Tracking Number: nAPP2300450334
Amended Delineation Report and Remediation Plan
Cotton Hills 23 26 27 Federal COM #001H
Crude Oil and Produced Water Release
Eddy County, New Mexico

Latitude: N 32.034322°
Longitude: W -104.159295°

LAI Project No. 23-0102-01

December 11, 2023

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
Project Manager

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1.0 INTRODUCTION

Larson & Associates, Inc. (LAI), has prepared this amended delineation report and remediation plan on behalf of Chevron USA. Inc. (Chevron) for submittal to the New Mexico Oil Conservation Division (NMOCD) District 2 for a crude oil and produced water release at the Cotton Hills 23 26 27 Federal COM #001H (Site) located in Unit B (NW/NE), Section 23, Township 26 South, Range 27 East in Eddy County New Mexico. The geodetic position is North 32.034322° and West -104.159295°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

The release was discovered on December 25, 2022, due to a pinhole leak in a 3-inch ball valve resulting in the release of 11.43 barrels (bbls) of crude oil and 11.428 bbls of produced water, with no fluid recovered. On January 6, 2023, Chevron submitted the initial C-141 to the NMOCD District 2 and was assigned incident number nAPP2300450334. Appendix A presents Chevron initial C-141 and spill calculations.

1.1.1 NMOCD Communications

On November 21, 2023, Chevron received notification from the NMOCD regarding the report titled "*Tracking Number: nAPP2300450334, Delineation Report and Remediation Plan, Cotton Hills 23 26 27 Federal COM #001H, Crude Oil and Produced Water Release, Eddy County, New Mexico, June 5, 2023*" stating that the deferral request for contaminated soil adjacent to an aboveground pipeline riser was denied. The denial stated the following "*Due to the shallow depth of groundwater and the presence of hydrcarbons, a deferral cannot be granted. A hydrovac/shovel would need to be used to safely remove the contaminated soil around equipment and pipelines. The release will need to be remediated to the strictest closure criteria limits (600 mg/Kg, Chlorides, 100 mg/Kg TPH, etc.). If you feel the depth to groundwater is >50', a shallow borehole can be drilled to 51' allowing for verification of the depth. If water is not visible after reaching bottom-hole and waiting 72 hours, the OCD will accept this as evidence. OCD would need the driller's log. Chevron has until 12/21/2023 to submit a revised remediation workplan*". Appendix E presents the NMOCD communications.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,119 feet above mean sea level (msl).
- The surface topography gradually decreases to the southeast.
- 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 Reeves-Reagan loams, 0 to 3 percent slopes, consisting of 8 inches of loam, 24 inches of clay loam and 28 inches of gypsiferous material, in descending order.
- The surface geology is late Permian-aged Salado Formation consisting of evaporitic sequences predominantly controlled by halite deposition, and locally includes cover sand. Caliche material makes up the pad surface.

- Groundwater occurs at approximately 27.55 feet below ground surface (bgs) based on depth a groundwater measurement in 2004 according to the USGS National Water Information System website from a well located approximately 0.64 miles southwest of the Site.

Appendix B presents USGS data depicting karst risk potential map.

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 100 mg/Kg
- Chloride 600 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 February 9, 2023, LAI personnel used a stainless-steel hand auger to collect soil samples from five (5) locations inside of the spill area (S-1 through S-5) and in each cardinal direction (north, south, east, and west) outside of the spill (S-6 through S-9). The samples were collected from depths of approximately 0 - 0.5 and 0.5 - 1-foot bgs. The soil samples were delivered under chain of custody and preservation to Permian Basin Environmental Laboratories (PBEL), a National Environmental Laboratory Accreditation Conference (NELAC) accredited laboratory, located 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) by EPA SW-846 Methods 8021B and 8015M, respectively and chloride, by EPA Method 300.

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

Sample ID	Depth (Feet)	TPH (mg/Kg)	Chloride (mg/Kg)
S-2	0.5 - 1	112	609
S-3	0.5 - 1	55.9	3,740

On April 3, 2023, LAI personnel used a Geoprobe® Model 7822DT direct push rig to further delineate sample locations S-2 and S-3. The samples were collected at one (1), three (3), five (5), and ten (10) feet bgs. PBEL analyzed the samples for BTEX, TPH and chloride. The laboratory results demonstrate the release was delineated according to the NMOCD remediation and closure requirements (19.15.29.12 NMAC Table 1) for groundwater less than 50 feet bgs. Figure 2 presents an aerial map showing the sample locations. Appendix C presents the laboratory reports. Appendix D presents the photographic documentation.

3.0 REVISED REMEDIATION PLAN

Chevron proposes the following remedial actions:

- Excavate soil from an area measuring approximately 957 square feet encompassing S-1, S-3, S-4, and S-5 to a depth of one (1) foot bgs.
- Excavate soil from an area measuring approximately 101 square feet encompassing S-2 to a depth of two (2) feet bgs.
- Hydrovac excavate soil from an area measuring approximately 275 encompassing above ground production equipment.
- Collect five (5) point composite bottom and sidewall confirmation soil samples every 200 square feet and analyze for BTEX, TPH and chloride to confirm concentrations below the NMOCD closure criteria in Table 1 (19.15.29 NMAC) for groundwater less than 50 feet bgs.
- Chevron will notify NMOCD through its online portal at least 48-hours prior to collecting final confirmation samples per NMOCD requirements. Backfill excavation with clean caliche assuming achievement of NMOCD remediation levels.
- Prepare report with photographs for submittal to NMOCD District 2.

Figure 3 presents the proposed excavation areas.

Tables

Table 1

Soil Sample Analytical Data Summary

Chevron - Cotton Hills 23 26 27 Federal COM #001H

Eddy County, New Mexico

32° 03' 03.60" N, 104° 09' 33.43" W

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)
Delineation Limit:				**10**	**50**				**100**	**600**
S-1	0 - 0.5	2/9/2023	In-Situ	<0.00202	0.00638	<49.8	1,070	<49.8	**1,070**	125
	0.5 - 1	2/9/2023	In-Situ	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	245
S-2	0 - 0.5	2/9/2023	In-Situ	<0.00200	0.00368	157.0	615.0	<49.9	**772**	267
	0.5 - 1	2/9/2023	In-Situ	<0.00201	<0.00402	<49.8	112	<49.8	**112**	**609**
	1	4/3/2023	In-Situ	0.00115	0.00230	<28.7	432	96	**528**	246
	3	4/3/2023	In-Situ	0.00128	0.00256	<32.1	<32.1	<32.1	<32.1	146
	5	4/3/2023	In-Situ	0.00123	0.00247	<30.9	<30.9	<30.9	<30.9	214
	10	4/3/2023	In-Situ	0.0012	0.00241	<30.1	<30.1	<30.1	<30.1	15
S-3	0 - 0.5	2/9/2023	In-Situ	<0.00202	0.812	650	1,850	<49.8	**2,500**	101
	0.5 - 1	2/9/2023	In-Situ	<0.00199	<0.00398	<49.9	55.9	<49.9	55.9	**3,740**
	1	4/3/2023	In-Situ	0.00112	0.00225	<28.1	<28.1	<28.1	<28.1	25.9
	3	4/3/2023	In-Situ	0.00125	0.0025	<31.2	<31.2	<31.2	<31.2	107
	5	4/3/2023	In-Situ	0.0012	0.00241	<30.1	<30.1	<30.1	<30.1	109
	10	4/3/2023	In-Situ	0.00118	0.00235	<29.4	<29.4	<29.4	<29.4	35.9
S-4	0 - 0.5	2/9/2023	In-Situ	<0.00199	0.464	242	895	<50.0	**1,140**	20.9
	0.5 - 1	2/9/2023	In-Situ	<0.00200	0.0106	<50.0	<50.0	<50.0	<50.0	248
S-5	0 - 0.5	2/9/2023	In-Situ	<0.00201	0.636	248	721	<49.9	**969**	91.1
	0.5 - 1	2/9/2023	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	204
S-6	0 - 0.5	2/9/2023	In-Situ	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	9.78
	0.5 - 1	2/9/2023	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	29.5
S-7	0 - 0.5	2/9/2023	In-Situ	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	37.2

Table 1

Soil Sample Analytical Data Summary

Chevron - Cotton Hills 23 26 27 Federal COM #001H

Eddy County, New Mexico

32° 03' 03.60" N, 104° 09' 33.43" W

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)
Delineation Limit:				**10**	**50**				**100**	**600**
	0.5 - 1	2/9/2023	In-Situ	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	226
S-8	0 - 0.5	2/9/2023	In-Situ	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	131
	0.5 - 1	2/9/2023	In-Situ	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	56.0
S-9	0 - 0.5	2/9/2023	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	118
	0.5 - 1	2/9/2023	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	191

Notes: Analysis performed byand Xenco Laboratories in Midland, Texas by EPA SW-846 8021B (BTEX), 8015M (TPH), and 300E (Chloride)
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
Bold and Highlighted exceeds OCD remediation action limits

