

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	NAPP2111150780
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Spur Energy Partners	OGRID 328947
Contact Name: Todd Mucha	Contact Telephone: 281-795-2286
Contact email: Todd@spurepllc.com	Incident # (assigned by OCD) NAPP2111150780
Contact mailing address: 920 Memorial City Way, Suite 1400, Houston TX 77024	

Location of Release Source

Latitude 32.625342 Longitude -104.449393
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Morris Boyd 1H Battery	Site Type: Tank Battery
Date Release Discovered: 10/24/2019	API# (if applicable)

Unit Letter	Section	Township	Range	County
P	26	26S	25E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: Ross Ranch INC)

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)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 40	Volume Recovered (bbls) 15
	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: An AST had not been emptied on schedule, resulting in the tank being overfilled with produced water and the water spilling out. Vacuum trucks were utilized inside the earthen berm to recover all remaining fluids.

State of New Mexico
Oil Conservation Division

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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?
The spill was over 25bbls.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, Notice was provided by Jerry Mathews emailing the NMOCD District 2 Artesia office. On October 24, 2019

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.

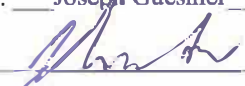
If all the actions described above have not been undertaken, explain why:

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: Joseph Guesnier

Title: Staff Scientist

Signature: 

Date: 5/13/2021

email: jrguesnier@terracon.com

Telephone: (806) 544-9276

OCD Only

Received by: _____

Date: _____

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Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>40</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☒ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: <i>Each of the following items must be included in the report.</i> ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. ☒ Field data ☒ Data table of soil contaminant concentration data ☒ Depth to water determination ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release ☒ Boring or excavation logs ☒ Photographs including date and GIS information ☒ Topographic/Aerial maps ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Oil Conservation Division

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

Printed Name: Joseph Guesnier Title: Staff Scientist
Signature:  Date: 5/13/2021
email: jrguesnier@terracon.com Telephone: (806) 544-9276

OCD Only

Received by: Ramona Marcus Date: 5/17/2021

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Remediation Plan

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

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

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

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

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Printed Name: Joseph GuesnierTitle: Staff ScientistSignature: [Signature]Date: 5-13-2021email: jrguesnier@redaccon.comTelephone: (806) 544-9276**OCD Only**

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral ApprovedSignature: Ramona MarcusDate: 5/17/2021

Oil Conservation Division

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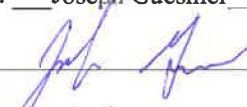
Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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Printed Name: Joseph Guesnier Title: Staff Scientist
 Signature:  Date: 5/13/2021
 email: jrguesnier@terracon.com Telephone: (806) 544-9276

OCD Only

Received by: Ramona Marcus Date: 5/17/2021

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____
 Printed Name: _____ Title: _____

Oil Conservation Division

Incident ID	NAPP2111150780
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Printed Name: Joseph Guesnier Title: Staff Scientist
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 email: jrguesnier@terracon.com Telephone: (806) 544-9276

OCD Only

Received by: Ramona Marcus Date: 5/17/2021

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Closure Approved by: Robert Hamlet Date: 7/21/2021
 Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced

Closure of Release Investigation and Remedial Action Plan

General Site Information:

Morris Boyd 1H Battery

Site Contact:

Todd Mucha, Spur Energy Partners
920 Memorial City Way, Suite 1000, Houston, Texas 77024
(281) 795-2286

Depth to Ground Water

less than 50 below grade surface

Distance to Nearest Surface Water

Brantley Lake (Northwest-Central Eddy County, TX), approximately 4.0 miles to the Southeast

Driving Directions

From Hwy 285 head West on Rock Daisy Road for 2.23 miles, then turn North and for 0.10 miles. The site will be 0.05 miles to the West.

Legal Description

Unit P, Section 26, T26S, R25E, Eddy County, New Mexico

May 13, 2021

Terracon Project No. AR197312

Prepared for:

Spur Energy Partners
Houston, Texas

Prepared by:

Terracon Consultants, Inc.
Lubbock, Texas

Offices Nationwide
Employee-Owned

Established in 1965
terracon.com

Terracon

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

May 13, 2021



Spur Energy Partners
920 Memorial City Way, Suite 1000
Houston, Texas 77024

Attn: Mr. Todd Mucha
P: 281-795-2286
E: todd@spurepllc.com

RE: Closure of Release Investigation and Remedial Action Plan
Morris Boyd 1H Battery
Unit P, Section 26, T26 South, R25 East
Eddy County, New Mexico
Terracon Project No. AR197312

Dear Mr. Mucha,

Terracon Consultants, Inc. (Terracon) is pleased to submit our Closure of Release Investigation and Remedial Action Plan (RAP) for the site referenced above. The Closure of Release Investigation and RAP was developed in accordance with the New Mexico Oil Conservation Division (NMOCD) regulations concerning response actions required for releases of crude took the following actions to be taken to achieve protection of fresh water and the environment in accordance with NMOCD regulations. Terracon developed the Release Investigation and closure in general accordance with our MSA dated April 29, 2019.

- Based on the magnitude of chloride and hydrocarbon concentrations detected within the release margins to depths subject to NMOCD Reclamation requirements, approximately 1,250 cubic yards (cy) of chloride and Total Petroleum Hydrocarbons (TPH) impacted material was required to be excavated and disposed of at a permitted disposal facility under manifest.
- Following excavation to restrictive layer depths, vertical and horizontal delineation samples were collected from the base and walls of the excavation to confirm the remaining levels of soil contaminants are below the desired NMOCD remediation action level (RAL).
- Based on the anticipated depth to groundwater and confirmed vertical delineation, a remedial response was not warranted within the soils at depths greater than 4 ft. bgs.



Terracon Consultants, Inc. 5847 50th St. Lubbock, Texas 79424
P (806) 300 0140 F (806) 797 0947 terracon.com

Geotechnical

Environmental

Construction Materials

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Closure of Release Investigation and Remedial Action Plan

Morris Boyd 1H Battery ■ Eddy County, New Mexico

May 13, 2021 ■ Terracon Project No. AR197312



Terracon appreciates this opportunity to provide environmental services to Spur Energy Partners (Spur). Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,

Terracon Consultants, Inc.

Bryant McBrayer
Staff Scientist
Lubbock

Erin Loyd, P.G. (TX)
Principal
Office Manager – Lubbock



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Closure of Release Investigation and Remedial Action Plan

Morris Boyd 1H Battery

Unit P, Section 26, T26S, R25E

Eddy County, New Mexico

Terracon Project No. AR197270

May 13, 2021

1.0 SITE DESCRIPTION

The site is comprised of an approximate 0.20-acre produced water release, with the entire release residing within the earthen berm of the tank battery. The site is within the Unit Letters P, Section 26, Township 26 South, Range 25 East, Eddy County, New Mexico. The Morris Boyd 1H Battery release consists of two produced water above-ground storage tanks (ASTs), a single crude oil AST, and two separators. A Topographic Map illustrating the site location is included in Figure 1 and a Site Diagram illustrating soil sample locations is included as Figure 2 in Appendix A. A water well record search is also included as New Mexico Office of the State Engineer (NMOSE) Point of Diversion (POD) Location Map as Figure 3 in Appendix A. A map illustrating the site's location in reference to the NMOCD Karst mapping database is presented in Figure 4 in Appendix A.

2.0 SCOPE OF SERVICES

Terracon's scope of services was to investigate the magnitude and extent of the documented release and develop a Remedial Action Plan (RAP) in accordance with the NMOCD requirements that detail site closure activities to be completed. This closure report addresses the October 24, 2019 release of approximately 50 barrels (bbls) of produced water originating from an overfilled AST at the site, and the remediation activities that have taken place at the above-referenced site.

3.0 INTRODUCTION AND NOTIFICATION

The following table provides detailed information regarding the October 24, 2019, produced water release at the Morris Boyd 1H Battery Release Site in Eddy County, New Mexico:

Required Information	Site and Release information	
Responsible party	Spur Energy Partners	
Local contact	Contact: Mr. Todd Mucha	P: (281) 795-2286 E: todd@spurepllc.com
NMOCD Notification	Notice of the release was provided to the NMOCD District 2 Artesia Office by Todd Mucha (Spur) on October 24, 2019.	
Facility description	The Morris Boyd 1H Battery Release is in Eddy County, New	

Responsive ■ Resourceful ■ Reliable

Closure of Release Investigation and Remedial Action Plan

Morris Boyd 1H Battery ■ Eddy County, New Mexico

May 13, 2021 ■ Terracon Project No. AR197312



Required Information	Site and Release information	
	Mexico. It is an approximately 0.2-acre area located within Unit P, Section 26, T26 South, R25 East, approximately 2.23 miles west of Hwy 285, on the north side of Rock Daisy Road. The site was developed as a drilling pad and tank battery.	
Time of incident	October 24, 2019, discovered at 8:00 a.m.	
Discharge event	An AST had not been emptied on schedule, resulting in the tank being overfilled with produced water and the water spilling out. Vacuum trucks were utilized inside of the earthen berm to recover all remaining fluids.	
Type of discharge	The documented fluids release occurred at the tank battery and affected the surface and appears to be to depth.	
Quantity of spilled material	Total Fluids: 40 bbls	Produced Water: 40 bbls
Site characteristics	Relatively flat with drainage following the native ground surface; very gently sloping to the north and east.	
Immediate corrective actions	The pipeline was shut-in, and the vacuum trucks were enlisted to recover the fluids.	

