 08:25
Lab Sample Id:	662742-002	Date Collected:	05.21.2020 13:10		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	05.28.2020 11:30	Basis:	Wet Weight
Seq Number:	3127297				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**103**	4.99	mg/kg	05.28.2020 15:55		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	05.28.2020 11:00	Basis:	Wet Weight
Seq Number:	3127302				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.28.2020 13:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	05.28.2020 13:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.28.2020 13:07	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	05.28.2020 13:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-130	05.28.2020 13:07	
o-Terphenyl	84-15-1	113	%	70-130	05.28.2020 13:07	

Certificate of Analytical Results 662742

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank #1

Sample Id:	**S-6 (1')**	Matrix:	Soil	Date Received:	05.28.2020 08:25
Lab Sample Id:	662742-002	Date Collected:	05.21.2020 13:10		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	05.28.2020 13:00	Basis:	Wet Weight
Seq Number:	3127296				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.28.2020 15:20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.28.2020 15:20	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.28.2020 15:20	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.28.2020 15:20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.28.2020 15:20	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.28.2020 15:20	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.28.2020 15:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	05.28.2020 15:20	
4-Bromofluorobenzene	460-00-4	116	%	70-130	05.28.2020 15:20	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 662742

Larson and Associates, Inc.

SD CTB 19 Water Tank #1

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3127297 — Matrix: Solid — Date Prep: 05.28.2020
MB Sample Id: 7704240-1-BLK — LCS Sample Id: 7704240-1-BKS — LCSD Sample Id: 7704240-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	245	98	246	98	90-110	0	20	mg/kg	05.28.2020 14:08	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3127297 — Matrix: Soil — Date Prep: 05.28.2020
Parent Sample Id: 662591-034 — MS Sample Id: 662591-034 S — MSD Sample Id: 662591-034 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.9	250	272	102	273	103	90-110	0	20	mg/kg	05.28.2020 14:28	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3127297 — Matrix: Soil — Date Prep: 05.28.2020
Parent Sample Id: 662742-002 — MS Sample Id: 662742-002 S — MSD Sample Id: 662742-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	103	250	371	107	372	108	90-110	0	20	mg/kg	05.28.2020 16:01	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3127302 — Matrix: Solid — Date Prep: 05.28.2020
MB Sample Id: 7704293-1-BLK — LCS Sample Id: 7704293-1-BKS — LCSD Sample Id: 7704293-1-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	1160	116	1170	117	70-130	1	20	mg/kg	05.28.2020 11:32	
Diesel Range Organics (DRO)	<50.0	1000	1190	119	1180	118	70-130	1	20	mg/kg	05.28.2020 11:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		90		130		70-130	%	05.28.2020 11:32
o-Terphenyl	129		128		129		70-130	%	05.28.2020 11:32

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3127302 — Matrix: Solid — Date Prep: 05.28.2020
MB Sample Id: 7704293-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	05.28.2020 11:13	

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

QC Summary 662742

Larson and Associates, Inc.

SD CTB 19 Water Tank #1

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3127302 | Matrix: Soil | Date Prep: 05.28.2020
Parent Sample Id: 662742-001 | MS Sample Id: 662742-001 S | MSD Sample Id: 662742-001 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)	<50.2	1000	976	98	990	99	70-130	1	20	mg/kg	05.28.2020 12:29	
Diesel Range Organics (DRO)	<50.2	1000	924	92	936	94	70-130	1	20	mg/kg	05.28.2020 12:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		125		70-130	%	05.28.2020 12:29
o-Terphenyl	110		110		70-130	%	05.28.2020 12:29

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5035A
Seq Number: 3127296 | Matrix: Solid | Date Prep: 05.28.2020
MB Sample Id: 7704322-1-BLK | LCS Sample Id: 7704322-1-BKS | LCSD Sample Id: 7704322-1-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	0.108	108	0.104	104	70-130	4	35	mg/kg	05.28.2020 12:57	
Toluene	<0.00200	0.100	0.108	108	0.107	107	70-130	1	35	mg/kg	05.28.2020 12:57	
Ethylbenzene	<0.00200	0.100	0.102	102	0.100	100	70-130	2	35	mg/kg	05.28.2020 12:57	
m,p-Xylenes	<0.00400	0.200	0.205	103	0.204	102	70-130	0	35	mg/kg	05.28.2020 12:57	
o-Xylene	<0.00200	0.100	0.0980	98	0.0980	98	70-130	0	35	mg/kg	05.28.2020 12:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		104		70-130	%	05.28.2020 12:57
4-Bromofluorobenzene	96		99		104		70-130	%	05.28.2020 12:57