Figures

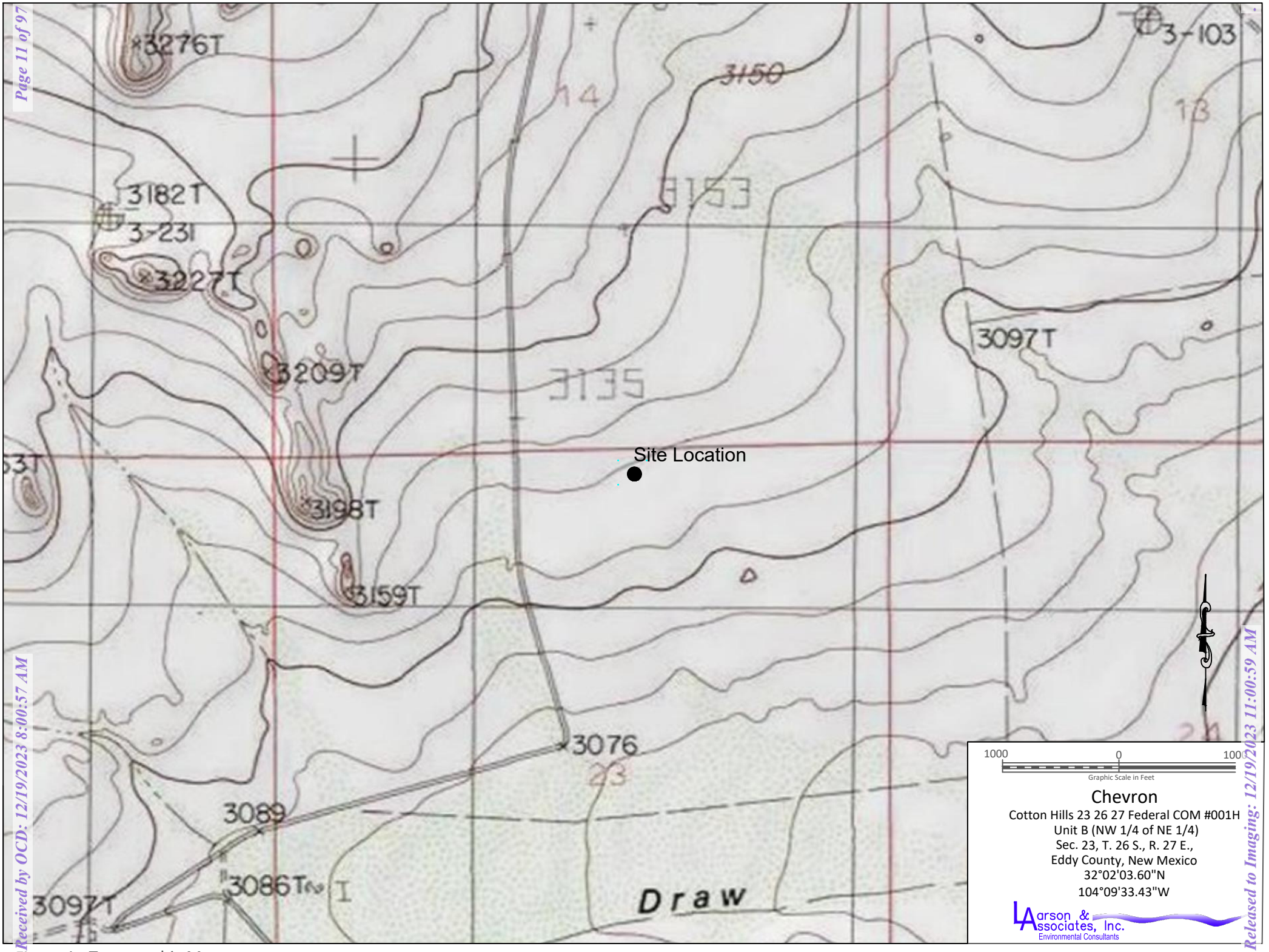


Figure 1 - Topographic Map

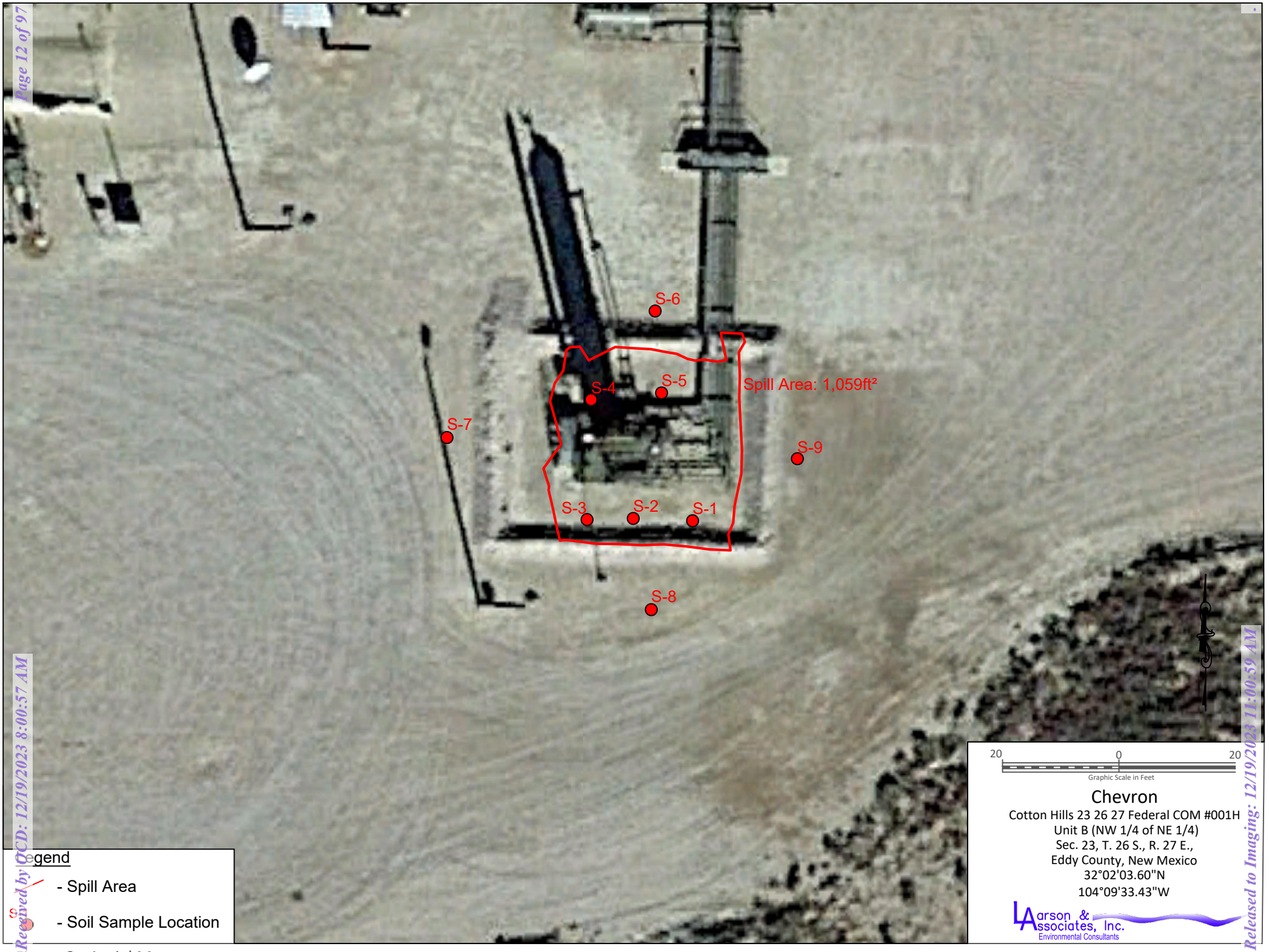


Figure 2 - Aerial Map

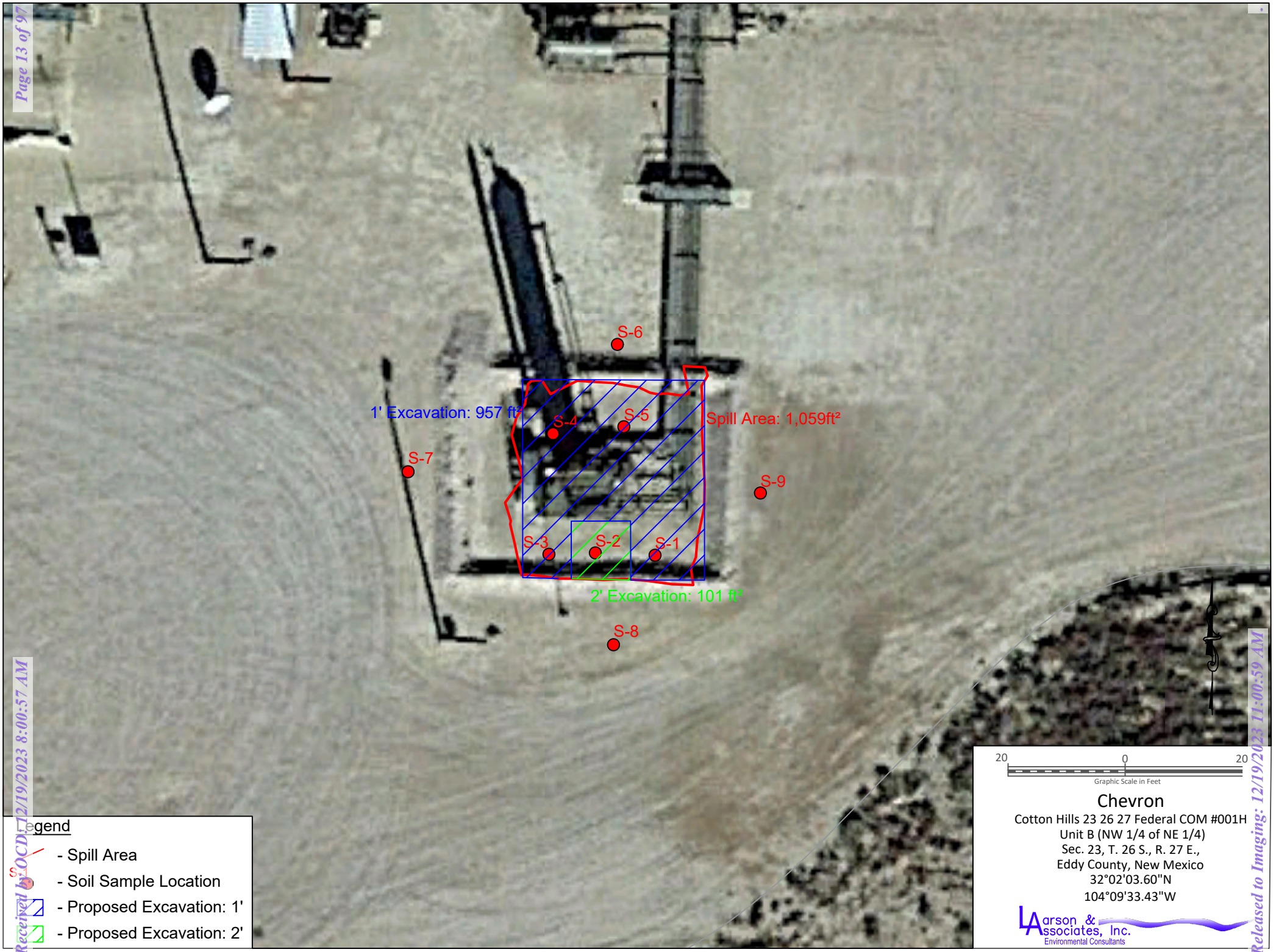


Figure 3 - Aerial Map Showing Proposed Excavation Locations

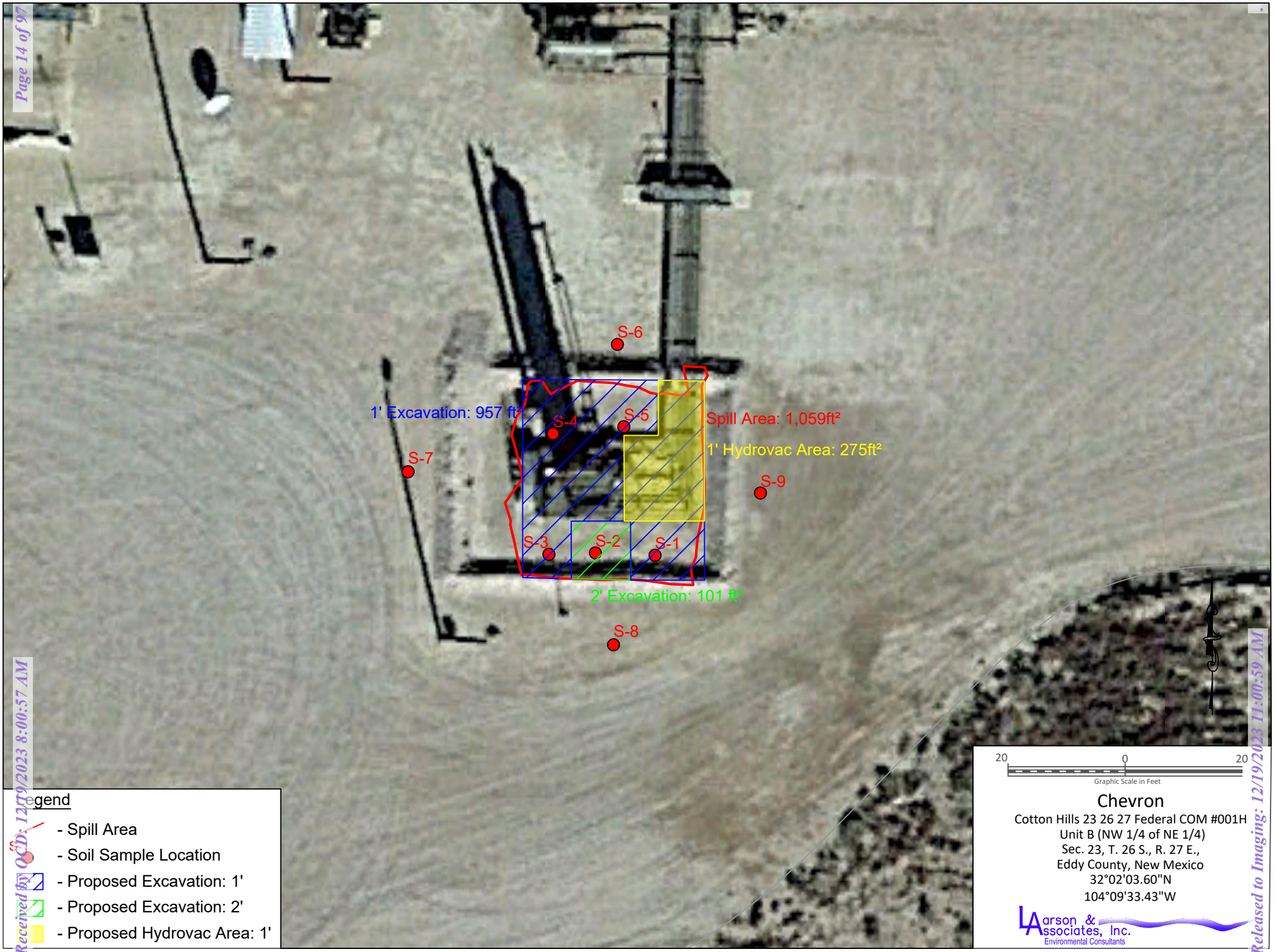


Figure 4 - Aerial Map Showing Proposed Hydrovac Area

Appendix A

Initial C-141 and Spill Calculation

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nAPP2300450334
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Chevron U.S.A., Inc.	OGRID: 4323
Contact Name: Catherine Smith	Contact Telephone: 432-967-9487
Contact email: catherinesmith@chevron.com	Incident # nAPP2300450334
Contact mailing address:6301 Deauville Blvd Midland, TX 79706	

Location of Release Source

Latitude: 32.0345573 Longitude: -104.1587753
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: COTTON HILLS 23 26 27 FEDERAL COM #001H	Site Type: Oil
Date Release Discovered: 12/25/2022	API# *(if applicable):* 30-015-41535

Unit Letter	Section	Township	Range	County
B	23	26S	27E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (bbls): 11.43 bbls	Volume Recovered (bbls): 0 bbls
☒ Produced Water	Volume Released (bbls): 11.428 bbls	Volume Recovered (bbls): 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:

Pinhole leak in 3 inch ball valve caused a release of oil and produced water.

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2300450334
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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: ____Catherine Smith_____ Title: _Lead Environmental Specialist, Field Support _____

Signature: _____ Date: ___1/4/2023_____

email: _____catherinesmith@chevron.com _____ Telephone: ____432-967-9487_____

OCD Only

Received by: _____ Date: _____

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

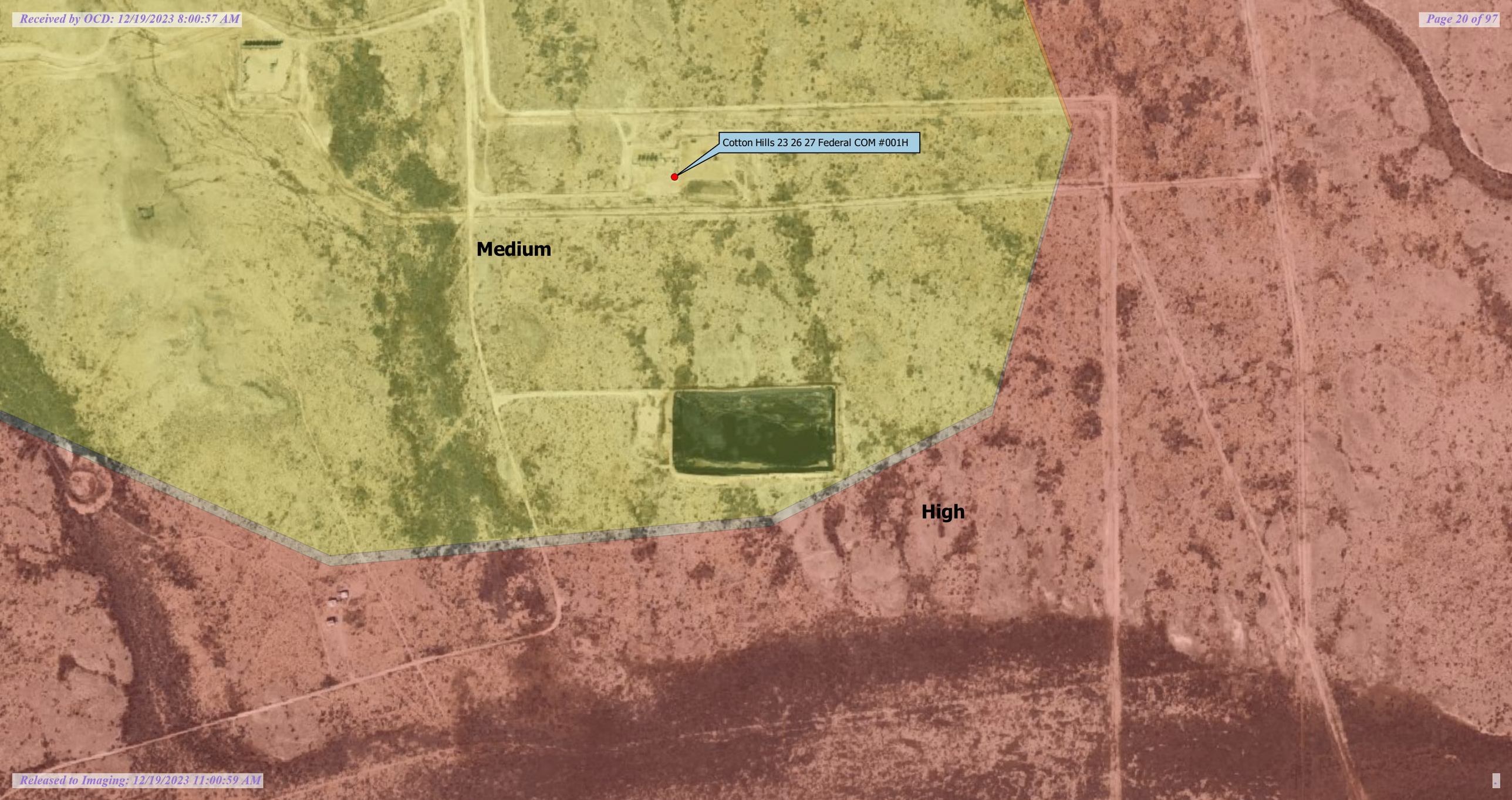
Incident ID	nAPP2300450334
District RP	
Facility ID	
Application ID	

Spill Calculations:

	Horizontal Dimensions			Vertical Dimensions		Calculated Volume		
	Diameter	Length (feet)	Width (feet)	Abovegrade Depth (feet)	Belowgrade Depth (feet)	Water Cut (%)	Barrels Water	Barrels Oil
Area 1		7.5	6	0.02083	0.2083	50	0.208	0.209
Area 2		28	18	0.2083	0.2083	50	10.753	10.753
Area 3		9	8	0.0416	0.2083	50	0.467	0.468
						Total	11.428	11.43

Appendix B

Karst Risk Potential


Cotton Hills 23 26 27 Federal COM #001H
Medium
High

Appendix C

Laboratory Reports

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

PBELAB

Analytical Report

Prepared for:

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

Project: Cottom Hills 23 26 27
Project Number: 23-0102-01
Location:

Lab Order Number: 3D06002

NELAP ACCREDITED TNI LABORATORY

Current Certification

Report Date: 04/17/23

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S2 @ 1'	3D06002-01	Soil	04/03/23 13:00	04-06-2023 09:04
S2 @ 3'	3D06002-02	Soil	04/03/23 13:15	04-06-2023 09:04
S2 @ 5'	3D06002-03	Soil	04/03/23 13:30	04-06-2023 09:04
S2 @ 10'	3D06002-04	Soil	04/03/23 13:45	04-06-2023 09:04
S3 @ 1'	3D06002-05	Soil	04/03/23 14:00	04-06-2023 09:04
S3 @ 3'	3D06002-06	Soil	04/03/23 14:15	04-06-2023 09:04
S3 @ 5'	3D06002-07	Soil	04/03/23 14:30	04-06-2023 09:04
S3 @ 10'	3D06002-08	Soil	04/03/23 14:45	04-06-2023 09:04

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

S2 @ 1'

3D06002-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
BTEX by 8021B									
Benzene	ND	0.00115	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:00	EPA 8021B	
Toluene	ND	0.00115	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:00	EPA 8021B	
Ethylbenzene	ND	0.00115	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:00	EPA 8021B	
Xylene (p/m)	ND	0.00230	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:00	EPA 8021B	
Xylene (o)	ND	0.00115	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:00	EPA 8021B	
Surrogate: 4-Bromofluorobenzene	*70.7 %*		*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 19:00*	*EPA 8021B*	*S-GC*
Surrogate: 1,4-Difluorobenzene	*114 %*		*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 19:00*	*EPA 8021B*	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	28.7	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 14:33	TPH 8015M	
>C12-C28	**432**	28.7	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 14:33	TPH 8015M	
>C28-C35	**96.0**	28.7	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 14:33	TPH 8015M	
Surrogate: 1-Chlorooctane	*88.9 %*		*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 14:33*	*TPH 8015M*	
Surrogate: o-Terphenyl	*100 %*		*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 14:33*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**528**	28.7	mg/kg dry	1	[CALC]	04/11/23 11:45	04/15/23 14:33	calc	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**246**	5.75	mg/kg dry	5	P3D0807	04/08/23 20:16	04/14/23 09:26	EPA 300.0	
% Moisture	**13.0**	0.1	%	1	P3D1002	04/10/23 10:53	04/10/23 11:09	ASTM D2216	

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

S2 @ 3'

3D06002-02 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BTEX by 8021B									
Benzene	ND	0.00128	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:21	EPA 8021B	
Toluene	ND	0.00128	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:21	EPA 8021B	
Ethylbenzene	ND	0.00128	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:21	EPA 8021B	
Xylene (p/m)	ND	0.00256	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:21	EPA 8021B	
Xylene (o)	ND	0.00128	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:21	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*73.4 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 19:21*	*EPA 8021B*	*S-GC*
Surrogate: 1,4-Difluorobenzene		*118 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 19:21*	*EPA 8021B*	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	32.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 14:58	TPH 8015M	
>C12-C28	ND	32.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 14:58	TPH 8015M	
>C28-C35	ND	32.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 14:58	TPH 8015M	
Surrogate: 1-Chlorooctane		*88.0 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 14:58*	*TPH 8015M*	
Surrogate: o-Terphenyl		*98.8 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 14:58*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	32.1	mg/kg dry	1	[CALC]	04/11/23 11:45	04/15/23 14:58	calc	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**146**	6.41	mg/kg dry	5	P3D0807	04/08/23 20:16	04/14/23 10:28	EPA 300.0	
% Moisture	**22.0**	0.1	%	1	P3D1002	04/10/23 10:53	04/10/23 11:09	ASTM D2216	

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

S2 @ 5'

3D06002-03 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BTEX by 8021B									
Benzene	ND	0.00123	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:41	EPA 8021B	
Toluene	ND	0.00123	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:41	EPA 8021B	
Ethylbenzene	ND	0.00123	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:41	EPA 8021B	
Xylene (p/m)	ND	0.00247	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:41	EPA 8021B	
Xylene (o)	ND	0.00123	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 19:41	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*69.9 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 19:41*	*EPA 8021B*	*S-GC*
Surrogate: 1,4-Difluorobenzene		*119 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 19:41*	*EPA 8021B*	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	30.9	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 15:24	TPH 8015M	
>C12-C28	ND	30.9	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 15:24	TPH 8015M	
>C28-C35	ND	30.9	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 15:24	TPH 8015M	
Surrogate: 1-Chlorooctane		*90.8 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 15:24*	*TPH 8015M*	
Surrogate: o-Terphenyl		*102 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 15:24*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	30.9	mg/kg dry	1	[CALC]	04/11/23 11:45	04/15/23 15:24	calc	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**214**	6.17	mg/kg dry	5	P3D0807	04/08/23 20:16	04/14/23 10:48	EPA 300.0	
% Moisture	**19.0**	0.1	%	1	P3D1002	04/10/23 10:53	04/10/23 11:09	ASTM D2216	

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

S2 @ 10'

3D06002-04 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BTEX by 8021B									
Benzene	ND	0.00120	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:01	EPA 8021B	
Toluene	ND	0.00120	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:01	EPA 8021B	
Ethylbenzene	ND	0.00120	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:01	EPA 8021B	
Xylene (p/m)	ND	0.00241	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:01	EPA 8021B	
Xylene (o)	ND	0.00120	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:01	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*69.2 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 20:01*	*EPA 8021B*	*S-GC*
Surrogate: 1,4-Difluorobenzene		*119 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 20:01*	*EPA 8021B*	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	30.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 15:49	TPH 8015M	
>C12-C28	ND	30.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 15:49	TPH 8015M	
>C28-C35	ND	30.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 15:49	TPH 8015M	
Surrogate: 1-Chlorooctane		*89.5 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 15:49*	*TPH 8015M*	
Surrogate: o-Terphenyl		*101 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 15:49*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	30.1	mg/kg dry	1	[CALC]	04/11/23 11:45	04/15/23 15:49	calc	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**14.9**	1.20	mg/kg dry	1	P3D0807	04/08/23 20:16	04/14/23 18:41	EPA 300.0	
% Moisture	**17.0**	0.1	%	1	P3D1002	04/10/23 10:53	04/10/23 11:09	ASTM D2216	

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

S3 @ 1'

3D06002-05 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BTEX by 8021B									
Benzene	ND	0.00112	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:22	EPA 8021B	
Toluene	ND	0.00112	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:22	EPA 8021B	
Ethylbenzene	ND	0.00112	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:22	EPA 8021B	
Xylene (p/m)	ND	0.00225	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:22	EPA 8021B	
Xylene (o)	ND	0.00112	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:22	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*119 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 20:22*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*69.0 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 20:22*	*EPA 8021B*	*S-GC*
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	28.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 16:14	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 16:14	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 16:14	TPH 8015M	
Surrogate: 1-Chlorooctane		*91.1 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 16:14*	*TPH 8015M*	
Surrogate: o-Terphenyl		*106 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 16:14*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	04/11/23 11:45	04/15/23 16:14	calc	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**25.9**	1.12	mg/kg dry	1	P3D0807	04/08/23 20:16	04/14/23 19:01	EPA 300.0	
% Moisture	**11.0**	0.1	%	1	P3D1002	04/10/23 10:53	04/10/23 11:09	ASTM D2216	

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

S3 @ 3'

3D06002-06 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BTEX by 8021B									
Benzene	ND	0.00125	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:42	EPA 8021B	
Toluene	ND	0.00125	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:42	EPA 8021B	
Ethylbenzene	ND	0.00125	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:42	EPA 8021B	
Xylene (p/m)	ND	0.00250	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:42	EPA 8021B	
Xylene (o)	ND	0.00125	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 20:42	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*67.0 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 20:42*	*EPA 8021B*	*S-GC*
Surrogate: 1,4-Difluorobenzene		*118 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 20:42*	*EPA 8021B*	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	31.2	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 16:39	TPH 8015M	
>C12-C28	ND	31.2	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 16:39	TPH 8015M	
>C28-C35	ND	31.2	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 16:39	TPH 8015M	
Surrogate: 1-Chlorooctane		*92.2 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 16:39*	*TPH 8015M*	
Surrogate: o-Terphenyl		*103 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 16:39*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	31.2	mg/kg dry	1	[CALC]	04/11/23 11:45	04/15/23 16:39	calc	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**107**	6.25	mg/kg dry	5	P3D0807	04/08/23 20:16	04/14/23 11:50	EPA 300.0	
% Moisture	**20.0**	0.1	%	1	P3D1002	04/10/23 10:53	04/10/23 11:09	ASTM D2216	

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

S3 @ 5'

3D06002-07 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BTEX by 8021B									
Benzene	ND	0.00120	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 21:43	EPA 8021B	
Toluene	ND	0.00120	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 21:43	EPA 8021B	
Ethylbenzene	ND	0.00120	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 21:43	EPA 8021B	
Xylene (p/m)	ND	0.00241	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 21:43	EPA 8021B	
Xylene (o)	ND	0.00120	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 21:43	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*120 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 21:43*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*66.6 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 21:43*	*EPA 8021B*	*S-GC*
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	30.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 17:05	TPH 8015M	
>C12-C28	ND	30.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 17:05	TPH 8015M	
>C28-C35	ND	30.1	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 17:05	TPH 8015M	
Surrogate: 1-Chlorooctane		*87.1 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 17:05*	*TPH 8015M*	
Surrogate: o-Terphenyl		*100 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 17:05*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	30.1	mg/kg dry	1	[CALC]	04/11/23 11:45	04/15/23 17:05	calc	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**109**	6.02	mg/kg dry	5	P3D0807	04/08/23 20:16	04/14/23 12:10	EPA 300.0	
% Moisture	**17.0**	0.1	%	1	P3D1002	04/10/23 10:53	04/10/23 11:09	ASTM D2216	

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

S3 @ 10'

3D06002-08 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BTEX by 8021B									
Benzene	ND	0.00118	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 22:03	EPA 8021B	
Toluene	ND	0.00118	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 22:03	EPA 8021B	
Ethylbenzene	ND	0.00118	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 22:03	EPA 8021B	
Xylene (p/m)	ND	0.00235	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 22:03	EPA 8021B	
Xylene (o)	ND	0.00118	mg/kg dry	1	P3D1206	04/12/23 14:36	04/12/23 22:03	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*119 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 22:03*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*61.9 %*	*80-120*		*P3D1206*	*04/12/23 14:36*	*04/12/23 22:03*	*EPA 8021B*	*S-GC*
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	29.4	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 17:30	TPH 8015M	
>C12-C28	ND	29.4	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 17:30	TPH 8015M	
>C28-C35	ND	29.4	mg/kg dry	1	P3D1105	04/11/23 11:45	04/15/23 17:30	TPH 8015M	
Surrogate: 1-Chlorooctane		*82.3 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 17:30*	*TPH 8015M*	
Surrogate: o-Terphenyl		*98.8 %*	*70-130*		*P3D1105*	*04/11/23 11:45*	*04/15/23 17:30*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	29.4	mg/kg dry	1	[CALC]	04/11/23 11:45	04/15/23 17:30	calc	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**35.9**	1.18	mg/kg dry	1	P3D0807	04/08/23 20:16	04/14/23 19:22	EPA 300.0	
% Moisture	**15.0**	0.1	%	1	P3D1002	04/10/23 10:53	04/10/23 11:09	ASTM D2216	

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

BTEX by 8021B - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3D1206 - * DEFAULT PREP *** **										
LCS (P3D1206-BS1)				Prepared & Analyzed: 04/12/23						
Benzene	0.113	0.00100	mg/kg	0.100		113	80-120			
Toluene	0.111	0.00100	"	0.100		111	80-120			
Ethylbenzene	0.114	0.00100	"	0.100		114	80-120			
Xylene (p/m)	0.211	0.00200	"	0.200		105	80-120			
Xylene (o)	0.107	0.00100	"	0.100		107	80-120			
Surrogate: 1,4-Difluorobenzene	*0.133*		*"*	*0.120*		*111*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*0.106*		*"*	*0.120*		*88.2*	*80-120*			
LCS Dup (P3D1206-BSD1)				Prepared & Analyzed: 04/12/23						
Benzene	0.109	0.00100	mg/kg	0.100		109	80-120	3.52	20	
Toluene	0.105	0.00100	"	0.100		105	80-120	5.33	20	
Ethylbenzene	0.107	0.00100	"	0.100		107	80-120	6.16	20	
Xylene (p/m)	0.199	0.00200	"	0.200		99.4	80-120	5.85	20	
Xylene (o)	0.101	0.00100	"	0.100		101	80-120	5.66	20	
Surrogate: 4-Bromofluorobenzene	*0.101*		*"*	*0.120*		*84.0*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*0.134*		*"*	*0.120*		*111*	*80-120*			
Calibration Blank (P3D1206-CCB1)				Prepared & Analyzed: 04/12/23						
Benzene	0.00		ug/kg							
Toluene	0.00		"							
Ethylbenzene	0.120		"							
Xylene (p/m)	0.120		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	*0.101*		*"*	*0.120*		*84.3*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*0.126*		*"*	*0.120*		*105*	*80-120*			
Calibration Blank (P3D1206-CCB2)				Prepared & Analyzed: 04/12/23						
Benzene	0.00		ug/kg							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	*0.0730*		*"*	*0.120*		*60.8*	*80-120*			*S-GC*
Surrogate: 1,4-Difluorobenzene	*0.141*		*"*	*0.120*		*117*	*80-120*			

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

BTEX by 8021B - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3D1206 - * DEFAULT PREP *** **										
Calibration Blank (P3D1206-CCB3)				Prepared: 04/12/23 Analyzed: 04/13/23						
Benzene	0.00		ug/kg							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.110		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	*0.0696*		*"*	*0.120*		*58.0*	*80-120*			*S-GC*
Surrogate: 1,4-Difluorobenzene	*0.142*		*"*	*0.120*		*119*	*80-120*			
Calibration Check (P3D1206-CCV1)				Prepared & Analyzed: 04/12/23						
Benzene	0.102	0.00100	mg/kg	0.100		102	80-120			
Toluene	0.0919	0.00100	"	0.100		91.9	80-120			
Ethylbenzene	0.0871	0.00100	"	0.100		87.1	80-120			
Xylene (p/m)	0.172	0.00200	"	0.200		86.1	80-120			
Xylene (o)	0.0901	0.00100	"	0.100		90.1	80-120			
Surrogate: 4-Bromofluorobenzene	*0.0989*		*"*	*0.120*		*82.4*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.127*		*"*	*0.120*		*106*	*75-125*			
Calibration Check (P3D1206-CCV2)				Prepared & Analyzed: 04/12/23						
Benzene	0.107	0.00100	mg/kg	0.100		107	80-120			
Toluene	0.0996	0.00100	"	0.100		99.6	80-120			
Ethylbenzene	0.0951	0.00100	"	0.100		95.1	80-120			
Xylene (p/m)	0.185	0.00200	"	0.200		92.5	80-120			
Xylene (o)	0.0971	0.00100	"	0.100		97.1	80-120			
Surrogate: 4-Bromofluorobenzene	*0.0756*		*"*	*0.120*		*63.0*	*75-125*			*S-GC*
Surrogate: 1,4-Difluorobenzene	*0.143*		*"*	*0.120*		*119*	*75-125*			
Calibration Check (P3D1206-CCV3)				Prepared: 04/12/23 Analyzed: 04/13/23						
Benzene	0.0887	0.00100	mg/kg	0.100		88.7	80-120			
Toluene	0.0909	0.00100	"	0.100		90.9	80-120			
Ethylbenzene	0.0890	0.00100	"	0.100		89.0	80-120			
Xylene (p/m)	0.167	0.00200	"	0.200		83.6	80-120			
Xylene (o)	0.0864	0.00100	"	0.100		86.4	80-120			
Surrogate: 1,4-Difluorobenzene	*0.142*		*"*	*0.120*		*118*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0737*		*"*	*0.120*		*61.4*	*75-125*			*S-GC*