4.0 INITIAL RESPONSE ACTIONS

4.1 Source Elimination

Initial source elimination was accomplished by the Spur foreman shutting in the pipeline and enlisting vacuum trucks to recover fluids. Spur enlisted the help of Terracon to assess the impacted areas of the release and develop a remediation plan of action.

5.0 GENERAL SITE CHARACTERISTICS

5.1 Depth to Groundwater

A water well record search of the New Mexico Office of the State Engineer (NMOSE) Potable Water Well (POD) Geographic Information System (GIS) data portal identified no registered wells within 0.5 miles of the site. One registered well (POD # RA-10496) was identified at 0.71 miles from the site with a stated depth to groundwater of 40 ft. below-grade surface (bgs). NMOSE registered wells within 1.0 miles of the site have a minimum depth to groundwater of 40 feet bgs, with a maximum reported depth of 60 feet bgs. Based on the review of NMOSE available documentation, the depth to groundwater at the site is anticipated to be less than 50 feet bgs.

Closure of Release Investigation and Remedial Action Plan

Morris Boyd 1H Battery ■ Eddy County, New Mexico

May 13, 2021 ■ Terracon Project No. AR197312

**5.2 Distance to Nearest Potable Water Well**

Based on a review of the NMOSE database, registered potable water wells were not present within 0.5 miles of the site.

5.3 Distance to Nearest Surface Water

Brantley Lake is located approximately 4.0 miles to the southeast of the site.

5.4 Soil / Waste Characteristics

Soils at the site are mapped as Reagan-Upton association, 0 to 3 percent slopes, 0 to 60 inches loam. This soil has a surface layer of gravelly sand. Restrictive features are present at more than 80 inches bgs, resulting in the formation being categorized with a low runoff classification.

5.5 Karst Characteristics

Terracon evaluated data from the NMOCD Public FTP Site, Karst map designations in reference to the site location. The site appears to be within a high-level Karst risk area. Based on on-site observations within the extent of the release margins, the potential for Karst formations in this specific area is of high potential. The site has a layer of solid competent rock greater than 80 inches bgs. The full extent of release quantities and excavation activities are not anticipated to be advanced greater than 48 inches bgs.

5.6 Groundwater Quality

Groundwater quality at the site is prominently used for commercial oil and gas production and the nearest well (POD # RA-10496) is being utilized for "limited household, non-commercial trees, lawn, and garden not to exceed one acre and or stock use."

6.0 REGULATORY FRAMEWORK AND RESPONSE ACTION LEVELS

Oil and gas exploration and production facilities in New Mexico are generally regulated by the New Mexico Oil Conservation Division (NMOCD). The NMOCD has issued the *Closure Criteria for Soils Impacted by a Release, June 21, 2018*, and *Restoration, Reclamation, and Re-vegetation (19.15.29.13) NMAC – D (Reclamation of areas no longer in use)* as guidance documents for the remediation and reclamation of sites impacted by releases from oil and gas exploration and production activities. Sections 6.1 and 6.2 below detail the applicability of these guidance documents to the site-specific characteristics associated with the Morris Boyd 1H Battery Release.

Closure of Release Investigation and Remedial Action Plan

Morris Boyd 1H Battery ■ Eddy County, New Mexico

May 13, 2021 ■ Terracon Project No. AR197312



6.1 Remediation Levels

The *Closure Criteria for Soils Impacted by a Release* guidance document provides direction for initial response actions, site assessment, sampling procedures and provides closure criteria based on the depth to groundwater, distance to private and domestic water sources, and the distance to the nearest surface water body as follows:

Closure of Release Investigation and Remedial Action Plan

Morris Boyd 1H Battery ■ Eddy County, New Mexico

May 13, 2021 ■ Terracon Project No. AR197312



Table 1			
Closure Criteria for Soils Impacted by a Release			
Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/L TDS	Constituent	Method*	Limit**
≤50 feet	Chloride***	EPA 300.0 or SM4500 Cl B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015 M	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
51 feet – 100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015 M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015 M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
>100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	20,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015 M	2,500 mg/kg
	TPH (GRO+DRO)	EPA SW-846 Method 8015 M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

*Or other methods approved by the division

**Numerical limits or natural background level, whichever is greater

***This applies to releases of produced water or other fluids, which may contain chloride

Closure of Release Investigation and Remedial Action Plan

Morris Boyd 1H Battery ■ Eddy County, New Mexico

May 13, 2021 ■ Terracon Project No. AR197312



Based on the site-specific characteristics, the applicable NMOCD remediation levels for the Reclamation Zone (surface to 4 ft. bgs) are as follows:

Constituent	Remediation Limit
Chloride	600 mg/kg
TPH (GRO+DRO+MRO)	100 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

7.0 SOIL SAMPLING PROCEDURES

Soil sampling procedures are detailed as follows:

7.1 Soil Sampling Procedures for Laboratory Analysis

Soil Sampling Procedures

Soil sampling for laboratory analysis was conducted according to NMOCD-approved industry standards or other NMOCD-approved procedures. Accepted NMOCD soil sampling procedures and laboratory analytical methods are as follows:

- Collect samples in clean, air-tight glass jars supplied by the laboratory which will conduct the analysis or from a reliable laboratory equipment supplier.
- Label the samples with a unique code for each sample.
- Cool and store samples with cold packs or on ice.
- Promptly ship the sample to the lab for analysis following chain of custody procedures.
- All samples must be analyzed within the holding times for the laboratory analytical method specified by EPA.

Analytical Methods

All soil samples must be analyzed using EPA methods, or by other NMOCD-approved methods and must be analyzed within the holding time specified by the method. Below are laboratory analytical methods the selected laboratory will use for analysis of soil samples analyzed for petroleum-related constituents.

- Chloride – EPA Method 300.0
- Total Petroleum Hydrocarbons – TPH (GRO+DRO+MRO) – EPA Method 8015M
- Benzene, toluene, ethylbenzene and total xylenes (BTEX) – EPA Method 8021B
- Benzene – EPA Method 8021B

Closure of Release Investigation and Remedial Action Plan

Morris Boyd 1H Battery ■ Eddy County, New Mexico

May 13, 2021 ■ Terracon Project No. AR197312



8.0 RELEASE INVESTIGATION DATA EVALUATION

During Terracon's October 24, 2019, and January 31, 2020 release investigation activities, a total of 23 soil samples were collected from the site and analyzed for BTEX, chloride, and/or TPH. Of the 23 soil samples collected, 23 samples were collected from within the release margins and one sample was collected from the stockpiled soils.

8.1 Release Margins Data Evaluation

8.1.1 Reclamation Assessment Data Evaluation

Benzene was detected above applicable laboratory sample detection limits (SDLs) in 11 of the 23 soil samples analyzed within the release margins. The detected Benzene concentrations ranged from 0.0783 mg/kg in soil sample HA-3 (Surface to 0.5 ft bgs) to 12.4 mg/kg in soil sample HA-5 (Surface to 0.5 ft bgs). Three of the soil samples analyzed within the release margins did exhibit Benzene concentrations exceeding the applicable NMOCD RAL for benzene of 10 mg/kg, as summarized in Table 1.

Total BTEX was detected above applicable laboratory SDLs in 20 of the 23 soil samples analyzed within the release margins. The detected Total BTEX concentrations ranged from 0.0136 mg/kg in soil sample HA-2 (0.5 ft bgs to 1 ft bgs) to 418 mg/kg in soil sample HA-5 (Surface to 0.5 ft bgs). Seven of the soil samples analyzed within the release margins did exhibit concentrations exceeding the applicable NMOCD RAL for Total BTEX of 50 mg/kg, as summarized in Table 1.

Chloride was detected above applicable laboratory SDLs in 23 of the 23 soil samples analyzed within the release margins. The chloride concentrations ranged from 126 mg/kg in soil sample HA-2 (4.5 ft bgs to 5 ft bgs) to 11,700 mg/kg in soil sample HA-6 (Surface to 0.5 ft bgs). Nineteen of the soil samples analyzed within the release margins did exhibit chloride concentrations exceeding the applicable NMOCD RAL for chloride of 600 mg/kg, as summarized in Table 1.

Total TPH was detected above applicable laboratory SDLs in 22 of the 22 soil samples analyzed. The Total TPH concentrations ranged from 17.6 mg/kg in soil sample HA-1 (4.5 ft bgs to 5 ft bgs) to 25,400 mg/kg in soil sample HA-4 (surface to 0.5 ft bgs). 20 of the soil samples analyzed within the release margins did exhibit Total TPH concentrations above the NMOCD RAL of 100 mg/kg for Total TPH, as summarized in Table 1.

8.1.2 Remediation Assessment Data Evaluation

At each of the soil boring locations, a soil sample greater than a depth of 5 ft bgs were not obtained due to encountering a restrictive formation at depth.

8.2 Release Investigation Data Summary

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Based on the review of the above release investigation analytical results, the areas within the release margins exhibit concentrations of chloride, Benzene, and Total TPH in multiple locations. Based on these exceedances above NMOCD RALs, additional remedial response actions were implemented at the site.

It is anticipated that released produced water-associated chlorides consolidated upon the cemented layer of the Reagan loam features within the release margins. Based on the presence of the competent rock, further analytical evaluation of deeper horizons appears unwarranted at this time.