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5035A
Seq Number: 3127296 | Matrix: Soil | Date Prep: 05.28.2020
Parent Sample Id: 662742-001 | MS Sample Id: 662742-001 S | MSD Sample Id: 662742-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.108	109	0.102	103	70-130	6	35	mg/kg	05.28.2020 13:38	
Toluene	<0.00199	0.0994	0.110	111	0.102	103	70-130	8	35	mg/kg	05.28.2020 13:38	
Ethylbenzene	<0.00199	0.0994	0.103	104	0.0952	96	70-130	8	35	mg/kg	05.28.2020 13:38	
m,p-Xylenes	<0.00398	0.199	0.208	105	0.193	97	70-130	7	35	mg/kg	05.28.2020 13:38	
o-Xylene	<0.00199	0.0994	0.100	101	0.0930	94	70-130	7	35	mg/kg	05.28.2020 13:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		108		70-130	%	05.28.2020 13:38
4-Bromofluorobenzene	107		104		70-130	%	05.28.2020 13:38

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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

Final 1.000

№ 1165

CHAIN-OF-CUSTODY

660742

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 5/27/20 PAGE 1 OF 7
PO#: ______ LAB WORK ORDER#: ______
PROJECT LOCATION OR NAME: SD CTB 19 WATER TANK # 1
LAI PROJECT #: 20-0107-13 COLLECTOR: DS

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	OIL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TBLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐		FIELD NOTES
S-6 (0.5')		5/21/20	1305	S	1				X		X		X	X	X													X		
S-6 (1')		5/21/20	1310	S	1				X		X		X	X	X													X		

TOTAL 2

RELINQUISHED BY:(Signature) [signature]	DATE/TIME 5/26/20 0845	RECEIVED BY: (Signature) [signature]
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)

LABORATORY: XENCO

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

LABORATORY USE ONLY:
RECEIVING TEMP: 3.6/3.3 THERM#: 89
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # ______
☐ HAND DELIVERED

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 05.28.2020 08.25.00 AM

Work Order #: 662742

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R9

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3.3	
#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: 05.28.2020

Brianna Teel

Checklist reviewed by: Holly Taylor Date: 05.29.2020

Holly Taylor

Certificate of Analysis Summary 663258

Larson and Associates, Inc., Midland, TX

Project Name: SD CTB 19 Water Tank

Project Id: 20-0107-13
Contact: Mark Larson
Project Location:

Date Received in Lab: Wed 06.03.2020 08:43
Report Date: 06.11.2020 14:19
Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	663258-001		663258-002		663258-003		663258-004					
	Field Id:	S5 1'		S5 3'		S5 5'		S5 10'					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	06.02.2020 11:40		06.02.2020 11:41		06.02.2020 12:10		06.02.2020 12:11					
BTEX by EPA 8021B	***Extracted:***	06.08.2020 17:00		06.08.2020 17:00									
	Analyzed:	06.09.2020 11:00		06.09.2020 11:20									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.00200	0.00200	<0.00198	0.00198								
Toluene		<0.00200	0.00200	<0.00198	0.00198								
Ethylbenzene		<0.00200	0.00200	<0.00198	0.00198								
m,p-Xylenes		<0.00401	0.00401	<0.00397	0.00397								
o-Xylene		<0.00200	0.00200	<0.00198	0.00198								
Total Xylenes		<0.00200	0.00200	<0.00198	0.00198								
Total BTEX		<0.00200	0.00200	<0.00198	0.00198								
Chloride by EPA 300	***Extracted:***	06.03.2020 16:30		06.03.2020 16:30		06.03.2020 16:30		06.03.2020 16:30					
	Analyzed:	06.03.2020 17:20		06.03.2020 17:04		06.03.2020 17:25		06.03.2020 17:30					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		4210	50.3	454	5.00	11.2	4.96	10.5	5.00				
TPH by SW8015 Mod	***Extracted:***	06.03.2020 16:30		06.03.2020 16:30		06.03.2020 16:30							
	Analyzed:	06.04.2020 16:33		06.04.2020 16:56		06.04.2020 17:39							
	Units/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						
Diesel Range Organics (DRO)		<50.0	50.0	<50.0	50.0	<49.9	49.9						
Motor Oil Range Hydrocarbons (MRO)		<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						