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

BTEX by 8021B - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3D1206 - * DEFAULT PREP *** **										
Matrix Spike (P3D1206-MS1)	**Source: 3D06002-01**			Prepared: 04/12/23 Analyzed: 04/13/23						
Benzene	0.0645	0.00115	mg/kg dry	0.115	ND	56.1	80-120			QM-05
Toluene	0.0518	0.00115	"	0.115	ND	45.1	80-120			QM-05
Ethylbenzene	0.0360	0.00115	"	0.115	ND	31.3	80-120			QM-05
Xylene (p/m)	0.0640	0.00230	"	0.230	ND	27.9	80-120			QM-05
Xylene (o)	0.0318	0.00115	"	0.115	ND	27.7	80-120			QM-05
Surrogate: 1,4-Difluorobenzene	*0.162*		"	*0.138*		*118*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*0.0813*		"	*0.138*		*58.9*	*80-120*			*S-GC*
Matrix Spike Dup (P3D1206-MSD1)	**Source: 3D06002-01**			Prepared: 04/12/23 Analyzed: 04/13/23						
Benzene	0.0802	0.00115	mg/kg dry	0.115	ND	69.8	80-120	21.8	20	QM-05
Toluene	0.0666	0.00115	"	0.115	ND	57.9	80-120	25.0	20	QM-05
Ethylbenzene	0.0474	0.00115	"	0.115	ND	41.3	80-120	27.4	20	QM-05
Xylene (p/m)	0.0839	0.00230	"	0.230	ND	36.5	80-120	26.8	20	QM-05
Xylene (o)	0.0419	0.00115	"	0.115	ND	36.5	80-120	27.3	20	QM-05
Surrogate: 4-Bromofluorobenzene	*0.0856*		"	*0.138*		*62.0*	*80-120*			*S-GC*
Surrogate: 1,4-Difluorobenzene	*0.165*		"	*0.138*		*120*	*80-120*			

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3D1105 - TX 1005										
Blank (P3D1105-BLK1)				Prepared: 04/11/23 Analyzed: 04/15/23						
C6-C12	ND	25.0	mg/kg							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	*84.3*		"	*100*		*84.3*	*70-130*			
Surrogate: o-Terphenyl	*45.9*		"	*50.0*		*91.8*	*70-130*			
LCS (P3D1105-BS1)				Prepared: 04/11/23 Analyzed: 04/15/23						
C6-C12	946	25.0	mg/kg	1000		94.6	75-125			
>C12-C28	931	25.0	"	1000		93.1	75-125			
Surrogate: 1-Chlorooctane	*113*		"	*100*		*113*	*70-130*			
Surrogate: o-Terphenyl	*57.1*		"	*50.0*		*114*	*70-130*			
LCS Dup (P3D1105-BSD1)				Prepared: 04/11/23 Analyzed: 04/15/23						
C6-C12	960	25.0	mg/kg	1000		96.0	75-125	1.39	20	
>C12-C28	913	25.0	"	1000		91.3	75-125	1.96	20	
Surrogate: 1-Chlorooctane	*110*		"	*100*		*110*	*70-130*			
Surrogate: o-Terphenyl	*53.2*		"	*50.0*		*106*	*70-130*			
Calibration Check (P3D1105-CCV1)				Prepared: 04/11/23 Analyzed: 04/15/23						
C6-C12	502	25.0	mg/kg	500		100	85-115			
>C12-C28	538	25.0	"	500		108	85-115			
Surrogate: 1-Chlorooctane	*102*		"	*100*		*102*	*70-130*			
Surrogate: o-Terphenyl	*48.0*		"	*50.0*		*96.0*	*70-130*			
Matrix Spike (P3D1105-MS1)	**Source: 3D06018-12**			Prepared: 04/11/23 Analyzed: 04/15/23						
C6-C12	797	27.8	mg/kg dry	1110	ND	71.7	75-125			QM-05
>C12-C28	767	27.8	"	1110	ND	69.0	75-125			QM-05
Surrogate: 1-Chlorooctane	*99.2*		"	*111*		*89.2*	*70-130*			
Surrogate: o-Terphenyl	*41.9*		"	*55.6*		*75.4*	*70-130*			

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3D1105 - TX 1005										
Matrix Spike Dup (P3D1105-MSD1)	**Source: 3D06018-12**			Prepared: 04/11/23 Analyzed: 04/16/23						
C6-C12	859	27.8	mg/kg dry	1110	ND	77.3	75-125	7.48	20	
>C12-C28	829	27.8	"	1110	ND	74.6	75-125	7.72	20	QM-05
Surrogate: 1-Chlorooctane	*107*		*"*	*111*		*96.6*	*70-130*			
Surrogate: o-Terphenyl	*45.3*		*"*	*55.6*		*81.5*	*70-130*			

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3D0807 - * DEFAULT PREP *** **										
Blank (P3D0807-BLK1)				Prepared: 04/08/23 Analyzed: 04/13/23						
Chloride	ND	1.00	mg/kg							
LCS (P3D0807-BS1)				Prepared: 04/08/23 Analyzed: 04/13/23						
Chloride	18.4		mg/kg	20.0		92.1	90-110			
LCS Dup (P3D0807-BSD1)				Prepared: 04/08/23 Analyzed: 04/13/23						
Chloride	18.6		mg/kg	20.0		93.2	90-110	1.13	10	
Calibration Check (P3D0807-CCV1)				Prepared: 04/08/23 Analyzed: 04/13/23						
Chloride	18.5		mg/kg	20.0		92.5	90-110			
Calibration Check (P3D0807-CCV2)				Prepared: 04/08/23 Analyzed: 04/14/23						
Chloride	18.2		mg/kg	20.0		90.9	90-110			
Calibration Check (P3D0807-CCV3)				Prepared: 04/08/23 Analyzed: 04/14/23						
Chloride	18.1		mg/kg	20.0		90.4	90-110			
Matrix Spike (P3D0807-MS1)		**Source: 3D06002-01**		Prepared: 04/08/23 Analyzed: 04/14/23						
Chloride	112		mg/kg	100	4.28	108	80-120			
Matrix Spike (P3D0807-MS2)		**Source: 3D06018-11**		Prepared: 04/08/23 Analyzed: 04/14/23						
Chloride	154		mg/kg	100	0.00	154	80-120			
Matrix Spike Dup (P3D0807-MSD1)		**Source: 3D06002-01**		Prepared: 04/08/23 Analyzed: 04/14/23						
Chloride	114		mg/kg	100	4.28	110	80-120	1.69	20	
Matrix Spike Dup (P3D0807-MSD2)		**Source: 3D06018-11**		Prepared: 04/08/23 Analyzed: 04/14/23						
Chloride	155		mg/kg	100	0.00	155	80-120	0.665	20	

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3D1002 - * DEFAULT PREP *** **										
Blank (P3D1002-BLK1)				Prepared & Analyzed: 04/10/23						
% Moisture	ND	0.1	%							
Blank (P3D1002-BLK2)				Prepared & Analyzed: 04/10/23						
% Moisture	ND	0.1	%							
Blank (P3D1002-BLK3)				Prepared & Analyzed: 04/10/23						
% Moisture	ND	0.1	%							
Blank (P3D1002-BLK4)				Prepared & Analyzed: 04/10/23						
% Moisture	ND	0.1	%							
Blank (P3D1002-BLK5)				Prepared & Analyzed: 04/10/23						
% Moisture	ND	0.1	%							
Duplicate (P3D1002-DUP1)	**Source: 3D05009-09**			Prepared & Analyzed: 04/10/23						
% Moisture	5.0	0.1	%		5.0			0.00	20	
Duplicate (P3D1002-DUP2)	**Source: 3D05009-19**			Prepared & Analyzed: 04/10/23						
% Moisture	7.0	0.1	%		8.0			13.3	20	
Duplicate (P3D1002-DUP3)	**Source: 3D05009-34**			Prepared & Analyzed: 04/10/23						
% Moisture	6.0	0.1	%		6.0			0.00	20	
Duplicate (P3D1002-DUP4)	**Source: 3D05010-01**			Prepared & Analyzed: 04/10/23						
% Moisture	2.0	0.1	%		2.0			0.00	20	
Duplicate (P3D1002-DUP5)	**Source: 3D05016-03**			Prepared & Analyzed: 04/10/23						
% Moisture	2.0	0.1	%		2.0			0.00	20	

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3D1002 - * DEFAULT PREP *** **										
Duplicate (P3D1002-DUP6)	**Source: 3D06001-03**			Prepared & Analyzed: 04/10/23						
% Moisture	3.0	0.1	%		2.0			40.0	20	R
Duplicate (P3D1002-DUP7)	**Source: 3D06004-01**			Prepared & Analyzed: 04/10/23						
% Moisture	5.0	0.1	%		6.0			18.2	20	
Duplicate (P3D1002-DUP8)	**Source: 3D06004-11**			Prepared & Analyzed: 04/10/23						
% Moisture	9.0	0.1	%		8.0			11.8	20	

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
ROI	Received on Ice
R	The RPD exceeded the method control limit. The individual analyte QA/QC recoveries, however, were within acceptance limits.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
NPBEL C(	Chain of Custody was not generated at PBELAB
BULK	Samples received in Bulk soil containers may be biased low in the nC6-C12 TPH Range
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Brent Barron Date: 4/17/2023

Brent Barron, Laboratory Director/Technical Director

Larson & Associates, Inc.	Project: Cottom Hills 23 26 27
P.O. Box 50685	Project Number: 23-0102-01
Midland TX, 79710	Project Manager: Mark Larson

Nº 2030

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

Data Reported to: Mark Larson / Robert Nelson

DATE: 4-6-23 PAGE 1 OF 1

PO#: LAB WORK ORDER#: 3D06002

PROJECT LOCATION OR NAME: Cotton Hills 23 26 27

LAI PROJECT #: 23-0102-01 COLLECTOR: JH & KG

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MNT/NM

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 ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
S2 1'		4-3-23	1300	S	1				X		X		X	X	X												X		
3'			1315																										
5'			1330																										
10'			1345																										
S3 1'			1400																										
3'			1415																										
5'			1430																										
10'		4-3-23	1445	S	1				X		X		X	X	X												X		

TOTAL 8

RELINQUISHED BY:(Signature) DATE/TIME 9:04 4-6-23 RECEIVED BY:(Signature)

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

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

LABORATORY: PBE

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

LABORATORY USE ONLY:
RECEIVING TEMP: -14.0 THERM#: NCF 63
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☒ HAND DELIVERED

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 2/19/2023 12:17:57 PM

JOB DESCRIPTION

Cotton Hills 23 26 27 Federal
SDG NUMBER 23-0102-01

JOB NUMBER

880-24558-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

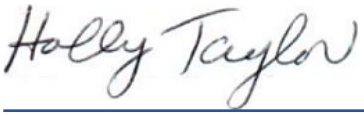
my EOL

Eurofins Midland

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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2/19/2023 12:17:57 PM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Laboratory Job ID: 880-24558-1
SDG: 23-0102-01

Table of Contents

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-24558-1
Project/Site: Cotton Hills 23 26 27 Federal SDG: 23-0102-01

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-24558-1
Project/Site: Cotton Hills 23 26 27 Federal SDG: 23-0102-01

Job ID: 880-24558-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-24558-1

Receipt
The samples were received on 2/10/2023 8:37 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.9°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: S1 0-0.5' (880-24558-1), S1 0.5'-1' (880-24558-2), S2 0-0.5' (880-24558-3), S2 0.5'-1' (880-24558-4), S3 0-0.5' (880-24558-5), S3 0.5'-1' (880-24558-6), S4 0-0.5' (880-24558-7), S4 0.5'-1' (880-24558-8), S5 0-0.5' (880-24558-9), S5 0.5'-1' (880-24558-10), S6 0-0.5' (880-24558-11), S6 0.5'-1' (880-24558-12), S7 0-0.5' (880-24558-13), S7 0.5'-1' (880-24558-14), S8 0-0.5' (880-24558-15), S8 0.5'-1' (880-24558-16), S9 0-0.5' (880-24558-17) and S9 0.5'-1' (880-24558-18).

GC VOA
Method 8021B: The matrix spike (MS) recoveries for preparation batch 880-46191 and analytical batch 880-46261 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: S3 0-0.5' (880-24558-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: S1 0.5'-1' (880-24558-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following samples were outside control limits: S4 0-0.5' (880-24558-7), S4 0.5'-1' (880-24558-8) and S5 0-0.5' (880-24558-9). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: S9 0.5'-1' (880-24558-18). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: S4 0.5'-1' (880-24558-8). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: S8 0-0.5' (880-24558-15). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-46322 and analytical batch 880-46477 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S1 0-0.5'

Date Collected: 02/09/23 11:00
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-1
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		02/13/23 15:34	02/14/23 12:05	1
Toluene	<0.00202	U	0.00202		mg/Kg		02/13/23 15:34	02/14/23 12:05	1
Ethylbenzene	**0.00430**	**F1**	0.00202		mg/Kg		02/13/23 15:34	02/14/23 12:05	1
m,p-Xylenes	<0.00403	U F1	0.00403		mg/Kg		02/13/23 15:34	02/14/23 12:05	1
o-Xylene	**0.00208**	**F1**	0.00202		mg/Kg		02/13/23 15:34	02/14/23 12:05	1
Xylenes, Total	<0.00403	U F1	0.00403		mg/Kg		02/13/23 15:34	02/14/23 12:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*02/13/23 15:34*	*02/14/23 12:05*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*02/13/23 15:34*	*02/14/23 12:05*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.00638**		0.00403		mg/Kg			02/14/23 16:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**1070**		49.8		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		02/14/23 14:05	02/16/23 20:55	1
Diesel Range Organics (Over C10-C28)	**1070**	**F1**	49.8		mg/Kg		02/14/23 14:05	02/16/23 20:55	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		02/14/23 14:05	02/16/23 20:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*84*		*70 - 130*	*02/14/23 14:05*	*02/16/23 20:55*	*1*
o-Terphenyl (Surr)	*87*		*70 - 130*	*02/14/23 14:05*	*02/16/23 20:55*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**125**		5.02		mg/Kg			02/15/23 01:34	1

Client Sample ID: S1 0.5'-1'

Date Collected: 02/09/23 11:15
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-2
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		02/13/23 15:34	02/14/23 12:25	1
Toluene	<0.00198	U	0.00198		mg/Kg		02/13/23 15:34	02/14/23 12:25	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		02/13/23 15:34	02/14/23 12:25	1
m,p-Xylenes	<0.00396	U	0.00396		mg/Kg		02/13/23 15:34	02/14/23 12:25	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		02/13/23 15:34	02/14/23 12:25	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		02/13/23 15:34	02/14/23 12:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*132*	*S1+*	*70 - 130*	*02/13/23 15:34*	*02/14/23 12:25*	*1*
1,4-Difluorobenzene (Surr)	*114*		*70 - 130*	*02/13/23 15:34*	*02/14/23 12:25*	*1*

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S1 0.5'-1'