8.3 Confirmation Extent Data Evaluation

During Terracon's confirmation sampling event dated, soil samples were collected from the sidewalls and the base of the open excavation in conjunction with reclamation activities. Confirmation composite samples were collected every 200 linear feet along the perimeter of the sidewall, and floor confirmation samples were taken every 200 sq ft, resulting in ??? total soil samples were collected from the site and analyzed for BTEX, Chloride and/or TPH.

8.3.1 Confirmation Assessment Data Evaluation

Benzene was not detected above the applicable laboratory SDLs in the confirmation soil samples. Benzene concentration did not exceed the applicable NMOCD RAL for benzene of 10 mg/kg, as summarized in Table 2.

Total BTEX was detected above applicable laboratory SDLs in 11 of the 42 soil samples analyzed within the release margins. The Total BTEX concentrations ranged from 0.00945 mg/kg in soil sample CS-2.1 (2 ft bgs to 2.5 ft bgs) to 0.0172 mg/kg in soil sample SW-4 (surface to 0.5 ft bgs). The detected Total BTEX concentrations did not exceed the applicable NMOCD RAL for BTEX of 50 mg/kg, as summarized in Table 2.

Chloride was detected above applicable laboratory SDLs in each of the analyzed confirmation samples. The chloride concentrations ranged from 24.1 mg/kg in soil sample CS-2.2 (2 ft bgs to 2.5 ft bgs) to 3,640 mg/kg in soil sample NW-3 (surface to 0.5 ft bgs). A few of the detected chloride concentrations did exceed the applicable NMOCD RAL of 600 mg/kg for chloride in the first four sampling events, the subsequent sampling event on January 28, 2020, only resulted in two samples that were over the applicable NMOCD RAL of 600 mg/kg. The final sampling event on February 4, 2020, confirmed all concentrations were below the NMOCD RALs. The initial soil samples at NW-1 and NW-1.1 (surface to 0.5 ft bgs), and WW-1 (surface to 0.5 ft bgs), and NW-3 (surface to 0.5 ft bgs) were all over NMOCD RAL of 600 mg/kg, but subsequent sampling following additional remedial efforts resulted in all concentrations for these locations to fall under the NMOCD RAL of 600 mg/kg, as summarized in Table 2.

Closure of Release Investigation and Remedial Action Plan

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Total TPH was detected above applicable laboratory SDLs in 15 of the 42 soil samples analyzed within the release margins. The Total TPH concentrations ranged from 0.267 mg/kg in soil sample NW-1 (surface to 0.5 ft bgs) to 310 mg/kg in soil sample CS-6.0 (surface to 0.5 ft bgs). The detected Total TPH concentrations did exceed the applicable NMOCD RAL for a Total TPH of 100 mg/kg. Sampling following additional remedial efforts resulted in all concentrations falling under the NMOCD RAL of 600 mg/kg, as summarized in Table 2.

8.3.2 Confirmation Data Summary

Based on the review of the above confirmation analytical results, the areas surrounding the remediation margins do not exhibit concentrations above NMOCD RAL for benzene, Total BTEX, chloride, and Total TPH. Based on these results below NMOCD RALs, Sections 9.0 and subsequent detail recommended closure of response actions to be implemented at the site. Terracon recommends the restoration of the above-mentioned site on March 1, 2020.

9.0 SOIL RECLAMATION AND REMEDIATION

Impacted soil was remediated, reclaimed, and managed according to the criteria described below, which is intended to protect freshwaters, public health, and the environment from exposure to the above constituents of concern.

9.1 Reclamation Response Objectives

Based on the magnitude of chloride concentrations detected within the release margins to depths subject to NMOCD Reclamation requirements, approximately 3,000 cy of chloride impacted material was excavated and disposed of at a permitted disposal facility under manifest.

9.2 Remediation Response Objectives

Following excavation to recommended Reclamation depths, horizontal delineation samples were collected from the base and walls of the excavation to confirm the remaining levels of soil contaminants are below the desired NMOCD RALs. Based on the proximity of the analyzed samples to this restrictive layer and the magnitude of the chloride concentrations being elevated above 600 mg/kg but below 20,000 mg/kg, Terracon previously recommended hydro-vacating the restrictive feature to wash out the residual presence of chlorides at this restrictive zone to ensure that concentrations are not elevated further at this restrictive interphase. However, Terracon did not encounter significant restrictive features during the remediation activities on site, and Hydro exaction was not warranted to complete the remediation.

Based on the anticipated depth to groundwater, and considering the possibility of Karst formations, it is anticipated that no additional remedial response will be warranted within the soils at depths not affected by the release.

Closure of Release Investigation and Remedial Action Plan

Morris Boyd 1H Battery ■ Eddy County, New Mexico

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**9.3 Soil Management**

The selected method of soil management is removal and disposal at an NMOCD-approved facility. Excavated soils were transported by truck (20 cubic yard capacity) and disposed of at the Lea Land Disposal Facility located in Lea County, New Mexico, based on landfill approvals.

10.0 TERMINATION OF REMEDIAL ACTIONS, FINAL CLOSURE AND REPORTING**10.1 Termination of Reclamation and Remedial Actions**

Reclamation and remedial actions at the site were terminated when the confirmation samples indicate that the above objectives have been completed within the reclamation and remedial depth designations. The reclamation and remedial approaches intend to achieve compliance with NMOCD regulatory objectives in ensuring that any remaining contaminants will not pose a threat to present or foreseeable beneficial use of freshwater, public health, and the environment.

10.2 Final Closure

Upon termination of remedial actions (Sections 6 and 9), the area of the release will be closed by backfilling the excavated area, contouring to surrounding area topography, and reseeded the area with approved-native vegetative seed.

10.3 Final Report

Due to the completion of remedial activities, a final report summarizing actions taken to mitigate environmental damage related to the release has been provided to NMOCD for approval.