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

Holly Taylor
Project Manager

Analytical Report 663258

for

Larson and Associates, Inc.

Project Manager: Mark Larson

SD CTB 19 Water Tank

20-0107-13

06.11.2020

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-23), 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)

06.11.2020

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

Reference: XENCO Report No(s): **663258**
SD CTB 19 Water Tank
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 XENCO Report Number(s) 663258. 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 XENCO Laboratories. 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. 663258 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 XENCO Laboratories 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

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 663258

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S5 1'	S	06.02.2020 11:40		663258-001
S5 3'	S	06.02.2020 11:41		663258-002
S5 5'	S	06.02.2020 12:10		663258-003
S5 10'	S	06.02.2020 12:11		663258-004

CASE NARRATIVE

Client Name: Larson and Associates, Inc.

Project Name: SD CTB 19 Water Tank

Project ID: *20-0107-13*
Work Order Number(s): *663258*

Report Date: *06.11.2020*
Date Received: *06.03.2020*

Sample receipt non conformances and comments:

6/8/2020 BTEX added to samples 001 and 002. TPH removed from sample 004. Per Robert Nelson (email). HT

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 663258

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank

Sample Id: **S5 1'** Matrix: Soil Date Received:06.03.2020 08:43

Lab Sample Id: 663258-001 Date Collected: 06.02.2020 11:40

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE % Moisture:

Analyst: CHE Date Prep: 06.03.2020 16:30 Basis: Wet Weight

Seq Number: 3127894

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4210**	50.3	mg/kg	06.03.2020 17:20		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Tech: DVM % Moisture:

Analyst: ARM Date Prep: 06.03.2020 16:30 Basis: Wet Weight

Seq Number: 3128011

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	06.04.2020 16:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	06.04.2020 16:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	06.04.2020 16:33	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	06.04.2020 16:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-130	06.04.2020 16:33	
o-Terphenyl	84-15-1	108	%	70-130	06.04.2020 16:33	

Certificate of Analytical Results 663258

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank

Sample Id:	**S5 1'**	Matrix:	Soil	Date Received:	06.03.2020 08:43
Lab Sample Id:	663258-001	Date Collected:	06.02.2020 11:40		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	06.08.2020 17:00	Basis:	Wet Weight
Seq Number:	3128453				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.09.2020 11:00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.09.2020 11:00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.09.2020 11:00	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.09.2020 11:00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.09.2020 11:00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.09.2020 11:00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.09.2020 11:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.09.2020 11:00	
1,4-Difluorobenzene	540-36-3	108	%	70-130	06.09.2020 11:00	

Certificate of Analytical Results 663258

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank

Sample Id:	**S5 3'**	Matrix:	Soil	Date Received:	06.03.2020 08:43
Lab Sample Id:	663258-002	Date Collected:	06.02.2020 11:41		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.03.2020 16:30	Basis:	Wet Weight
Seq Number:	3127894				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**454**	5.00	mg/kg	06.03.2020 17:04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	06.03.2020 16:30	Basis:	Wet Weight
Seq Number:	3128011				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	06.04.2020 16:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	06.04.2020 16:56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	06.04.2020 16:56	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	06.04.2020 16:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	06.04.2020 16:56	
o-Terphenyl	84-15-1	104	%	70-130	06.04.2020 16:56	

Certificate of Analytical Results 663258

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank

Sample Id:	**S5 3'**	Matrix:	Soil	Date Received:	06.03.2020 08:43
Lab Sample Id:	663258-002	Date Collected:	06.02.2020 11:41		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	06.08.2020 17:00	Basis:	Wet Weight
Seq Number:	3128453				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.09.2020 11:20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.09.2020 11:20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.09.2020 11:20	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.09.2020 11:20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.09.2020 11:20	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.09.2020 11:20	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.09.2020 11:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	108	%	70-130	06.09.2020 11:20	
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.09.2020 11:20	