Lab Sample ID: 880-24558-2
Matrix: Solid
Date Collected: 02/09/23 11:15
Date Received: 02/10/23 08:37

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			02/14/23 16:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/16/23 22:01	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/16/23 22:01	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/16/23 22:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*73*		*70 - 130*	*02/14/23 14:05*	*02/16/23 22:01*	*1*
o-Terphenyl (Surr)	*77*		*70 - 130*	*02/14/23 14:05*	*02/16/23 22:01*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**245**		5.02		mg/Kg			02/15/23 01:48	1

Client Sample ID: S2 0-0.5'

Lab Sample ID: 880-24558-3
Matrix: Solid
Date Collected: 02/09/23 11:30
Date Received: 02/10/23 08:37

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 12:46	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 12:46	1
Ethylbenzene	**0.00440**		0.00200		mg/Kg		02/13/23 15:34	02/14/23 12:46	1
m,p-Xylenes	**0.0184**		0.00399		mg/Kg		02/13/23 15:34	02/14/23 12:46	1
o-Xylene	**0.0140**		0.00200		mg/Kg		02/13/23 15:34	02/14/23 12:46	1
Xylenes, Total	**0.0324**		0.00399		mg/Kg		02/13/23 15:34	02/14/23 12:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*126*		*70 - 130*	*02/13/23 15:34*	*02/14/23 12:46*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*02/13/23 15:34*	*02/14/23 12:46*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0368**		0.00399		mg/Kg			02/14/23 16:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**772**		49.9		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**157**		49.9		mg/Kg		02/14/23 14:05	02/16/23 22:23	1
Diesel Range Organics (Over C10-C28)	**615**		49.9		mg/Kg		02/14/23 14:05	02/16/23 22:23	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S2 0-0.5'

Lab Sample ID: 880-24558-3
Matrix: Solid
Date Collected: 02/09/23 11:30
Date Received: 02/10/23 08:37

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/16/23 22:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*87*		*70 - 130*	*02/14/23 14:05*	*02/16/23 22:23*	*1*
o-Terphenyl (Surr)	*88*		*70 - 130*	*02/14/23 14:05*	*02/16/23 22:23*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**267**		4.99		mg/Kg			02/15/23 01:53	1

Client Sample ID: S2 0.5'-1'

Lab Sample ID: 880-24558-4
Matrix: Solid
Date Collected: 02/09/23 11:45
Date Received: 02/10/23 08:37

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		02/13/23 15:34	02/14/23 13:06	1
Toluene	**0.00258**		0.00201		mg/Kg		02/13/23 15:34	02/14/23 13:06	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		02/13/23 15:34	02/14/23 13:06	1
m,p-Xylenes	<0.00402	U	0.00402		mg/Kg		02/13/23 15:34	02/14/23 13:06	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		02/13/23 15:34	02/14/23 13:06	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		02/13/23 15:34	02/14/23 13:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*	*02/13/23 15:34*	*02/14/23 13:06*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*02/13/23 15:34*	*02/14/23 13:06*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			02/14/23 16:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**112**		49.8		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		02/14/23 14:05	02/16/23 22:45	1
Diesel Range Organics (Over C10-C28)	**112**		49.8		mg/Kg		02/14/23 14:05	02/16/23 22:45	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		02/14/23 14:05	02/16/23 22:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*86*		*70 - 130*	*02/14/23 14:05*	*02/16/23 22:45*	*1*
o-Terphenyl (Surr)	*89*		*70 - 130*	*02/14/23 14:05*	*02/16/23 22:45*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**609**		5.05		mg/Kg			02/15/23 01:57	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S3 0-0.5'

Lab Sample ID: 880-24558-5
Matrix: Solid
Date Collected: 02/09/23 12:00
Date Received: 02/10/23 08:37

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		02/13/23 15:34	02/14/23 13:27	1
Toluene	**0.00787**		0.00202		mg/Kg		02/13/23 15:34	02/14/23 13:27	1
Ethylbenzene	**0.0577**		0.00202		mg/Kg		02/13/23 15:34	02/14/23 13:27	1
m,p-Xylenes	**0.532**		0.00404		mg/Kg		02/13/23 15:34	02/14/23 13:27	1
o-Xylene	**0.214**		0.00202		mg/Kg		02/13/23 15:34	02/14/23 13:27	1
Xylenes, Total	**0.746**		0.00404		mg/Kg		02/13/23 15:34	02/14/23 13:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*172*	*S1+*	*70 - 130*	*02/13/23 15:34*	*02/14/23 13:27*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*02/13/23 15:34*	*02/14/23 13:27*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.812**		0.00404		mg/Kg			02/14/23 16:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**2500**		49.8		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**650**		49.8		mg/Kg		02/14/23 14:05	02/16/23 23:07	1
Diesel Range Organics (Over C10-C28)	**1850**		49.8		mg/Kg		02/14/23 14:05	02/16/23 23:07	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		02/14/23 14:05	02/16/23 23:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*84*		*70 - 130*	*02/14/23 14:05*	*02/16/23 23:07*	*1*
o-Terphenyl (Surr)	*76*		*70 - 130*	*02/14/23 14:05*	*02/16/23 23:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**101**		5.04		mg/Kg			02/15/23 02:02	1

Client Sample ID: S3 0.5'-1'

Lab Sample ID: 880-24558-6
Matrix: Solid
Date Collected: 02/09/23 12:15
Date Received: 02/10/23 08:37

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 13:47	1
Toluene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 13:47	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 13:47	1
m,p-Xylenes	<0.00398	U	0.00398		mg/Kg		02/13/23 15:34	02/14/23 13:47	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 13:47	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		02/13/23 15:34	02/14/23 13:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*	*02/13/23 15:34*	*02/14/23 13:47*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*02/13/23 15:34*	*02/14/23 13:47*	*1*

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S3 0.5'-1'

Lab Sample ID: 880-24558-6
Matrix: Solid
Date Collected: 02/09/23 12:15
Date Received: 02/10/23 08:37

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			02/14/23 16:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**55.9**		49.9		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/16/23 23:30	1
Diesel Range Organics (Over C10-C28)	**55.9**		49.9		mg/Kg		02/14/23 14:05	02/16/23 23:30	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/16/23 23:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*85*		*70 - 130*	*02/14/23 14:05*	*02/16/23 23:30*	*1*
o-Terphenyl (Surr)	*84*		*70 - 130*	*02/14/23 14:05*	*02/16/23 23:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3740**		50.0		mg/Kg			02/15/23 02:16	10

Client Sample ID: S4 0-0.5'

Lab Sample ID: 880-24558-7
Matrix: Solid
Date Collected: 02/09/23 12:30
Date Received: 02/10/23 08:37

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 14:07	1
Toluene	**0.0169**		0.00199		mg/Kg		02/13/23 15:34	02/14/23 14:07	1
Ethylbenzene	**0.0338**		0.00199		mg/Kg		02/13/23 15:34	02/14/23 14:07	1
m,p-Xylenes	**0.312**		0.00398		mg/Kg		02/13/23 15:34	02/14/23 14:07	1
o-Xylene	**0.101**		0.00199		mg/Kg		02/13/23 15:34	02/14/23 14:07	1
Xylenes, Total	**0.413**		0.00398		mg/Kg		02/13/23 15:34	02/14/23 14:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*02/13/23 15:34*	*02/14/23 14:07*	*1*
1,4-Difluorobenzene (Surr)	*68*	*S1-*	*70 - 130*	*02/13/23 15:34*	*02/14/23 14:07*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.464**		0.00398		mg/Kg			02/14/23 16:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**1140**		50.0		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**242**		50.0		mg/Kg		02/14/23 14:05	02/16/23 23:52	1
Diesel Range Organics (Over C10-C28)	**895**		50.0		mg/Kg		02/14/23 14:05	02/16/23 23:52	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S4 0-0.5'

Lab Sample ID: 880-24558-7
Matrix: Solid
Date Collected: 02/09/23 12:30
Date Received: 02/10/23 08:37

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/16/23 23:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*85*		*70 - 130*	*02/14/23 14:05*	*02/16/23 23:52*	*1*
o-Terphenyl (Surr)	*87*		*70 - 130*	*02/14/23 14:05*	*02/16/23 23:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**20.9**		5.00		mg/Kg			02/15/23 02:20	1

Client Sample ID: S4 0.5'-1'

Lab Sample ID: 880-24558-8
Matrix: Solid
Date Collected: 02/09/23 12:45
Date Received: 02/10/23 08:37

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 14:28	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 14:28	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 14:28	1
m,p-Xylenes	**0.00587**		0.00399		mg/Kg		02/13/23 15:34	02/14/23 14:28	1
o-Xylene	**0.00475**		0.00200		mg/Kg		02/13/23 15:34	02/14/23 14:28	1
Xylenes, Total	**0.0106**		0.00399		mg/Kg		02/13/23 15:34	02/14/23 14:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*132*	*S1+*	*70 - 130*	*02/13/23 15:34*	*02/14/23 14:28*	*1*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*	*02/13/23 15:34*	*02/14/23 14:28*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0106**		0.00399		mg/Kg			02/14/23 16:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 00:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 00:15	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 00:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*69*	*S1-*	*70 - 130*	*02/14/23 14:05*	*02/17/23 00:15*	*1*
o-Terphenyl (Surr)	*74*		*70 - 130*	*02/14/23 14:05*	*02/17/23 00:15*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**228**		5.03		mg/Kg			02/15/23 02:25	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S5 0-0.5'

Date Collected: 02/09/23 13:00
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-9
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		02/13/23 15:34	02/14/23 14:48	1
Toluene	**0.0159**		0.00201		mg/Kg		02/13/23 15:34	02/14/23 14:48	1
Ethylbenzene	**0.0387**		0.00201		mg/Kg		02/13/23 15:34	02/14/23 14:48	1
m,p-Xylenes	**0.417**		0.00402		mg/Kg		02/13/23 15:34	02/14/23 14:48	1
o-Xylene	**0.164**		0.00201		mg/Kg		02/13/23 15:34	02/14/23 14:48	1
Xylenes, Total	**0.581**		0.00402		mg/Kg		02/13/23 15:34	02/14/23 14:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*	*02/13/23 15:34*	*02/14/23 14:48*	*1*
1,4-Difluorobenzene (Surr)	*63*	*S1-*	*70 - 130*	*02/13/23 15:34*	*02/14/23 14:48*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.636**		0.00402		mg/Kg			02/14/23 16:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**969**		49.9		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**248**		49.9		mg/Kg		02/14/23 14:05	02/17/23 00:37	1
Diesel Range Organics (Over C10-C28)	**721**		49.9		mg/Kg		02/14/23 14:05	02/17/23 00:37	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 00:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*86*		*70 - 130*	*02/14/23 14:05*	*02/17/23 00:37*	*1*
o-Terphenyl (Surr)	*84*		*70 - 130*	*02/14/23 14:05*	*02/17/23 00:37*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**91.1**		5.02		mg/Kg			02/15/23 02:30	1

Client Sample ID: S5 0.5'-1'

Date Collected: 02/09/23 13:15
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-10
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 15:09	1
Toluene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 15:09	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 15:09	1
m,p-Xylenes	<0.00398	U	0.00398		mg/Kg		02/13/23 15:34	02/14/23 15:09	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 15:09	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		02/13/23 15:34	02/14/23 15:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*	*02/13/23 15:34*	*02/14/23 15:09*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*02/13/23 15:34*	*02/14/23 15:09*	*1*

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S5 0.5'-1'

Lab Sample ID: 880-24558-10
Matrix: Solid
Date Collected: 02/09/23 13:15
Date Received: 02/10/23 08:37

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			02/14/23 16:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		02/14/23 14:05	02/17/23 01:00	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		02/14/23 14:05	02/17/23 01:00	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		02/14/23 14:05	02/17/23 01:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*89*		*70 - 130*	*02/14/23 14:05*	*02/17/23 01:00*	*1*
o-Terphenyl (Surr)	*89*		*70 - 130*	*02/14/23 14:05*	*02/17/23 01:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**204**		4.98		mg/Kg			02/15/23 02:34	1

Client Sample ID: S6 0-0.5'

Lab Sample ID: 880-24558-11
Matrix: Solid
Date Collected: 02/09/23 13:30
Date Received: 02/10/23 08:37

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		02/13/23 15:34	02/14/23 16:59	1
Toluene	<0.00198	U	0.00198		mg/Kg		02/13/23 15:34	02/14/23 16:59	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		02/13/23 15:34	02/14/23 16:59	1
m,p-Xylenes	<0.00396	U	0.00396		mg/Kg		02/13/23 15:34	02/14/23 16:59	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		02/13/23 15:34	02/14/23 16:59	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		02/13/23 15:34	02/14/23 16:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*	*02/13/23 15:34*	*02/14/23 16:59*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*02/13/23 15:34*	*02/14/23 16:59*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			02/15/23 10:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 01:45	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 01:45	1

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Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S6 0-0.5'

Lab Sample ID: 880-24558-11
Matrix: Solid
Date Collected: 02/09/23 13:30
Date Received: 02/10/23 08:37

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 01:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*86*		*70 - 130*	*02/14/23 14:05*	*02/17/23 01:45*	*1*
o-Terphenyl (Surr)	*85*		*70 - 130*	*02/14/23 14:05*	*02/17/23 01:45*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.78**		4.96		mg/Kg			02/15/23 02:39	1

Client Sample ID: S6 0.5'-1'

Lab Sample ID: 880-24558-12
Matrix: Solid
Date Collected: 02/09/23 13:45
Date Received: 02/10/23 08:37

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 17:19	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 17:19	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 17:19	1
m,p-Xylenes	<0.00401	U	0.00401		mg/Kg		02/13/23 15:34	02/14/23 17:19	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 17:19	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		02/13/23 15:34	02/14/23 17:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*127*		*70 - 130*	*02/13/23 15:34*	*02/14/23 17:19*	*1*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*	*02/13/23 15:34*	*02/14/23 17:19*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			02/15/23 10:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 02:07	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 02:07	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 02:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*90*		*70 - 130*	*02/14/23 14:05*	*02/17/23 02:07*	*1*
o-Terphenyl (Surr)	*91*		*70 - 130*	*02/14/23 14:05*	*02/17/23 02:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**29.5**		4.96		mg/Kg			02/15/23 02:53	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S7 0-0.5'

Date Collected: 02/09/23 14:00
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-13
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 17:39	1
Toluene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 17:39	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 17:39	1
m,p-Xylenes	<0.00398	U	0.00398		mg/Kg		02/13/23 15:34	02/14/23 17:39	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 17:39	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		02/13/23 15:34	02/14/23 17:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*	*02/13/23 15:34*	*02/14/23 17:39*	*1*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*	*02/13/23 15:34*	*02/14/23 17:39*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			02/15/23 10:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 02:30	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 02:30	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 02:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*77*		*70 - 130*	*02/14/23 14:05*	*02/17/23 02:30*	*1*
o-Terphenyl (Surr)	*76*		*70 - 130*	*02/14/23 14:05*	*02/17/23 02:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37.2**		4.97		mg/Kg			02/15/23 02:58	1

Client Sample ID: S7 0.5'-1'

Date Collected: 02/09/23 14:15
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-14
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 18:00	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 18:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 18:00	1
m,p-Xylenes	<0.00399	U	0.00399		mg/Kg		02/13/23 15:34	02/14/23 18:00	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 18:00	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		02/13/23 15:34	02/14/23 18:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*	*02/13/23 15:34*	*02/14/23 18:00*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*02/13/23 15:34*	*02/14/23 18:00*	*1*