APPENDIX A – FIGURES AND TABLES

Figure 1 – Topographic Map

Figure 2 – Site Diagram

Figure 3 – Excavation Site Map

Figure 4 – Contamination Concentration Maps

Figure 5 – Confirmation Concentration Maps

Figure 6 – NMOSE POD Location Map

Figure 7 – Cave Karst Public UCP

Table 2 – Soil Sample Analytical Results



Site Location



Project No.	AR197312
Scale:	1" : 2.5 mi
Source:	Google Earth
Date:	2/10/2020

Terracon
Consulting Engineers & Scientists

5847 50th Street Lubbock, Texas 79424
PH. (806) 300-0140 FAX. (806) 797-0947

Figure 1 - Topographic Map

Morris Boyd 1H Battery

32.625367, -104.449412
Eddy County, New Mexico



Spill Area



Hand Auger

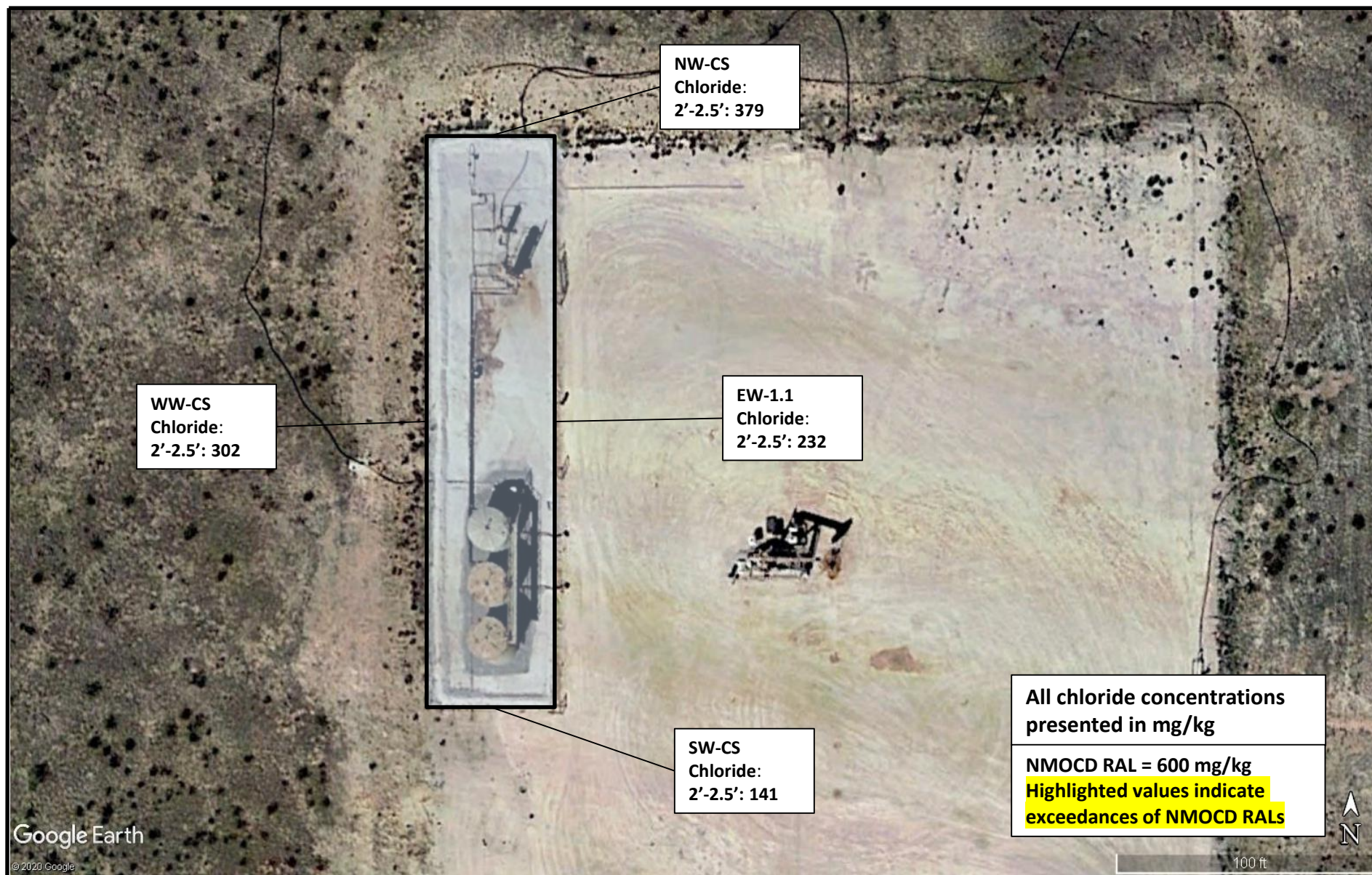


Project No.	AR197312
Scale:	1" = 25'
Source:	Google Earth
Date:	2/24/2020

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Consulting Engineers & Scientists

5847 50th Street Lubbock, Texas 79424
PH. (806) 300-0140 FAX. (806) 797-0947

Figure 2 – Site Diagram
Morris Boyd 1H Battery
32.625367, -104.449412
Eddy County, New Mexico



Release Area



Hand Auger



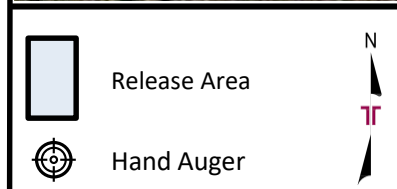
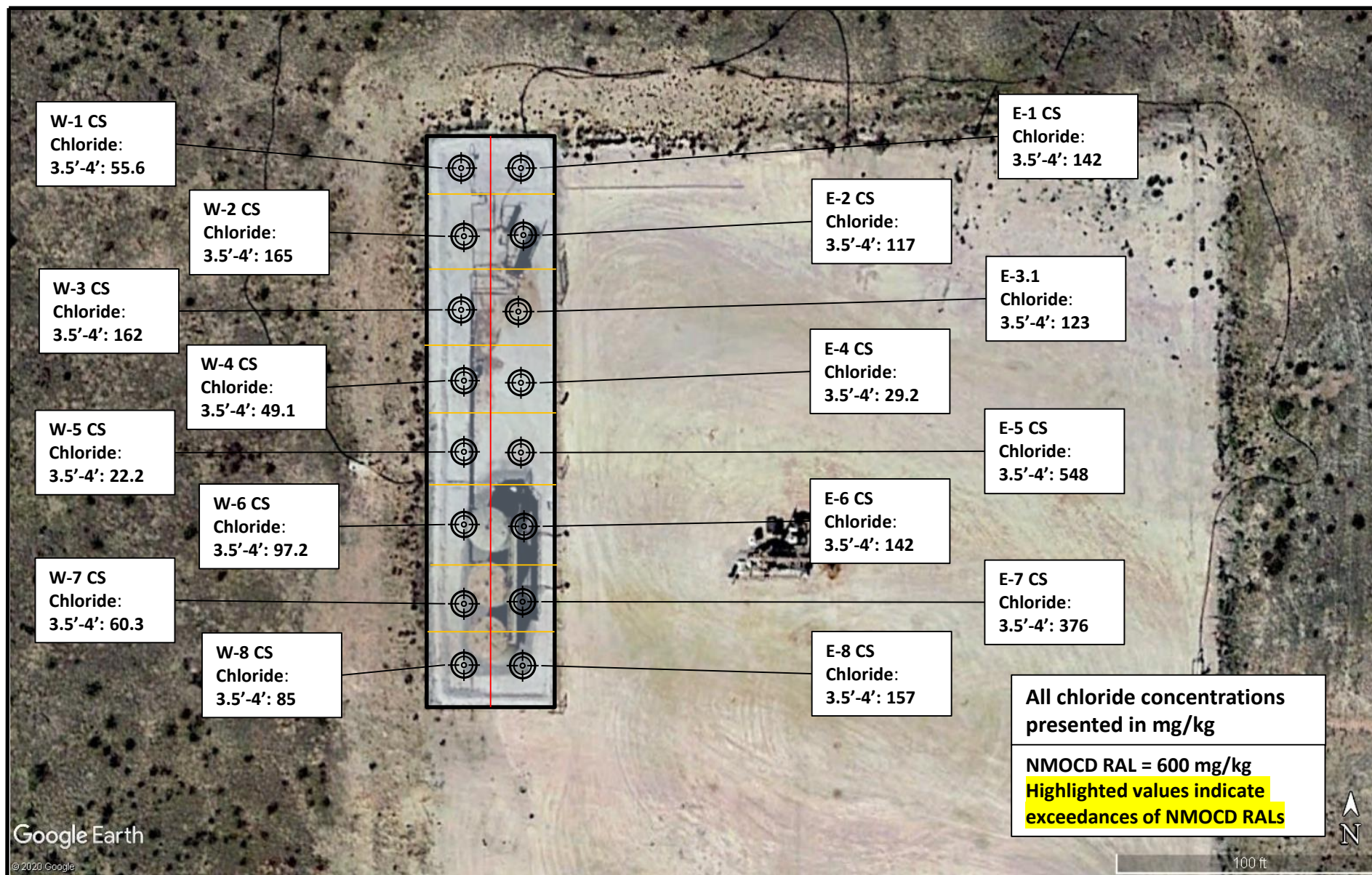
Project No.	AR197312
Scale:	1":12.5'
Source:	Google Earth
Date:	2/10/2020