Certificate of Analytical Results 663258

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank

Sample Id:	**S5 5'**	Matrix:	Soil	Date Received:	06.03.2020 08:43
Lab Sample Id:	663258-003	Date Collected:	06.02.2020 12:10		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.03.2020 16:30	Basis:	Wet Weight
Seq Number:	3127894				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.2**	4.96	mg/kg	06.03.2020 17:25		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	06.03.2020 16:30	Basis:	Wet Weight
Seq Number:	3128011				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	06.04.2020 17:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	06.04.2020 17:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	06.04.2020 17:39	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	06.04.2020 17:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-130	06.04.2020 17:39	
o-Terphenyl	84-15-1	103	%	70-130	06.04.2020 17:39	

Certificate of Analytical Results 663258

Larson and Associates, Inc., Midland, TX

SD CTB 19 Water Tank

Sample Id:	**S5 10'**	Matrix:	Soil	Date Received:	06.03.2020 08:43
Lab Sample Id:	663258-004	Date Collected:	06.02.2020 12:11		
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	06.03.2020 16:30	Basis:	Wet Weight
Seq Number:	3127894				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**10.5**	5.00	mg/kg	06.03.2020 17:30		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

QC Summary 663258

Larson and Associates, Inc.

SD CTB 19 Water Tank

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3127894 — Matrix: Solid — Date Prep: 06.03.2020
MB Sample Id: 7704702-1-BLK — LCS Sample Id: 7704702-1-BKS — LCSD Sample Id: 7704702-1-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	244	98	244	98	90-110	0	20	mg/kg	06.03.2020 16:54	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3127894 — Matrix: Soil — Date Prep: 06.03.2020
Parent Sample Id: 663258-002 — MS Sample Id: 663258-002 S — MSD Sample Id: 663258-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	454	250	681	91	685	92	90-110	1	20	mg/kg	06.03.2020 17:10	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3127894 — Matrix: Soil — Date Prep: 06.03.2020
Parent Sample Id: 663307-001 — MS Sample Id: 663307-001 S — MSD Sample Id: 663307-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	188	253	421	92	416	90	90-110	1	20	mg/kg	06.03.2020 18:20	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3128011 — Matrix: Solid — Date Prep: 06.03.2020
MB Sample Id: 7704701-1-BLK — LCS Sample Id: 7704701-1-BKS — LCSD Sample Id: 7704701-1-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	863	86	810	81	70-130	6	20	mg/kg	06.04.2020 10:26	
Diesel Range Organics (DRO)	<50.0	1000	889	89	840	84	70-130	6	20	mg/kg	06.04.2020 10:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		104		99		70-130	%	06.04.2020 10:26
o-Terphenyl	110		109		102		70-130	%	06.04.2020 10:26

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3128011 — Matrix: Solid — Date Prep: 06.03.2020
MB Sample Id: 7704701-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	06.04.2020 10:04	

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

QC Summary 663258

Larson and Associates, Inc.

SD CTB 19 Water Tank

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3128011 Matrix: Soil Date Prep: 06.03.2020
Parent Sample Id: 663026-001 MS Sample Id: 663026-001 S MSD Sample Id: 663026-001 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	948	95	909	91	70-130	4	20	mg/kg	06.05.2020 07:46	
Diesel Range Organics (DRO)	<49.9	998	899	90	858	86	70-130	5	20	mg/kg	06.05.2020 07:46	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		106		70-130	%	06.05.2020 07:46
o-Terphenyl	105		98		70-130	%	06.05.2020 07:46