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S7 0.5'-1'

Lab Sample ID: 880-24558-14
Matrix: Solid
Date Collected: 02/09/23 14:15
Date Received: 02/10/23 08:37

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			02/15/23 10:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 02:52	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 02:52	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/14/23 14:05	02/17/23 02:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*80*		*70 - 130*	*02/14/23 14:05*	*02/17/23 02:52*	*1*
o-Terphenyl (Surr)	*82*		*70 - 130*	*02/14/23 14:05*	*02/17/23 02:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**226**		5.03		mg/Kg			02/15/23 03:12	1

Client Sample ID: S8 0-0.5'

Lab Sample ID: 880-24558-15
Matrix: Solid
Date Collected: 02/09/23 00:00
Date Received: 02/10/23 08:37

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		02/13/23 15:34	02/14/23 18:20	1
Toluene	<0.00201	U	0.00201		mg/Kg		02/13/23 15:34	02/14/23 18:20	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		02/13/23 15:34	02/14/23 18:20	1
m,p-Xylenes	<0.00402	U	0.00402		mg/Kg		02/13/23 15:34	02/14/23 18:20	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		02/13/23 15:34	02/14/23 18:20	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		02/13/23 15:34	02/14/23 18:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*127*		*70 - 130*	*02/13/23 15:34*	*02/14/23 18:20*	*1*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*	*02/13/23 15:34*	*02/14/23 18:20*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			02/15/23 10:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 03:15	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 03:15	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S8 0-0.5'

Lab Sample ID: 880-24558-15
Matrix: Solid
Date Collected: 02/09/23 00:00
Date Received: 02/10/23 08:37

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 03:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*67*	*S1-*	*70 - 130*	*02/14/23 14:05*	*02/17/23 03:15*	*1*
o-Terphenyl (Surr)	*72*		*70 - 130*	*02/14/23 14:05*	*02/17/23 03:15*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**131**		5.00		mg/Kg			02/15/23 03:16	1

Client Sample ID: S8 0.5'-1'

Lab Sample ID: 880-24558-16
Matrix: Solid
Date Collected: 02/09/23 00:00
Date Received: 02/10/23 08:37

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 18:41	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 18:41	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 18:41	1
m,p-Xylenes	<0.00401	U	0.00401		mg/Kg		02/13/23 15:34	02/14/23 18:41	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 18:41	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		02/13/23 15:34	02/14/23 18:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*128*		*70 - 130*	*02/13/23 15:34*	*02/14/23 18:41*	*1*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*	*02/13/23 15:34*	*02/14/23 18:41*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			02/15/23 10:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		02/14/23 14:05	02/17/23 03:37	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		02/14/23 14:05	02/17/23 03:37	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		02/14/23 14:05	02/17/23 03:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*71*		*70 - 130*	*02/14/23 14:05*	*02/17/23 03:37*	*1*
o-Terphenyl (Surr)	*76*		*70 - 130*	*02/14/23 14:05*	*02/17/23 03:37*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**56.0**		4.98		mg/Kg			02/15/23 03:21	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S9 0-0.5'

Date Collected: 02/09/23 00:00
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-17
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 19:01	1
Toluene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 19:01	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 19:01	1
m,p-Xylenes	<0.00398	U	0.00398		mg/Kg		02/13/23 15:34	02/14/23 19:01	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 19:01	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		02/13/23 15:34	02/14/23 19:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*126*		*70 - 130*	*02/13/23 15:34*	*02/14/23 19:01*	*1*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*	*02/13/23 15:34*	*02/14/23 19:01*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			02/15/23 10:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 04:00	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 04:00	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 04:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*80*		*70 - 130*	*02/14/23 14:05*	*02/17/23 04:00*	*1*
o-Terphenyl (Surr)	*80*		*70 - 130*	*02/14/23 14:05*	*02/17/23 04:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	118		4.97		mg/Kg			02/15/23 03:26	1

Client Sample ID: S9 0.5'-1'

Date Collected: 02/09/23 00:00
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-18
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 19:22	1
Toluene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 19:22	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 19:22	1
m,p-Xylenes	<0.00398	U	0.00398		mg/Kg		02/13/23 15:34	02/14/23 19:22	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		02/13/23 15:34	02/14/23 19:22	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		02/13/23 15:34	02/14/23 19:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*132*	*S1+*	*70 - 130*	*02/13/23 15:34*	*02/14/23 19:22*	*1*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*	*02/13/23 15:34*	*02/14/23 19:22*	*1*

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S9 0.5'-1'

Date Collected: 02/09/23 00:00
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-18

Matrix: Solid

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			02/15/23 10:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			02/19/23 11:53	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 04:21	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 04:21	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		02/14/23 14:05	02/17/23 04:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*82*		*70 - 130*	*02/14/23 14:05*	*02/17/23 04:21*	*1*
o-Terphenyl (Surr)	*83*		*70 - 130*	*02/14/23 14:05*	*02/17/23 04:21*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**191**		5.02		mg/Kg			02/15/23 03:30	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-24558-1	S1 0-0.5'	112	104
880-24558-1 MS	S1 0-0.5'	102	101
880-24558-1 MSD	S1 0-0.5'	108	106
880-24558-2	S1 0.5'-1'	132 S1+	114
880-24558-3	S2 0-0.5'	126	101
880-24558-4	S2 0.5'-1'	117	109
880-24558-5	S3 0-0.5'	172 S1+	91
880-24558-6	S3 0.5'-1'	120	109
880-24558-7	S4 0-0.5'	93	68 S1-
880-24558-8	S4 0.5'-1'	132 S1+	110
880-24558-9	S5 0-0.5'	86	63 S1-
880-24558-10	S5 0.5'-1'	129	104
880-24558-11	S6 0-0.5'	121	106
880-24558-12	S6 0.5'-1'	127	113
880-24558-13	S7 0-0.5'	124	110
880-24558-14	S7 0.5'-1'	123	109
880-24558-15	S8 0-0.5'	127	112
880-24558-16	S8 0.5'-1'	128	110
880-24558-17	S9 0-0.5'	126	110
880-24558-18	S9 0.5'-1'	132 S1+	113
LCS 880-46191/1-A	Lab Control Sample	113	108
LCSD 880-46191/2-A	Lab Control Sample Dup	111	111
MB 880-46191/5-A	Method Blank	113	103

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-24558-1	S1 0-0.5'	84	87
880-24558-1 MS	S1 0-0.5'	74	77
880-24558-1 MSD	S1 0-0.5'	76	75
880-24558-2	S1 0.5'-1'	73	77
880-24558-3	S2 0-0.5'	87	88
880-24558-4	S2 0.5'-1'	86	89
880-24558-5	S3 0-0.5'	84	76
880-24558-6	S3 0.5'-1'	85	84
880-24558-7	S4 0-0.5'	85	87
880-24558-8	S4 0.5'-1'	69 S1-	74
880-24558-9	S5 0-0.5'	86	84
880-24558-10	S5 0.5'-1'	89	89
880-24558-11	S6 0-0.5'	86	85
880-24558-12	S6 0.5'-1'	90	91
880-24558-13	S7 0-0.5'	77	76
880-24558-14	S7 0.5'-1'	80	82

Surrogate Summary

Client: Larson & Associates, Inc.
Job ID: 880-24558-1
Project/Site: Cotton Hills 23 26 27 Federal
SDG: 23-0102-01

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		1CO1	OTPH1								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
880-24558-15	S8 0-0.5'	67 S1-	72								
880-24558-16	S8 0.5'-1'	71	76								
880-24558-17	S9 0-0.5'	80	80								
880-24558-18	S9 0.5'-1'	82	83								
LCS 880-46322/2-A	Lab Control Sample	110	113								
LCSD 880-46322/3-A	Lab Control Sample Dup	95	101								
MB 880-46322/1-A	Method Blank	95	101								

Surrogate Legend

1CO = 1-Chlorooctane (Surr)
OTPH = o-Terphenyl (Surr)

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-46191/5-A
Matrix: Solid
Analysis Batch: 46261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46191

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 11:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 11:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 11:36	1
m,p-Xylenes	<0.00400	U	0.00400		mg/Kg		02/13/23 15:34	02/14/23 11:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/13/23 15:34	02/14/23 11:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/13/23 15:34	02/14/23 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*02/13/23 15:34*	*02/14/23 11:36*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*02/13/23 15:34*	*02/14/23 11:36*	*1*

Lab Sample ID: LCS 880-46191/1-A
Matrix: Solid
Analysis Batch: 46261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46191

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1138		mg/Kg		114	70 - 130		
Toluene			0.100	0.1068		mg/Kg		107	70 - 130		
Ethylbenzene			0.100	0.1052		mg/Kg		105	70 - 130		
m,p-Xylenes			0.200	0.2212		mg/Kg		111	70 - 130		
o-Xylene			0.100	0.1068		mg/Kg		107	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: LCSD 880-46191/2-A
Matrix: Solid
Analysis Batch: 46261

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 46191

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1088		mg/Kg		109	70 - 130	4	35
Toluene			0.100	0.1019		mg/Kg		102	70 - 130	5	35
Ethylbenzene			0.100	0.1005		mg/Kg		100	70 - 130	5	35
m,p-Xylenes			0.200	0.2134		mg/Kg		107	70 - 130	4	35
o-Xylene			0.100	0.1035		mg/Kg		103	70 - 130	3	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*

Lab Sample ID: 880-24558-1 MS
Matrix: Solid
Analysis Batch: 46261

Client Sample ID: S1 0-0.5'
Prep Type: Total/NA
Prep Batch: 46191

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00202	U	0.0996	0.09360		mg/Kg		94	70 - 130		
Toluene	<0.00202	U	0.0996	0.07794		mg/Kg		78	70 - 130		

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-24558-1 MS
Matrix: Solid
Analysis Batch: 46261

Client Sample ID: S1 0-0.5'
Prep Type: Total/NA
Prep Batch: 46191

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.00430	F1	0.0996	0.06526	F1	mg/Kg		61	70 - 130
m,p-Xylenes	<0.00403	U F1	0.199	0.1334	F1	mg/Kg		65	70 - 130
o-Xylene	0.00208	F1	0.0996	0.05882	F1	mg/Kg		57	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-24558-1 MSD
Matrix: Solid
Analysis Batch: 46261

Client Sample ID: S1 0-0.5'
Prep Type: Total/NA
Prep Batch: 46191

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U	0.0990	0.1036		mg/Kg		105	70 - 130	10	35
Toluene	<0.00202	U	0.0990	0.08890		mg/Kg		90	70 - 130	13	35
Ethylbenzene	0.00430	F1	0.0990	0.07772		mg/Kg		74	70 - 130	17	35
m,p-Xylenes	<0.00403	U F1	0.198	0.1586		mg/Kg		78	70 - 130	17	35
o-Xylene	0.00208	F1	0.0990	0.07163		mg/Kg		70	70 - 130	20	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-46322/1-A
Matrix: Solid
Analysis Batch: 46477

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46322

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/14/23 14:00	02/16/23 19:48	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/14/23 14:00	02/16/23 19:48	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/14/23 14:00	02/16/23 19:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane (Surr)	*95*		*70 - 130*	*02/14/23 14:00*	*02/16/23 19:48*	*1*
o-Terphenyl (Surr)	*101*		*70 - 130*	*02/14/23 14:00*	*02/16/23 19:48*	*1*

Lab Sample ID: LCS 880-46322/2-A
Matrix: Solid
Analysis Batch: 46477

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46322

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	1122		mg/Kg		112	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1106		mg/Kg		111	70 - 130

Eurofins Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-46322/2-A
Matrix: Solid
Analysis Batch: 46477

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46322

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane (Surr)	110		70 - 130
o-Terphenyl (Surr)	113		70 - 130

Lab Sample ID: LCSD 880-46322/3-A
Matrix: Solid
Analysis Batch: 46477

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 46322

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	978.9		mg/Kg		98	70 - 130	14	20
Diesel Range Organics (Over C10-C28)			1000	985.2		mg/Kg		99	70 - 130	12	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane (Surr)	95		70 - 130
o-Terphenyl (Surr)	101		70 - 130

Lab Sample ID: 880-24558-1 MS
Matrix: Solid
Analysis Batch: 46477

Client Sample ID: S1 0-0.5'
Prep Type: Total/NA
Prep Batch: 46322

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	1000	859.2		mg/Kg		83	70 - 130
Diesel Range Organics (Over C10-C28)	1070	F1	1000	1169	F1	mg/Kg		10	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane (Surr)	74		70 - 130
o-Terphenyl (Surr)	77		70 - 130

Lab Sample ID: 880-24558-1 MSD
Matrix: Solid
Analysis Batch: 46477

Client Sample ID: S1 0-0.5'
Prep Type: Total/NA
Prep Batch: 46322

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	1000	922.2		mg/Kg		89	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	1070	F1	1000	1202	F1	mg/Kg		13	70 - 130	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane (Surr)	76		70 - 130
o-Terphenyl (Surr)	75		70 - 130

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-46279/1-A
Matrix: Solid
Analysis Batch: 46341

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			02/15/23 01:20	1

Lab Sample ID: LCS 880-46279/2-A
Matrix: Solid
Analysis Batch: 46341

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.6		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-46279/3-A
Matrix: Solid
Analysis Batch: 46341

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	239.1		mg/Kg		96	90 - 110	5	20

Lab Sample ID: 880-24558-1 MS
Matrix: Solid
Analysis Batch: 46341

Client Sample ID: S1 0-0.5'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	125		251	383.6		mg/Kg		103	90 - 110		

Lab Sample ID: 880-24558-1 MSD
Matrix: Solid
Analysis Batch: 46341

Client Sample ID: S1 0-0.5'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	125		251	382.5		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 880-24558-11 MS
Matrix: Solid
Analysis Batch: 46341

Client Sample ID: S6 0-0.5'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	9.78		248	255.1		mg/Kg		99	90 - 110		

Lab Sample ID: 880-24558-11 MSD
Matrix: Solid
Analysis Batch: 46341

Client Sample ID: S6 0-0.5'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	9.78		248	241.3		mg/Kg		93	90 - 110	6	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

GC VOA

Prep Batch: 46191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-24558-1	S1 0-0.5'	Total/NA	Solid	5035	
880-24558-2	S1 0.5'-1'	Total/NA	Solid	5035	
880-24558-3	S2 0-0.5'	Total/NA	Solid	5035	
880-24558-4	S2 0.5'-1'	Total/NA	Solid	5035	
880-24558-5	S3 0-0.5'	Total/NA	Solid	5035	
880-24558-6	S3 0.5'-1'	Total/NA	Solid	5035	
880-24558-7	S4 0-0.5'	Total/NA	Solid	5035	
880-24558-8	S4 0.5'-1'	Total/NA	Solid	5035	
880-24558-9	S5 0-0.5'	Total/NA	Solid	5035	
880-24558-10	S5 0.5'-1'	Total/NA	Solid	5035	
880-24558-11	S6 0-0.5'	Total/NA	Solid	5035	
880-24558-12	S6 0.5'-1'	Total/NA	Solid	5035	
880-24558-13	S7 0-0.5'	Total/NA	Solid	5035	
880-24558-14	S7 0.5'-1'	Total/NA	Solid	5035	
880-24558-15	S8 0-0.5'	Total/NA	Solid	5035	
880-24558-16	S8 0.5'-1'	Total/NA	Solid	5035	
880-24558-17	S9 0-0.5'	Total/NA	Solid	5035	
880-24558-18	S9 0.5'-1'	Total/NA	Solid	5035	
MB 880-46191/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-46191/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-46191/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-24558-1 MS	S1 0-0.5'	Total/NA	Solid	5035	
880-24558-1 MSD	S1 0-0.5'	Total/NA	Solid	5035	