Terracon
Consulting Engineers & Scientists

5847 50th Street Lubbock, Texas 79424
PH: (806) 300 - 0140 FAX: (806) 797 - 0947

Figure 3 – Contamination Concentration Horizontal Map

Morris Boyd 1H Battery
32.625367, -104.449412
Eddy County, New Mexico



Project No.	AR197312
Scale:	1":12.5'
Source:	Google Earth
Date:	2/10/2020



Figure 4 – Confirmation Concentration Vertical Map

Morris Boyd 1H Battery
32.625367, -104.449412
Eddy County, New Mexico

NMOSD Pod Location Map



5/13/2021, 3:17:38 PM

 Override 1

GIS WATERS PODs

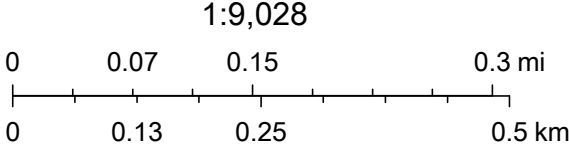
 Active

 OSE District Boundary

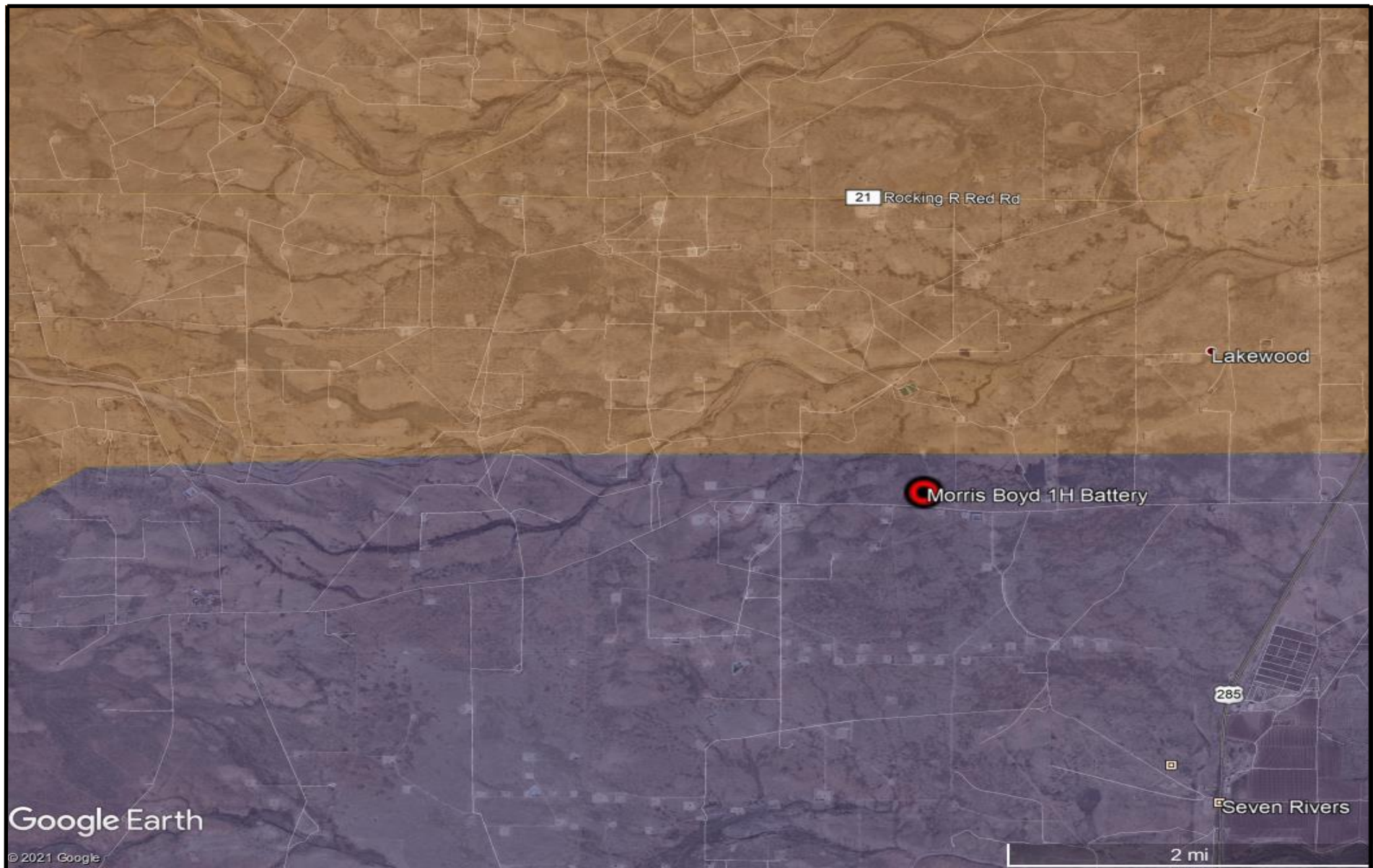
New Mexico State Trust Lands

 Both Estates

 SiteBoundaries



Esri, HERE, iPC, U.S. Department of Energy Office of Legacy Management, Esri, HERE, Garmin, iPC, Maxar



- Site Location
- Low Karst
- Medium Karst
- High Karst



Project No.	AR197312
Scale:	1" : 2 mi
Source:	Google Earth
Date:	5/13/2021

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Consulting Engineers & Scientists

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PH. (806) 300-0140 FAX. (806) 797-0947

Figure 6 – Karst Location Map

Morris Boyd 1H Battery
32.625367, -104.449412
Eddy County, New Mexico

APPENDIX B – PHOTOGRAPHIC LOG

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

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PHOTO 1: View of release site, facing northwest. 8/14/2019



PHOTO 2: View of impacted area west of tank battery, facing north. 10/24/2019

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

Terracon



PHOTO 3: View of impacted area east of tank battery, facing north. 10/24/2019



PHOTO 4: View of impacted area around holding tanks, facing northwest. 10/24/2019

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

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PHOTO 5: View of impacted area, facing west. 10/24/2019



PHOTO 6: View of impacted area around heater treater, facing northwest. 10/24/2019

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

Terracon



PHOTO 7: View of impacted area around VRU, facing west. 10/24/2019



PHOTO 8: View of impacted area around heater treaters, facing southwest. 10/24/2019

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

Terracon



PHOTO 9: View of impacted area, facing south. 10/24/2019



PHOTO 10: View of HA-2, facing north. 10/24/2019

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

Terracon



PHOTO 11: View of HA-1, facing east. 10/24/2019



PHOTO 12: View of HA-5, facing north. 10/24/2019

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

Terracon



PHOTO 13: View of HA-7, facing north. 10/24/2019



PHOTO 14: View of HA-6, facing west. 10/24/2019

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

Terracon



PHOTO 15: View of remediation between the tanks and heater treaters, facing southwest. 1/28/2020



PHOTO 16: View of remediation around heater treaters, facing northwest. 1/28/2020

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

Terracon



PHOTO 17: View of remediation around heater treaters, facing south. 1/28/2020



PHOTO 18: View of remediation around heater treaters, facing south. 1/28/2020

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

Terracon



PHOTO 19: View of remediation between tanks, facing west. 1/28/2020



PHOTO 20: View of remediation between tanks, facing west. 1/28/2020

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

Terracon



PHOTO 21: View of remediation on east side of tank battery, facing north. 1/28/2020



PHOTO 22: View of remediation on west side of tank battery, facing north. 1/28/2020

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

Terracon



PHOTO 23: View of completed remediation, facing south. 8/28/2020



PHOTO 24: View of completed remediation, facing northeast. 8/28/2020

Responsive ■ Resourceful ■ Reliable

Morris Boyd 1H Battery ■ Eddy County, New Mexico
September 21, 2020 ■ Terracon Project No. AR197312

Terracon



PHOTO 25: View of completed remediation, facing northeast. 8/28/2020



PHOTO 26: View of completed remediation, facing southwest. 8/28/2020

Responsive ■ Resourceful ■ Reliable

APPENDIX C – ANALYTICAL REPORT AND CHAIN OF CUSTODY

TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX ¹ , Chloride ² , and TPH ³ Morris Boyd 1H Battery Terracon Project No. AR197312									
Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	MRO	TOTAL
Release Margin Samples (On Pad)									
HA-1	0 - 0.5	Grab	10/24/19	Benzene - 11.6 Toluene - 114 Ethylbenzene - 97.5 Total Xylenes - 154 Total BTEX - 377	2,430	5,110	14,600	1,200	20,900
	0.5 - 1	Grab	10/24/19	Benzene - 8.85 Toluene - 61.7 Ethylbenzene - 55.8 Total Xylenes - 88.9 Total BTEX - 215	2,880	2,010	4,450	902	10,400
	1.5 - 2	Grab	01/31/20	Benzene - 1.77 Toluene - 13.3 Ethylbenzene - 41.6 Total Xylenes - 97.2 Total BTEX - 154	1,270	3,440	3,970	96.4	7,506
	3.5 - 4	Grab	01/31/20	Benzene - 2.04 Toluene - 72.9 Ethylbenzene - 83.2 Total Xylenes - 154 Total BTEX - 312	991	4,510	2,170	38.7	6,719
	4.5 - 5	Grab	01/31/20	Benzene - 0.083 Toluene - 0.256 Ethylbenzene - 0.436 Total Xylenes - 0.922 Total BTEX - 1.61	576	17.3	17.4	17.5	17.6
HA-2	0 - 0.5	Grab	10/24/19	Benzene - <0.0173 Toluene - <0.00893 Ethylbenzene - 0.405 Total Xylenes - 1.11 Total BTEX - 1.52	8,400	30.5	303	52.8	386
	0.5 - 1	Grab	10/24/19	Benzene - <0.00879 Toluene - <0.00455 Ethylbenzene - 0.0136 Total Xylenes - <0.00663 Total BTEX - 0.0136	6,920	16	115	16.9	148
	1.5 - 2	Grab	01/31/20	Benzene - <0.0439 Toluene - 0.437 Ethylbenzene - 2.46 Total Xylenes - 5.78 Total BTEX - 8.68	3,390	343	287	<7.50	630
	3.5 - 4	Grab	01/31/20	Benzene - <0.0089 Toluene - <0.0046 Ethylbenzene - 0.0515 Total Xylenes - 0.093 Total BTEX - 0.145	1,250	18.7	59.8	<7.52	78.5
	4.5 - 5	Grab	01/31/20	Benzene - <0.0085 Toluene - <0.0044 Ethylbenzene - <0.0058 Total Xylenes - <0.0064 Total BTEX - <0.0044	126	2.61	83.8	<7.53	86.41
NMOCD Reclamation Standards ⁴ (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100
NMOCD Remediation and Delineation Standards ⁵ (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/MRO)

4. New Mexico Administration Code (NMAC) Restoration, Reclamation, and Re-vegetation (19.15.29.13) New Mexico Administration Code (NMAC) – D (Reclamation of areas no longer in use) for soils extending to 4 ft. bgs

5. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018

< = Constituent not detected above the indicated laboratory SDL

NA = Not Analyzed

N/A = Not Applicable

Bold and Highlight denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Reclamation and/or Remediation and Delineation Standards.

TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX ¹ , Chloride ² , and TPH ³ Morris Boyd 1H Battery Terracon Project No. AR197312									
Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	MRO	TOTAL
Release Margin Samples (On Pad)									
HA-3	0 - 0.5	Grab	10/24/19	Benzene - 0.0783 Toluene - 4.08 Ethylbenzene - 9.28 Total Xylenes - 17.5 Total BTEX - 30.9	1,360	659	2,710	262	3,630
	0.5 - 1	Grab	10/24/19	Benzene - <0.0176 Toluene - 0.494 Ethylbenzene - 3.11 Total Xylenes - 6.76 Total BTEX - 10.4	2,080	482	1,950	206	2,640
HA-4	0 - 0.5	Grab	10/24/19	Benzene - 10.5 Toluene - 60.9 Ethylbenzene - 55.4 Total Xylenes - 102 Total BTEX - 229	1,650	4,210	20,200	947	25,400
	0.5 - 1	Grab	10/24/19	Benzene - 0.13 Toluene - 3.61 Ethylbenzene - 9.17 Total Xylenes - 57.1 Total BTEX - 70	510	1,770	6,810	429	9,010
HA-5	0 - 0.5	Grab	10/24/19	Benzene - 12.4 Toluene - 123 Ethylbenzene - 105 Total Xylenes - 178 Total BTEX - 418	1,890	5,650	12,500	590	18,700
	0.5 - 1	Grab	10/24/19	Benzene - <0.00888 Toluene - <0.00460 Ethylbenzene - <0.00605 Total Xylenes - <0.00670 Total BTEX - <0.00460	491	19.2	155	58.9	233
HA-6	0 - 0.5	Grab	10/24/19	Benzene - <0.178 Toluene - 2.72 Ethylbenzene - 7.5 Total Xylenes - 20.5 Total BTEX - 30.7	11,700	36.0	3,730	435	4,200
	0.5 - 1	Grab	10/24/19	Benzene - <0.0437 Toluene - 0.145 Ethylbenzene - 0.725 Total Xylenes - 1.58 Total BTEX - 2.45	3,290	61.7	2,510	474	3,050
NMOCD Reclamation Standards ⁴ (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100
NMOCD Remediation and Delineation Standards ⁵ (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/MRO)

4. New Mexico Administration Code (NMAC) Restoration, Reclamation, and Re-vegetation (19.15.29.13) New Mexico Administration Code (NMAC) – D (Reclamation of areas no longer in use) for soils extending to 4 ft. bgs

5. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018

< = Constituent not detected above the indicated laboratory SDL

NA = Not Analyzed

N/A = Not Applicable

Bold and Highlight denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Reclamation and/or Remediation and Delineation Standards.

TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX ¹ , Chloride ² , and TPH ³ Morris Boyd 1H Battery Terracon Project No. AR197312									
Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	MRO	TOTAL
Release Margin Samples (On Pad)									
HA-7	0 - 0.5	Grab	10/24/19	Benzene - 1.29 Toluene - 5.25 Ethylbenzene - 5.15 Total Xylenes - 8.89 Total BTEX - 20.6	5,210	799	17,000	950	18,700
	0.5 - 1	Grab	10/24/19	Benzene - 0.29 Toluene - 1.9 Ethylbenzene - 2.55 Total Xylenes - 8.03 Total BTEX - 12.8	2,480	758	5,850	456	7,060
HA-8	0 - 0.5	Grab	10/24/19	Benzene - <0.0415 Toluene - 0.147 Ethylbenzene - 0.881 Total Xylenes - 2.98 Total BTEX - 4.01	9,100	82.7	3,100	376	3,560
	0.5 - 1	Grab	10/24/19	Benzene - <0.00863 Toluene - <0.00447 Ethylbenzene - 0.0153 Total Xylenes - 0.21 Total BTEX - 0.0363	9,990	14.2	72.1	42.3	129
	1.5 - 2	Grab	10/24/19	Benzene - NA Toluene - NA Ethylbenzene - NA Total Xylenes - NA Total BTEX - NA	9,000	NA	NA	NA	NA
NMOCD Reclamation Standards ⁴ (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100
NMOCD Remediation and Delineation Standards ⁵ (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	100	N/A			100

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/MRO)

4. New Mexico Administration Code (NMAC) Restoration, Reclamation, and Re-vegetation (19.15.29.13) New Mexico Administration Code (NMAC) – D (Reclamation of areas no longer in use) for soils extending to 4 ft. bgs

5. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018

< = Constituent not detected above the indicated laboratory SDL

NA = Not Analyzed

N/A = Not Applicable

Bold and Highlight denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Reclamation and/or Remediation and Delineation Standards.

TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX ¹ , Chloride ² , and TPH ³ Morris Boyd 1H Battery Terracon Project No. AR197312									
Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	MRO	TOTAL
Confirmation Samples (On Pad)									
EW-CS	2 - 2.5	Composite	06/29/20	Benzene - <0.000386 Toluene - <0.000457 Ethylbenzene - <0.000567 Total Xylenes - <0.000346 Total BTEX - <0.000346	2,230	<14.9	273	52.5	326
EW-1.1	2 - 2.5	Composite	07/24/20	Benzene - <0.00200 Toluene - <0.00200 Ethylbenzene - <0.00200 Total Xylenes - <0.00200 Total BTEX - <0.00200	232	<50	<50	<50	<50
WW-CS	2 - 2.5	Composite	06/29/20	Benzene - <0.000383 Toluene - <0.000453 Ethylbenzene - <0.000561 Total Xylenes - <0.000342 Total BTEX - <0.000342	302	<15	<15	<15	<15
SW-CS	2 - 2.5	Composite	06/29/20	Benzene - <0.000386 Toluene - <0.000457 Ethylbenzene - <0.000566 Total Xylenes - <0.000345 Total BTEX - <0.000345	141	15.8	<15	<15	15.8
NW-CS	2 - 2.5	Composite	06/29/20	Benzene - <0.000389 Toluene - <0.000460 Ethylbenzene - <0.000570 Total Xylenes - <0.000348 Total BTEX - <0.000348	379	<14.9	26.4	<14.9	26.4
W-1 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000384 Toluene - <0.000455 Ethylbenzene - <0.000564 Total Xylenes - <0.000344 Total BTEX - <0.000344	55.6	15.4	<15	<15	15.4
W-2 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000382 Toluene - <0.000452 Ethylbenzene - <0.000560 Total Xylenes - <0.000342 Total BTEX - <0.000342	165	15.1	33.6	<15	48.7
W-3 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000383 Toluene - <0.000454 Ethylbenzene - <0.000563 Total Xylenes - <0.000343 Total BTEX - <0.000343	162	15.8	46.7	<15	62.5
W-4 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000383 Toluene - <0.000454 Ethylbenzene - <0.000563 Total Xylenes - <0.000343 Total BTEX - <0.000343	49.1	17.2	<15	<15	17.2
W-5 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000382 Toluene - <0.000452 Ethylbenzene - <0.000560 Total Xylenes - <0.000342 Total BTEX - <0.000342	22.2	16.7	<15	<15	16.7
W-6 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000385 Toluene - <0.000456 Ethylbenzene - <0.000565 Total Xylenes - <0.000344 Total BTEX - <0.000344	97.2	16.6	22.3	<15	38.9
NMOCD Reclamation Standards ⁴ (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100
NMOCD Remediation and Delineation Standards ⁵ (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/MRO)

4. New Mexico Administration Code (NMAC) Restoration, Reclamation, and Re-vegetation (19.15.29.13) New Mexico Administration Code (NMAC) – D (Reclamation of areas no longer in use) for soils extending to 4 ft. bgs

5. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018

< = Constituent not detected above the indicated laboratory SDL

NA = Not Analyzed

N/A = Not Applicable

Bold and Highlight denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Reclamation and/or Remediation and Delineation Standards.

TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX ¹ , Chloride ² , and TPH ³ Morris Boyd 1H Battery Terracon Project No. AR197312									
Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	MRO	TOTAL
Confirmation Samples (On Pad)									
W-7 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000384 Toluene - <0.000455 Ethylbenzene - <0.000564 Total Xylenes - <0.000344 Total BTEX - <0.000344	60.3	15	<14.9	<14.9	15
W-8 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000381 Toluene - <0.000451 Ethylbenzene - <0.000559 Total Xylenes - <0.000341 Total BTEX - <0.000341	85	<15	15.3	<15	15.3
E-1 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000382 Toluene - <0.000452 Ethylbenzene - <0.000560 Total Xylenes - <0.000342 Total BTEX - <0.000342	142	15.1	<15	<15	15.1
E-2 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000382 Toluene - <0.000452 Ethylbenzene - <0.000560 Total Xylenes - <0.000342 Total BTEX - <0.000342	117	15.4	<14.9	<14.9	15.4
E-3 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000384 Toluene - <0.000455 Ethylbenzene - <0.000564 Total Xylenes - <0.000344 Total BTEX - <0.000344	123	<15	138	27.7	166
E-4 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000387 Toluene - <0.000458 Ethylbenzene - <0.000568 Total Xylenes - <0.000346 Total BTEX - <0.000346	29.2	15.4	<15	<15	15.4
E-5 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000383 Toluene - <0.000454 Ethylbenzene - <0.000563 Total Xylenes - <0.000343 Total BTEX - <0.000343	548	16.2	15	<15	31.2
E-6 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000386 Toluene - <0.000457 Ethylbenzene - <0.000566 Total Xylenes - <0.000345 Total BTEX - <0.000345	142	15.4	<15	<15	15.4
E-7 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000386 Toluene - <0.000457 Ethylbenzene - <0.000567 Total Xylenes - <0.000346 Total BTEX - <0.000346	376	<15	37.2	15.9	53.1
E-8 CS	3.5 - 4	Composite	06/29/20	Benzene - <0.000384 Toluene - <0.000455 Ethylbenzene - <0.000564 Total Xylenes - 0.00114 Total BTEX - 0.00114	157	16.1	16.5	<15	32.6
EF-3	4 - 5	Composite	08/25/20	Benzene - <0.00201 Toluene - <0.00201 Ethylbenzene - <0.00201 Total Xylenes - <0.00201 Total BTEX - <0.00201	45.2	<49.9	<49.9	<49.9	<49.9
NMOCD Reclamation Standards ⁴ (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100
NMOCD Remediation and Delineation Standards ⁵ (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/MRO)

4. New Mexico Administration Code (NMAC) Restoration, Reclamation, and Re-vegetation (19.15.29.13) New Mexico Administration Code (NMAC) – D (Reclamation of areas no longer in use) for soils extending to 4 ft. bgs

5. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018

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Bold and Highlight denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Reclamation and/or Remediation and Delineation Standards.