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3128453 Matrix: Solid Date Prep: 06.08.2020
MB Sample Id: 7705003-1-BLK LCS Sample Id: 7705003-1-BKS LCSD Sample Id: 7705003-1-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	0.0952	95	0.0951	95	70-130	0	35	mg/kg	06.09.2020 08:33	
Toluene	<0.00200	0.100	0.0987	99	0.0993	99	70-130	1	35	mg/kg	06.09.2020 08:33	
Ethylbenzene	<0.00200	0.100	0.0927	93	0.0932	93	70-130	1	35	mg/kg	06.09.2020 08:33	
m,p-Xylenes	<0.00400	0.200	0.186	93	0.187	94	70-130	1	35	mg/kg	06.09.2020 08:33	
o-Xylene	<0.00200	0.100	0.0887	89	0.0899	90	70-130	1	35	mg/kg	06.09.2020 08:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		104		105		70-130	%	06.09.2020 08:33
4-Bromofluorobenzene	98		100		106		70-130	%	06.09.2020 08:33

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3128453 Matrix: Soil Date Prep: 06.08.2020
Parent Sample Id: 663258-001 MS Sample Id: 663258-001 S MSD Sample Id: 663258-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.104	104	0.106	106	70-130	2	35	mg/kg	06.09.2020 09:14	
Toluene	<0.00199	0.0996	0.103	103	0.103	103	70-130	0	35	mg/kg	06.09.2020 09:14	
Ethylbenzene	<0.00199	0.0996	0.0940	94	0.0906	91	70-130	4	35	mg/kg	06.09.2020 09:14	
m,p-Xylenes	<0.00398	0.199	0.187	94	0.181	91	70-130	3	35	mg/kg	06.09.2020 09:14	
o-Xylene	<0.00199	0.0996	0.0907	91	0.0878	88	70-130	3	35	mg/kg	06.09.2020 09:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		107		70-130	%	06.09.2020 09:14
4-Bromofluorobenzene	104		110		70-130	%	06.09.2020 09:14

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference 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

№1178

06/3258

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 6/03/20 PAGE 1 OF 1

PO#: LAB WORK ORDER#:

PROJECT LOCATION OR NAME: SD CTB 19 Water Tank

LAI PROJECT #: 20-0107-13 COLLECTOR: DS/TJ

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐	TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐	PAH 8270 ☐	HOLDPAH ☐	8081 PESTICIDES ☐	8151 HERBICIDES ☐	8082 PCBS ☐	TBLP - METALS (RCRA) ☐	TCLP VOC ☐	TCLP - PEST ☐	HERB ☐	Semi-VOC ☐	TOTAL METALS (RCRA) ☐	OTHER LIST ☐	LEAD - TOTAL ☐	D.W. 200.8 ☐	TCLP ☐	RCI ☐	TOX ☐	FLASHPOINT ☐	TDS ☐	TSS ☐	% MOISTURE ☐	pH ☐	CYANIDE ☐	HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐	PECHLORATE ☐	CHLORIDE ☒	ANIONS ☐	ALKALINITY ☐	FIELD NOTES
SS 1'		6/02/20	1140	S	1				X						X	X	X																								X			
SS 3'		6/02/20	1141	S	1				X						X	X	X																								X			
SS 5'		6/02/20	1210	S	1				X						X	X	X																								X			
SS 10'		6/02/20	1211	S	1				X																																X			
TOTAL																																														

RELINQUISHED BY:(Signature) DATE/TIME 6/3 0845 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

LABORATORY: Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP: 1.6 1.3 THERM#: R9
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☑ NOT USED
☐ CARRIER BILL #
☑ HAND DELIVERED

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 06.03.2020 08.43.00 AM

Work Order #: 663258

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R9

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.3
#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: 06.03.2020

Brianna Teel

Checklist reviewed by: Holly Taylor Date: 06.04.2020

Holly Taylor

Appendix D

Photographs

nRM2010843574
Delineation and Remediation Plan
Chevron USA, Inc., SD CTB 19 Water Tank 1
Produced Water Release
October 26, 2020

Spill area where release was contained within the lined berm viewing northwest

Spill area viewing southeast / south

nRM2010843574
Delineation and Remediation Plan
Chevron USA, Inc., SD CTB 19 Water Tank 1
Produced Water Release
October 26, 2020

Spill area viewing south / southwest

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 10909

CONDITIONS OF APPROVAL

Operator:			OGRID:	Action Number:	Action Type:
CHEVRON U S A INC	6301 Deauville Blvd	Midland, TX79706	4323	10909	C-141

OCD Reviewer	Condition
ceads	None