Analysis Batch: 46261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-24558-1	S1 0-0.5'	Total/NA	Solid	8021B	46191
880-24558-2	S1 0.5'-1'	Total/NA	Solid	8021B	46191
880-24558-3	S2 0-0.5'	Total/NA	Solid	8021B	46191
880-24558-4	S2 0.5'-1'	Total/NA	Solid	8021B	46191
880-24558-5	S3 0-0.5'	Total/NA	Solid	8021B	46191
880-24558-6	S3 0.5'-1'	Total/NA	Solid	8021B	46191
880-24558-7	S4 0-0.5'	Total/NA	Solid	8021B	46191
880-24558-8	S4 0.5'-1'	Total/NA	Solid	8021B	46191
880-24558-9	S5 0-0.5'	Total/NA	Solid	8021B	46191
880-24558-10	S5 0.5'-1'	Total/NA	Solid	8021B	46191
880-24558-11	S6 0-0.5'	Total/NA	Solid	8021B	46191
880-24558-12	S6 0.5'-1'	Total/NA	Solid	8021B	46191
880-24558-13	S7 0-0.5'	Total/NA	Solid	8021B	46191
880-24558-14	S7 0.5'-1'	Total/NA	Solid	8021B	46191
880-24558-15	S8 0-0.5'	Total/NA	Solid	8021B	46191
880-24558-16	S8 0.5'-1'	Total/NA	Solid	8021B	46191
880-24558-17	S9 0-0.5'	Total/NA	Solid	8021B	46191
880-24558-18	S9 0.5'-1'	Total/NA	Solid	8021B	46191
MB 880-46191/5-A	Method Blank	Total/NA	Solid	8021B	46191
LCS 880-46191/1-A	Lab Control Sample	Total/NA	Solid	8021B	46191
LCSD 880-46191/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	46191
880-24558-1 MS	S1 0-0.5'	Total/NA	Solid	8021B	46191
880-24558-1 MSD	S1 0-0.5'	Total/NA	Solid	8021B	46191

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

GC VOA

Analysis Batch: 46335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-24558-1	S1 0-0.5'	Total/NA	Solid	Total BTEX	
880-24558-2	S1 0.5'-1'	Total/NA	Solid	Total BTEX	
880-24558-3	S2 0-0.5'	Total/NA	Solid	Total BTEX	
880-24558-4	S2 0.5'-1'	Total/NA	Solid	Total BTEX	
880-24558-5	S3 0-0.5'	Total/NA	Solid	Total BTEX	
880-24558-6	S3 0.5'-1'	Total/NA	Solid	Total BTEX	
880-24558-7	S4 0-0.5'	Total/NA	Solid	Total BTEX	
880-24558-8	S4 0.5'-1'	Total/NA	Solid	Total BTEX	
880-24558-9	S5 0-0.5'	Total/NA	Solid	Total BTEX	
880-24558-10	S5 0.5'-1'	Total/NA	Solid	Total BTEX	
880-24558-11	S6 0-0.5'	Total/NA	Solid	Total BTEX	
880-24558-12	S6 0.5'-1'	Total/NA	Solid	Total BTEX	
880-24558-13	S7 0-0.5'	Total/NA	Solid	Total BTEX	
880-24558-14	S7 0.5'-1'	Total/NA	Solid	Total BTEX	
880-24558-15	S8 0-0.5'	Total/NA	Solid	Total BTEX	
880-24558-16	S8 0.5'-1'	Total/NA	Solid	Total BTEX	
880-24558-17	S9 0-0.5'	Total/NA	Solid	Total BTEX	
880-24558-18	S9 0.5'-1'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 46322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-24558-1	S1 0-0.5'	Total/NA	Solid	8015NM Prep	
880-24558-2	S1 0.5'-1'	Total/NA	Solid	8015NM Prep	
880-24558-3	S2 0-0.5'	Total/NA	Solid	8015NM Prep	
880-24558-4	S2 0.5'-1'	Total/NA	Solid	8015NM Prep	
880-24558-5	S3 0-0.5'	Total/NA	Solid	8015NM Prep	
880-24558-6	S3 0.5'-1'	Total/NA	Solid	8015NM Prep	
880-24558-7	S4 0-0.5'	Total/NA	Solid	8015NM Prep	
880-24558-8	S4 0.5'-1'	Total/NA	Solid	8015NM Prep	
880-24558-9	S5 0-0.5'	Total/NA	Solid	8015NM Prep	
880-24558-10	S5 0.5'-1'	Total/NA	Solid	8015NM Prep	
880-24558-11	S6 0-0.5'	Total/NA	Solid	8015NM Prep	
880-24558-12	S6 0.5'-1'	Total/NA	Solid	8015NM Prep	
880-24558-13	S7 0-0.5'	Total/NA	Solid	8015NM Prep	
880-24558-14	S7 0.5'-1'	Total/NA	Solid	8015NM Prep	
880-24558-15	S8 0-0.5'	Total/NA	Solid	8015NM Prep	
880-24558-16	S8 0.5'-1'	Total/NA	Solid	8015NM Prep	
880-24558-17	S9 0-0.5'	Total/NA	Solid	8015NM Prep	
880-24558-18	S9 0.5'-1'	Total/NA	Solid	8015NM Prep	
MB 880-46322/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-46322/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-46322/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-24558-1 MS	S1 0-0.5'	Total/NA	Solid	8015NM Prep	
880-24558-1 MSD	S1 0-0.5'	Total/NA	Solid	8015NM Prep	

Analysis Batch: 46477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-24558-1	S1 0-0.5'	Total/NA	Solid	8015B NM	46322
880-24558-2	S1 0.5'-1'	Total/NA	Solid	8015B NM	46322

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

GC Semi VOA (Continued)

Analysis Batch: 46477 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-24558-3	S2 0-0.5'	Total/NA	Solid	8015B NM	46322
880-24558-4	S2 0.5'-1'	Total/NA	Solid	8015B NM	46322
880-24558-5	S3 0-0.5'	Total/NA	Solid	8015B NM	46322
880-24558-6	S3 0.5'-1'	Total/NA	Solid	8015B NM	46322
880-24558-7	S4 0-0.5'	Total/NA	Solid	8015B NM	46322
880-24558-8	S4 0.5'-1'	Total/NA	Solid	8015B NM	46322
880-24558-9	S5 0-0.5'	Total/NA	Solid	8015B NM	46322
880-24558-10	S5 0.5'-1'	Total/NA	Solid	8015B NM	46322
880-24558-11	S6 0-0.5'	Total/NA	Solid	8015B NM	46322
880-24558-12	S6 0.5'-1'	Total/NA	Solid	8015B NM	46322
880-24558-13	S7 0-0.5'	Total/NA	Solid	8015B NM	46322
880-24558-14	S7 0.5'-1'	Total/NA	Solid	8015B NM	46322
880-24558-15	S8 0-0.5'	Total/NA	Solid	8015B NM	46322
880-24558-16	S8 0.5'-1'	Total/NA	Solid	8015B NM	46322
880-24558-17	S9 0-0.5'	Total/NA	Solid	8015B NM	46322
880-24558-18	S9 0.5'-1'	Total/NA	Solid	8015B NM	46322
MB 880-46322/1-A	Method Blank	Total/NA	Solid	8015B NM	46322
LCS 880-46322/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	46322
LCSD 880-46322/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	46322
880-24558-1 MS	S1 0-0.5'	Total/NA	Solid	8015B NM	46322
880-24558-1 MSD	S1 0-0.5'	Total/NA	Solid	8015B NM	46322

Analysis Batch: 46661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-24558-1	S1 0-0.5'	Total/NA	Solid	8015 NM	
880-24558-2	S1 0.5'-1'	Total/NA	Solid	8015 NM	
880-24558-3	S2 0-0.5'	Total/NA	Solid	8015 NM	
880-24558-4	S2 0.5'-1'	Total/NA	Solid	8015 NM	
880-24558-5	S3 0-0.5'	Total/NA	Solid	8015 NM	
880-24558-6	S3 0.5'-1'	Total/NA	Solid	8015 NM	
880-24558-7	S4 0-0.5'	Total/NA	Solid	8015 NM	
880-24558-8	S4 0.5'-1'	Total/NA	Solid	8015 NM	
880-24558-9	S5 0-0.5'	Total/NA	Solid	8015 NM	
880-24558-10	S5 0.5'-1'	Total/NA	Solid	8015 NM	
880-24558-11	S6 0-0.5'	Total/NA	Solid	8015 NM	
880-24558-12	S6 0.5'-1'	Total/NA	Solid	8015 NM	
880-24558-13	S7 0-0.5'	Total/NA	Solid	8015 NM	
880-24558-14	S7 0.5'-1'	Total/NA	Solid	8015 NM	
880-24558-15	S8 0-0.5'	Total/NA	Solid	8015 NM	
880-24558-16	S8 0.5'-1'	Total/NA	Solid	8015 NM	
880-24558-17	S9 0-0.5'	Total/NA	Solid	8015 NM	
880-24558-18	S9 0.5'-1'	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 46279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-24558-1	S1 0-0.5'	Soluble	Solid	DI Leach	
880-24558-2	S1 0.5'-1'	Soluble	Solid	DI Leach	
880-24558-3	S2 0-0.5'	Soluble	Solid	DI Leach	
880-24558-4	S2 0.5'-1'	Soluble	Solid	DI Leach	

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

HPLC/IC (Continued)

Leach Batch: 46279 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-24558-5	S3 0-0.5'	Soluble	Solid	DI Leach	
880-24558-6	S3 0.5'-1'	Soluble	Solid	DI Leach	
880-24558-7	S4 0-0.5'	Soluble	Solid	DI Leach	
880-24558-8	S4 0.5'-1'	Soluble	Solid	DI Leach	
880-24558-9	S5 0-0.5'	Soluble	Solid	DI Leach	
880-24558-10	S5 0.5'-1'	Soluble	Solid	DI Leach	
880-24558-11	S6 0-0.5'	Soluble	Solid	DI Leach	
880-24558-12	S6 0.5'-1'	Soluble	Solid	DI Leach	
880-24558-13	S7 0-0.5'	Soluble	Solid	DI Leach	
880-24558-14	S7 0.5'-1'	Soluble	Solid	DI Leach	
880-24558-15	S8 0-0.5'	Soluble	Solid	DI Leach	
880-24558-16	S8 0.5'-1'	Soluble	Solid	DI Leach	
880-24558-17	S9 0-0.5'	Soluble	Solid	DI Leach	
880-24558-18	S9 0.5'-1'	Soluble	Solid	DI Leach	
MB 880-46279/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-46279/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-46279/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-24558-1 MS	S1 0-0.5'	Soluble	Solid	DI Leach	
880-24558-1 MSD	S1 0-0.5'	Soluble	Solid	DI Leach	
880-24558-11 MS	S6 0-0.5'	Soluble	Solid	DI Leach	
880-24558-11 MSD	S6 0-0.5'	Soluble	Solid	DI Leach	

Analysis Batch: 46341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-24558-1	S1 0-0.5'	Soluble	Solid	300.0	46279
880-24558-2	S1 0.5'-1'	Soluble	Solid	300.0	46279
880-24558-3	S2 0-0.5'	Soluble	Solid	300.0	46279
880-24558-4	S2 0.5'-1'	Soluble	Solid	300.0	46279
880-24558-5	S3 0-0.5'	Soluble	Solid	300.0	46279
880-24558-6	S3 0.5'-1'	Soluble	Solid	300.0	46279
880-24558-7	S4 0-0.5'	Soluble	Solid	300.0	46279
880-24558-8	S4 0.5'-1'	Soluble	Solid	300.0	46279
880-24558-9	S5 0-0.5'	Soluble	Solid	300.0	46279
880-24558-10	S5 0.5'-1'	Soluble	Solid	300.0	46279
880-24558-11	S6 0-0.5'	Soluble	Solid	300.0	46279
880-24558-12	S6 0.5'-1'	Soluble	Solid	300.0	46279
880-24558-13	S7 0-0.5'	Soluble	Solid	300.0	46279
880-24558-14	S7 0.5'-1'	Soluble	Solid	300.0	46279
880-24558-15	S8 0-0.5'	Soluble	Solid	300.0	46279
880-24558-16	S8 0.5'-1'	Soluble	Solid	300.0	46279
880-24558-17	S9 0-0.5'	Soluble	Solid	300.0	46279
880-24558-18	S9 0.5'-1'	Soluble	Solid	300.0	46279
MB 880-46279/1-A	Method Blank	Soluble	Solid	300.0	46279
LCS 880-46279/2-A	Lab Control Sample	Soluble	Solid	300.0	46279
LCSD 880-46279/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	46279
880-24558-1 MS	S1 0-0.5'	Soluble	Solid	300.0	46279
880-24558-1 MSD	S1 0-0.5'	Soluble	Solid	300.0	46279
880-24558-11 MS	S6 0-0.5'	Soluble	Solid	300.0	46279
880-24558-11 MSD	S6 0-0.5'	Soluble	Solid	300.0	46279

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S1 0-0.5'

Lab Sample ID: 880-24558-1
Matrix: Solid
Date Collected: 02/09/23 11:00
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 12:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/14/23 16:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/16/23 20:55	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 01:34	CH	EET MID

Client Sample ID: S1 0.5'-1'

Lab Sample ID: 880-24558-2
Matrix: Solid
Date Collected: 02/09/23 11:15
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 12:25	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/14/23 16:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/16/23 22:01	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 01:48	CH	EET MID

Client Sample ID: S2 0-0.5'

Lab Sample ID: 880-24558-3
Matrix: Solid
Date Collected: 02/09/23 11:30
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 12:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/14/23 16:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/16/23 22:23	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 01:53	CH	EET MID

Client Sample ID: S2 0.5'-1'

Lab Sample ID: 880-24558-4
Matrix: Solid
Date Collected: 02/09/23 11:45
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 13:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/14/23 16:05	SM	EET MID

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S2 0.5'-1'

Lab Sample ID: 880-24558-4
Matrix: Solid
Date Collected: 02/09/23 11:45
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/16/23 22:45	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 01:57	CH	EET MID

Client Sample ID: S3 0-0.5'

Lab Sample ID: 880-24558-5
Matrix: Solid
Date Collected: 02/09/23 12:00
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 13:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/14/23 16:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/16/23 23:07	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 02:02	CH	EET MID

Client Sample ID: S3 0.5'-1'

Lab Sample ID: 880-24558-6
Matrix: Solid
Date Collected: 02/09/23 12:15
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 13:47	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/14/23 16:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/16/23 23:30	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		10			46341	02/15/23 02:16	CH	EET MID

Client Sample ID: S4 0-0.5'

Lab Sample ID: 880-24558-7
Matrix: Solid
Date Collected: 02/09/23 12:30
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 14:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/14/23 16:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/16/23 23:52	SM	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S4 0-0.5'