Certificate of Analysis Summary 641161

Terracon-Lubbock, Lubbock, TX

Project Name: Morris Boyd 1H Battery



Project Id: AR197XXX
Contact: Joseph Guesnier
Project Location:

Date Received in Lab: Fri Oct-25-19 01:40 pm
Report Date: 13-NOV-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	641161-001	641161-002	641161-003	641161-004	641161-005	641161-006
	Field Id:	HA-1 (0-0.5)	HA-1 (0.5-1)	HA-1 (1.5-2)	HA-1 (3.5-4)	HA-1 (4.5-5)	HA-2 (0-0.5)
	Depth:	0-0.5 ft	0.5-1 ft	1.5-2 ft	3.5-4 ft	4.5-5 ft	0-0.5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Oct-24-19 13:00	Oct-24-19 13:05	Oct-24-19 13:10	Oct-24-19 13:15	Oct-24-19 13:20	Oct-24-19 13:25
BTEX by EPA 8021B	Extracted:	Oct-29-19 14:40	Oct-28-19 10:00	Oct-28-19 10:00			Oct-28-19 10:00
	Analyzed:	Oct-29-19 23:36	Oct-28-19 18:25	Oct-28-19 18:49			Oct-28-19 19:13
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			mg/kg RL
Benzene		11.6 X 0.938	8.85 0.192	0.244 0.0393			<0.0173 0.0382
Toluene		114 X 0.938	61.7 0.192	8.26 0.0393			<0.00893 0.0382
Ethylbenzene		97.5 X 0.938	55.8 0.192	12.2 0.0393			0.405 0.0382
m,p-Xylenes		109 X 1.88	62.9 0.384	15.3 0.0786			0.939 0.0763
o-Xylene		45.1 X 0.938	26.0 0.192	6.97 0.0393			0.172 0.0382
Total Xylenes		154 0.938	88.9 0.192	22.3 0.0393			1.11 0.0382
Total BTEX		377 0.938	215 0.192	43.0 0.0393			1.52 0.0382
Chloride by EPA 300 SUB: T104704215-19-30	Extracted:	Oct-28-19 13:16	Oct-28-19 13:16	Oct-28-19 13:16	Nov-11-19 14:26	Nov-11-19 14:26	Oct-28-19 13:16
	Analyzed:	Oct-28-19 17:31	Oct-28-19 17:58	Oct-28-19 18:25	Nov-13-19 03:25	Nov-13-19 03:52	Oct-28-19 18:52
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2430 X 10.0	2880 X 9.96	3210 10.2	2060 9.98	1040 99.6	8400 101
TPH By SW8015 Mod SUB: T104704215-19-30	Extracted:	Oct-29-19 15:29	Oct-29-19 15:32	Oct-29-19 15:35			Oct-29-19 15:44
	Analyzed:	Oct-30-19 05:52	Oct-30-19 06:11	Oct-30-19 06:29			Oct-30-19 07:24
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			mg/kg RL
Gasoline Range Hydrocarbons (GRO)		5110 49.9	2010 50.1	708 49.8			30.5 J 49.6
Diesel Range Organics (DRO)		14600 D 250	7450 D 100	3130 X 49.8			303 49.6
Motor Oil Range Hydrocarbons (MRO)		1200 49.9	902 50.1	460 49.8			52.8 49.6
Total TPH		20900 49.9	10400 50.1	4300 49.8			386 49.6

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641161

Terracon-Lubbock, Lubbock, TX

Project Name: Morris Boyd 1H Battery



Project Id: AR197XXX
Contact: Joseph Guesnier
Project Location:

Date Received in Lab: Fri Oct-25-19 01:40 pm
Report Date: 13-NOV-19
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	641161-007	641161-008	641161-011	641161-012	641161-014	641161-015
	Field Id:	HA-2 (0.5-1)	HA-2 (1.5-2)	HA-3 (0-0.5)	HA-3 (0.5-1)	HA-4 (0-0.5)	HA-4 (0.5-1)
	Depth:	1.5-1 ft	1.5-2 ft	4.5-5 ft	4.5-5 ft	4.5-5 ft	4.5-5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Oct-24-19 13:30	Oct-24-19 13:35	Oct-24-19 13:50	Oct-24-19 13:55	Oct-24-19 14:05	Oct-24-19 14:10
BTEX by EPA 8021B	Extracted:	Oct-28-19 10:00	Oct-28-19 10:00	Oct-28-19 10:00	Oct-28-19 10:00	Oct-28-19 10:00	Oct-28-19 10:00
	Analyzed:	Oct-28-19 16:50	Oct-28-19 17:14	Oct-28-19 19:37	Oct-28-19 20:02	Oct-28-19 21:37	Oct-28-19 22:01
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00879 0.0195	<0.00854 0.0189	0.0783 J 0.0978	<0.0176 0.0389	10.5 0.377	0.130 0.0926
Toluene		<0.00455 0.0195	<0.00442 0.0189	4.08 0.0978	0.494 0.0389	60.9 0.377	3.61 0.0926
Ethylbenzene		0.0136 J 0.0195	<0.00582 0.0189	9.28 0.0978	3.11 0.0389	55.4 0.377	9.17 0.0926
m,p-Xylenes		<0.00663 0.0389	<0.00645 0.0378	11.9 0.196	4.45 0.0778	67.9 0.753	35.6 0.185
o-Xylene		<0.00663 0.0195	<0.00645 0.0189	5.59 0.0978	2.31 0.0389	34.4 0.377	21.5 0.0926
Total Xylenes		<0.00663 0.0195	<0.00645 0.0189	17.5 0.0978	6.76 0.0389	102 0.377	57.1 0.0926
Total BTEX		0.0136 J 0.0195	<0.00442 0.0189	30.9 0.0978	10.4 0.0389	229 0.377	70.0 0.0926
Chloride by EPA 300 SUB: T104704215-19-30	Extracted:	Oct-28-19 13:16	Oct-28-19 13:16	Oct-28-19 13:16	Oct-28-19 13:16	Oct-28-19 13:16	Oct-28-19 13:16
	Analyzed:	Oct-28-19 19:01	Oct-28-19 19:10	Oct-28-19 19:19	Oct-28-19 19:28	Oct-28-19 19:37	Oct-28-19 19:46
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6920 100	5390 99.6	1360 9.98	2080 10.0	1650 10.0	510 9.96
TPH By SW8015 Mod SUB: T104704215-19-30	Extracted:	Oct-29-19 15:47	Oct-29-19 15:50	Oct-29-19 15:53	Oct-29-19 15:56	Oct-29-19 15:59	Oct-29-19 16:02
	Analyzed:	Oct-30-19 04:56	Oct-30-19 05:15	Oct-30-19 05:33	Oct-30-19 05:52	Oct-30-19 06:11	Oct-30-19 06:29
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		16.0 J 50.0	10.6 J 50.0	659 49.8	482 49.9	4210 49.8	1770 49.8
Diesel Range Organics (DRO)		115 50.0	24.1 J 50.0	2710 49.8	1950 49.9	20200 D 249	6810 D 99.5
Motor Oil Range Hydrocarbons (MRO)		16.9 J 50.0	<9.99 50.0	262 49.8	206 49.9	947 49.8	429 49.8
Total TPH		148 50.0	34.7 J 50.0	3630 49.8	2640 49.9	25400 49.8	9010 49.8

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641161

Terracon-Lubbock, Lubbock, TX

Project Name: Morris Boyd 1H Battery



Project Id: AR197XXX
Contact: Joseph Guesnier
Project Location:

Date Received in Lab: Fri Oct-25-19 01:40 pm
Report Date: 13-NOV-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641161-017	641161-018	641161-020	641161-021	641161-023	641161-024
	<i>Field Id:</i>	HA-5 (0-0.5)	HA-5 (0.5-1)	HA-6 (0-0.5)	HA-6 (0.5-1)	HA-7 (0-0.5)	HA-7 (0.5-1)
	<i>Depth:</i>	0-0.5 ft	0.5-1 ft	0-0.5 ft	0.5-1 ft	0-0.5 ft	0.5-1 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-24-19 14:20	Oct-24-19 14:25	Oct-24-19 14:35	Oct-24-19 14:40	Oct-24-19 14:50	Oct-24-19 14:55
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-29-19 14:40	Oct-28-19 10:00	Oct-28-19 10:00	Oct-28-19 10:00	Oct-28-19 10:00	Oct-28-19 10:00
	<i>Analyzed:</i>	Oct-29-19 23:12	Oct-28-19 15:14	Oct-28-19 22:48	Oct-28-19 23:12	Oct-28-19 23:36	Oct-29-19 00:00
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		12.4 0.870	<0.00888 0.0196	<0.178 0.394	<0.0437 0.0967	1.29 0.199	0.290 0.100
Toluene		123 0.870	<0.00460 0.0196	2.72 0.394	0.145 0.0967	5.25 0.199	1.90 0.100
Ethylbenzene		105 0.870	<0.00605 0.0196	7.50 0.394	0.725 0.0967	5.15 0.199	2.55 0.100
m,p-Xylenes		125 1.74	<0.00670 0.0393	17.4 0.789	1.32 0.193	5.63 0.398	5.55 0.200
o-Xylene		52.5 0.870	<0.00670 0.0196	3.08 0.394	0.261 0.0967	3.26 0.199	2.48 0.100
Total Xylenes		178 0.870	<0.00670 0.0196	20.5 0.394	1.58 0.0967	8.89 0.199	8.03 0.100
Total BTEX		418 0.870	<0.00460 0.0196	30.7 0.394	2.45 0.0967	20.6 0.199	12.8 0.100
Chloride by EPA 300 SUB: T104704215-19-30	<i>Extracted:</i>	Oct-28-19 13:16	Oct-28-19 13:16	Oct-28-19 13:16	Oct-28-19 13:16	Oct-28-19 13:16	Oct-28-19 13:16
	<i>Analyzed:</i>	Oct-28-19 19:55	Oct-28-19 20:04	Oct-28-19 20:13	Oct-28-19 20:40	Oct-28-19 20:49	Oct-28-19 20:58
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1890 9.98	491 10.0	11700 98.4	3290 9.96	5210 101	2480 10.0
TPH By SW8015 Mod SUB: T104704215-19-30	<i>Extracted:</i>	Oct-29-19 16:05	Oct-29-19 16:08	Oct-29-19 16:11	Oct-29-19 16:14	Oct-29-19 16:17	Oct-29-19 16:20
	<i>Analyzed:</i>	Oct-30-19 06:48	Oct-30-19 07:06	Oct-30-19 07:24	Oct-30-19 14:55	Oct-30-19 15:13	Oct-30-19 15:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		5650 49.6	19.2 J 49.6	36.0 J 49.6	61.7 49.6	799 49.6	758 49.6
Diesel Range Organics (DRO)		12500 D 248	155 49.6	3730 49.6	2510 49.6	17000 D 248	5850 D 99.1
Motor Oil Range Hydrocarbons (MRO)		590 49.6	58.9 49.6	435 49.6	474 49.6	950 49.6	456 49.6
Total TPH		18700 49.6	233 49.6	4200 49.6	3050 49.6	18700 49.6	7060 49.6