Lab Sample ID: 880-24558-7
Matrix: Solid
Date Collected: 02/09/23 12:30
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 02:20	CH	EET MID

Client Sample ID: S4 0.5'-1'

Lab Sample ID: 880-24558-8
Matrix: Solid
Date Collected: 02/09/23 12:45
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 14:28	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/14/23 16:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/17/23 00:15	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 02:25	CH	EET MID

Client Sample ID: S5 0-0.5'

Lab Sample ID: 880-24558-9
Matrix: Solid
Date Collected: 02/09/23 13:00
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 14:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/14/23 16:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/17/23 00:37	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 02:30	CH	EET MID

Client Sample ID: S5 0.5'-1'

Lab Sample ID: 880-24558-10
Matrix: Solid
Date Collected: 02/09/23 13:15
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 15:09	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/14/23 16:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/17/23 01:00	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 02:34	CH	EET MID

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S6 0-0.5'

Date Collected: 02/09/23 13:30
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 16:59	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/15/23 10:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/17/23 01:45	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 02:39	CH	EET MID

Client Sample ID: S6 0.5'-1'

Date Collected: 02/09/23 13:45
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 17:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/15/23 10:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/17/23 02:07	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 02:53	CH	EET MID

Client Sample ID: S7 0-0.5'

Date Collected: 02/09/23 14:00
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 17:39	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/15/23 10:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/17/23 02:30	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 02:58	CH	EET MID

Client Sample ID: S7 0.5'-1'

Date Collected: 02/09/23 14:15
Date Received: 02/10/23 08:37

Lab Sample ID: 880-24558-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 18:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/15/23 10:05	SM	EET MID

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S7 0.5'-1'

Lab Sample ID: 880-24558-14
Matrix: Solid
Date Collected: 02/09/23 14:15
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/17/23 02:52	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 03:12	CH	EET MID

Client Sample ID: S8 0-0.5'

Lab Sample ID: 880-24558-15
Matrix: Solid
Date Collected: 02/09/23 00:00
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 18:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/15/23 10:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/17/23 03:15	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 03:16	CH	EET MID

Client Sample ID: S8 0.5'-1'

Lab Sample ID: 880-24558-16
Matrix: Solid
Date Collected: 02/09/23 00:00
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 18:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/15/23 10:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/17/23 03:37	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 03:21	CH	EET MID

Client Sample ID: S9 0-0.5'

Lab Sample ID: 880-24558-17
Matrix: Solid
Date Collected: 02/09/23 00:00
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 19:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/15/23 10:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/17/23 04:00	SM	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Client Sample ID: S9 0-0.5'

Lab Sample ID: 880-24558-17
Matrix: Solid
Date Collected: 02/09/23 00:00
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 03:26	CH	EET MID

Client Sample ID: S9 0.5'-1'

Lab Sample ID: 880-24558-18
Matrix: Solid
Date Collected: 02/09/23 00:00
Date Received: 02/10/23 08:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	46191	02/13/23 15:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46261	02/14/23 19:22	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			46335	02/15/23 10:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			46661	02/19/23 11:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	46322	02/14/23 14:05	SM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46477	02/17/23 04:21	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	46279	02/14/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1			46341	02/15/23 03:30	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: Cotton Hills 23 26 27 Federal

Job ID: 880-24558-1
SDG: 23-0102-01

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-24558-1	S1 0-0.5'	Solid	02/09/23 11:00	02/10/23 08:37
880-24558-2	S1 0.5'-1'	Solid	02/09/23 11:15	02/10/23 08:37
880-24558-3	S2 0-0.5'	Solid	02/09/23 11:30	02/10/23 08:37
880-24558-4	S2 0.5'-1'	Solid	02/09/23 11:45	02/10/23 08:37
880-24558-5	S3 0-0.5'	Solid	02/09/23 12:00	02/10/23 08:37
880-24558-6	S3 0.5'-1'	Solid	02/09/23 12:15	02/10/23 08:37
880-24558-7	S4 0-0.5'	Solid	02/09/23 12:30	02/10/23 08:37
880-24558-8	S4 0.5'-1'	Solid	02/09/23 12:45	02/10/23 08:37
880-24558-9	S5 0-0.5'	Solid	02/09/23 13:00	02/10/23 08:37
880-24558-10	S5 0.5'-1'	Solid	02/09/23 13:15	02/10/23 08:37
880-24558-11	S6 0-0.5'	Solid	02/09/23 13:30	02/10/23 08:37
880-24558-12	S6 0.5'-1'	Solid	02/09/23 13:45	02/10/23 08:37
880-24558-13	S7 0-0.5'	Solid	02/09/23 14:00	02/10/23 08:37
880-24558-14	S7 0.5'-1'	Solid	02/09/23 14:15	02/10/23 08:37
880-24558-15	S8 0-0.5'	Solid	02/09/23 00:00	02/10/23 08:37
880-24558-16	S8 0.5'-1'	Solid	02/09/23 00:00	02/10/23 08:37
880-24558-17	S9 0-0.5'	Solid	02/09/23 00:00	02/10/23 08:37
880-24558-18	S9 0.5'-1'	Solid	02/09/23 00:00	02/10/23 08:37

24558 No. 2933

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 2-10-23 PAGE 1 OF 2

PO#. LAB WORK ORDER#

PROJECT LOCATION OR NAME Cotton Hills 23 26 27 Federal

LAI PROJECT # 23-0102-01 COLLECTOR JH

Data Reported to

TRRP report? ☐ Yes ☒ No

TIME ZONE Time zone/State MNT/NM

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION HCl	HNO3	H2SO4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES	FIELD NOTES
S1 0-0.5'		2-9-23	1100	S	1				X		X	202
0.5-1'			1115									
S2 0-0.5			1130									
0.5-1			1145									
S3 0-0.5			1200									
0.5-1'			1215									
S4 0-0.5'			1230									
0.5-1'			1245									
S5 0-0.5'			1300									
0.5-1'			1315									
S6 0-0.5'			1330									
0.5-1'			1345									
S7 0-0.5			1400									
0.5-1'		2-9-23	1415	S	1				X		X	

TOTAL 14

880-24558 Chain of Custody

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
Jason Hom	2-10-23 8:37	
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Eurofins

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

LABORATORY USE ONLY:
RECEIVING TEMP 1.2/0.9 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

24558 No. 2934

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

Data Reported to

DATE 2-10-23 PAGE 2 OF 2

PO# LAB WORK ORDER#

PROJECT LOCATION OR NAME Cotton Hills 23 26 27 Federal

LAI PROJECT # 23-0102-01 COLLECTOR JH

TRRP report? ☐ Yes ☒ No

TIME ZONE Time zone/State MNT/NM

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 ☐	TCLP - METALS (RCRA) ☐	TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D W 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
S8 0-0.5'		2-9-23		S	1				X		X		X	X	X																	X		
0.5-1'		"		"	"				"		"		"	"	"																	"		
S9 0-0.5'		"		"	"				"		"		"	"	"																	"		
0.5-1'		2-9-23		S	1				X		X		X	X	X																	X		

Loc: 880
24558

TOTAL 4

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
Jason	2-10-23 837	
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Eurofins

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

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

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-24558-1
SDG Number: 23-0102-01

Login Number: 24558
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

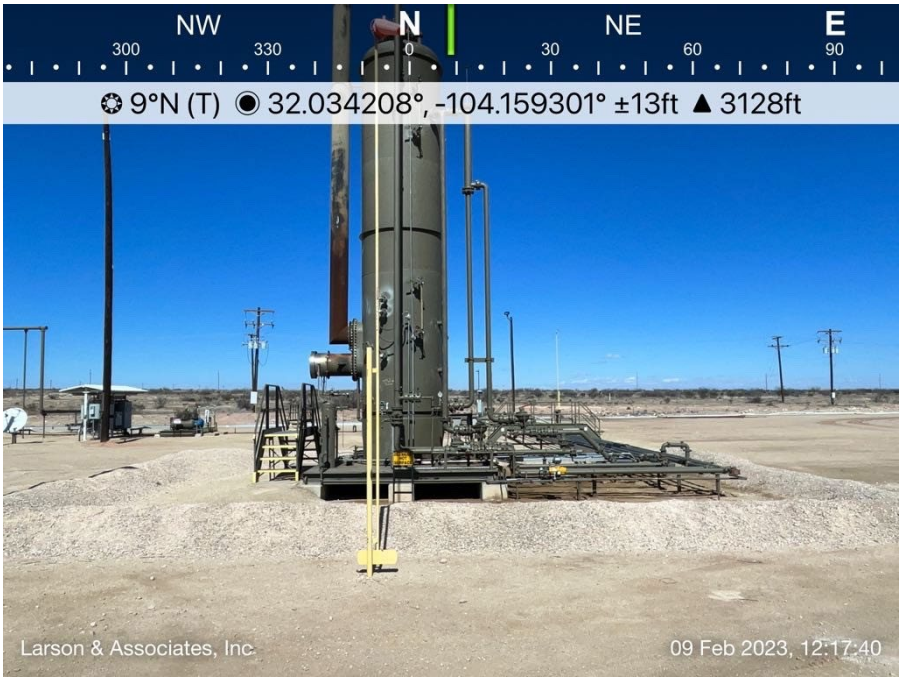
Appendix D

Photographic Documentation

Impacted area viewing west February 9th, 2023.

Impacted area showing deferral request section west February 9th, 2023.

Impacted area viewing north February 9th, 2023.

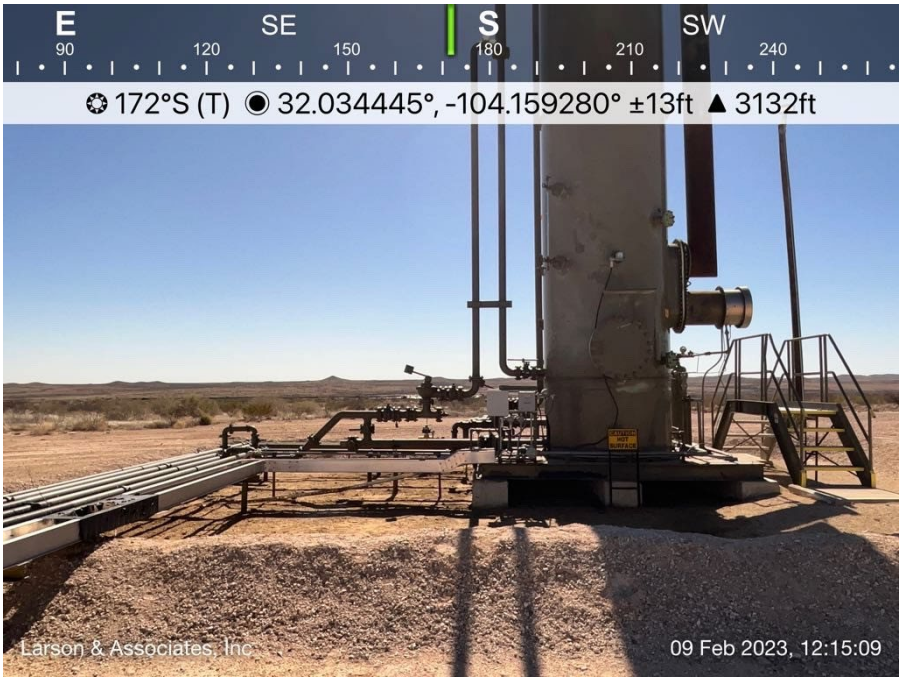


Impacted area viewing north February 9th, 2023.

Impacted area viewing east February 9th, 2023.

Impacted area viewing east February 9th, 2023.

Impacted area viewing south February 9th, 2023.



Impacted area viewing south February 9th, 2023.

Appendix E

NMOCD Communications

From:	Barnhill, Amy
To:	Robert Nelson
Subject:	The Oil Conservation Division (OCD) has rejected the application, Application ID: 231055
Date:	Monday, November 27, 2023 2:49:00 PM

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Tuesday, November 21, 2023 12:36 PM
To: Barnhill, Amy <ABarnhill@chevron.com>
Subject: [**EXTERNAL**] The Oil Conservation Division (OCD) has rejected the application, Application ID: 231055

To whom it may concern (c/o Amy Barnhill for CHEVRON U S A INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2300450334, for the following reasons:

- **Due to the shallow depth of groundwater and the presence of hydrocarbons, a deferral cannot be granted. A hydrovac/shovel would need to be used to safely remove the contaminated soil around equipment and pipelines. The release will need to be remediated to the strictest closure criteria limits (600 mg/kg, Chlorides, 100 mg/kg TPH, etc.). If you feel the depth to groundwater is >50', a shallow borehole can be drilled to 51' allowing for verification of the depth. If water is not visible after reaching bottom-hole and waiting 72 hours, the OCD will accept this as evidence. OCD would need the driller's log. Chevron has until 12/21/23 to submit a revised remediation workplan.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 231055.
Please review and make the required correction(s) prior to resubmitting.
If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,
Shelly Wells
Environmental Specialist-A
505-469-7520
Shelly.Wells@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

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

QUESTIONS

Action 295991

QUESTIONS

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 295991
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2300450334**
Incident Name	**NAPP2300450334 COTTON HILLS TANK BATTERY @ 0**
Incident Type	**Oil Release**
Incident Status	**Remediation Plan Received**
Incident Facility	**[fAPP2131333664] Cotton Hills Tank Battery**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	COTTON HILLS TANK BATTERY
Date Release Discovered	12/25/2022
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Oil Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Equipment Failure | Valve | Crude Oil | Released: 11 BBL | Recovered: 0 BBL | Lost: 11 BBL.
Produced Water Released (bbls) Details	Cause: Equipment Failure | Valve | Produced Water | Released: 11 BBL | Recovered: 0 BBL | Lost: 11 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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QUESTIONS (continued)

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 295991
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**No**
Reasons why this would be considered a submission for a notification of a major release	*Unavailable.*
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*
Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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.

I hereby agree and sign off to the above statement	Name: Amy Barnhill Title: Waste & Water Specialist Email: ABarnhill@chevron.com Date: 12/19/2023

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QUESTIONS (continued)

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 295991
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). 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 in feet below ground surface (ft bgs)	Between 26 and 50 (ft.)
What method was used to determine the depth to ground water	U.S. Geological Survey
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Greater than 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	600
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	100
GRO+DRO (EPA SW-846 Method 8015M)	0
BTEX (EPA SW-846 Method 8021B or 8260B)	50
Benzene (EPA SW-846 Method 8021B or 8260B)	10
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	03/01/2024
On what date will (or did) the final sampling or liner inspection occur	04/01/2024
On what date will (or was) the remediation complete(d)	04/15/2024
What is the estimated surface area (in square feet) that will be reclaimed	1058
What is the estimated volume (in cubic yards) that will be reclaimed	42
What is the estimated surface area (in square feet) that will be remediated	1058
What is the estimated volume (in cubic yards) that will be remediated	42
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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Santa Fe, NM 87505

QUESTIONS (continued)

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 295991
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	LEA LAND LANDFILL [fEEM0112342028]
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
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.	
I hereby agree and sign off to the above statement	Name: Amy Barnhill Title: Waste & Water Specialist Email: ABarnhill@chevron.com Date: 12/19/2023
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 295991
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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

QUESTIONS (continued)

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 295991
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	***{Unavailable.}***

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	No

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CONDITIONS

Action 295991

CONDITIONS

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	Action Number: 295991
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
scwells	None	12/19/2023