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 641161

Terracon-Lubbock, Lubbock, TX

Project Name: Morris Boyd 1H Battery



Project Id: AR197XXX
 Contact: Joseph Guesnier
 Project Location:

Date Received in Lab: Fri Oct-25-19 01:40 pm
 Report Date: 13-NOV-19
 Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641161-026	641161-027	641161-028			
	<i>Field Id:</i>	HA-8 (0-0.5)	HA-8 (0.5-1)	HA-8 (1.5-2)			
	<i>Depth:</i>	0-0.5 ft	0.5-1 ft	1.5-2 ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Oct-24-19 15:05	Oct-24-19 15:10	Oct-24-19 15:15			
BTEX by EPA 8021B	<i>Extracted:</i>	Oct-28-19 10:00	Oct-28-19 10:00				
	<i>Analyzed:</i>	Oct-29-19 00:24	Oct-28-19 17:37				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Benzene		<0.0415 0.0917	<0.00863 0.0191				
Toluene		0.147 0.0917	<0.00447 0.0191				
Ethylbenzene		0.881 0.0917	0.0153 J 0.0191				
m,p-Xylenes		2.61 0.183	0.0210 J 0.0382				
o-Xylene		0.367 0.0917	<0.00651 0.0191				
Total Xylenes		2.98 0.0917	0.0210 0.0191				
Total BTEX		4.01 0.0917	0.0363 0.0191				
Chloride by EPA 300 SUB: T104704215-19-30	<i>Extracted:</i>	Oct-28-19 13:16	Oct-28-19 13:16	Nov-11-19 14:26			
	<i>Analyzed:</i>	Oct-28-19 21:07	Oct-28-19 21:16	Nov-13-19 04:19			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		9100 99.6	9990 99.8	9000 98.4			
TPH By SW8015 Mod SUB: T104704215-19-30	<i>Extracted:</i>	Oct-29-19 16:23	Oct-29-19 16:26				
	<i>Analyzed:</i>	Oct-30-19 15:49	Oct-30-19 16:07				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		82.7 49.6	14.2 J 50.1				
Diesel Range Organics (DRO)		3100 49.6	72.1 50.1				
Motor Oil Range Hydrocarbons (MRO)		376 49.6	42.3 J 50.1				
Total TPH		3560 49.6	129 50.1				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Jessica Kramer

Jessica Kramer
Project Assistant

Analytical Report 641161

for Terracon-Lubbock

Project Manager: Joseph Guesnier

Morris Boyd 1H Battery

AR197XXX

13-NOV-19

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



13-NOV-19

Project Manager: **Joseph Guesnier**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: XENCO Report No(s): **641161**

Morris Boyd 1H Battery

Project Address:

Joseph Guesnier:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 641161. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 641161 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 641161

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HA-1 (0-0.5)	S	10-24-19 13:00	0 - 0.5 ft	641161-001
HA-1 (0.5-1)	S	10-24-19 13:05	0.5 - 1 ft	641161-002
HA-1 (1.5-2)	S	10-24-19 13:10	1.5 - 2 ft	641161-003
HA-1 (3.5-4)	S	10-24-19 13:15	3.5 - 4 ft	641161-004
HA-1 (4.5-5)	S	10-24-19 13:20	4.5 - 5 ft	641161-005
HA-2 (0-0.5)	S	10-24-19 13:25	0 - 0.5 ft	641161-006
HA-2 (0.5-1)	S	10-24-19 13:30	1.5 - 1 ft	641161-007
HA-2 (1.5-2)	S	10-24-19 13:35	1.5 - 2 ft	641161-008
HA-3 (0-0.5)	S	10-24-19 13:50	4.5 - 5 ft	641161-011
HA-3 (0.5-1)	S	10-24-19 13:55	4.5 - 5 ft	641161-012
HA-4 (0-0.5)	S	10-24-19 14:05	4.5 - 5 ft	641161-014
HA-4 (0.5-1)	S	10-24-19 14:10	4.5 - 5 ft	641161-015
HA-5 (0-0.5)	S	10-24-19 14:20	0 - 0.5 ft	641161-017
HA-5 (0.5-1)	S	10-24-19 14:25	0.5 - 1 ft	641161-018
HA-6 (0-0.5)	S	10-24-19 14:35	0 - 0.5 ft	641161-020
HA-6 (0.5-1)	S	10-24-19 14:40	0.5 - 1 ft	641161-021
HA-7 (0-0.5)	S	10-24-19 14:50	0 - 0.5 ft	641161-023
HA-7 (0.5-1)	S	10-24-19 14:55	0.5 - 1 ft	641161-024
HA-8 (0-0.5)	S	10-24-19 15:05	0 - 0.5 ft	641161-026
HA-8 (0.5-1)	S	10-24-19 15:10	0.5 - 1 ft	641161-027
HA-8 (1.5-2)	S	10-24-19 15:15	1.5 - 2 ft	641161-028
HA-2 (3.5-4)	S	10-24-19 13:40	3.5 - 4 ft	Not Analyzed
HA-2 (4.5-5)	S	10-24-19 13:45	4.5 - 5 ft	Not Analyzed
HA-3 (1.5-2)	S	10-24-19 14:00	4.5 - 5 ft	Not Analyzed
HA-4 (1.5-2)	S	10-24-19 14:15	1.5 - 2 ft	Not Analyzed
HA-5 (1.5-2)	S	10-24-19 14:30	1.5 - 2 ft	Not Analyzed
HA-6 (1.5-2)	S	10-24-19 14:45	1.5 - 2 ft	Not Analyzed
HA-7 (1.5-2)	S	10-24-19 15:00	1.5 - 2 ft	Not Analyzed

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Morris Boyd 1H Battery**Project ID: AR197XXX
Work Order Number(s): 641161Report Date: 13-NOV-19
Date Received: 10/25/2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3105648 Chloride by EPA 300

Lab Sample ID 641161-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641161-001, -002, -003, -006, -007, -008, -011, -012, -014, -015, -017, -018, -020, -021, -023, -024, -026, -027.

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

Batch: LBA-3105672 BTEX by EPA 8021B

Samples 641161-006, -011, -012, -020, -021, and -026 were diluted due to hydrocarbons beyond xylenes.

Batch: LBA-3105977 BTEX by EPA 8021B

Lab Sample ID 641161-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641161-001, -017.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Surrogate 4-Bromofluorobenzene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7689151-1-BLK, 7689151-1-BSD, 641161-001 S, 641161-001 SD, 641161-001, 641161-017.

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Morris Boyd 1H Battery**Project ID: AR197XXX
Work Order Number(s): 641161Report Date: 13-NOV-19
Date Received: 10/25/2019

Batch: LBA-3106091 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 641161-015, 641161-003 SD, 641161-014.

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 641161-024, 641161-015, 641161-002, 641161-001, 641161-023, 641161-017, 641161-014, 641161-003 S, 641161-003 SD, 641161-003.

Lab Sample ID 641161-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO) recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641161-001, -002, -003, -006, -007, -008, -011, -012, -014, -015, -017, -018, -020, -021, -023, -024, -026, -027. The Laboratory Control Sample for Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.

Matrix interference in surrogate recoveries.

Batch: LBA-3107238 Inorganic Anions by SW 9056

Lab Sample ID 642701-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 641161-004, -005, -028.

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



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-1 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-001

Date Collected: 10.24.19 13.00

Sample Depth: 0 - 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2430	10.0	0.354	mg/kg	10.28.19 17.31	X	1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 15.29

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	5110	49.9	9.97	mg/kg	10.30.19 05.52		1
Diesel Range Organics (DRO)	C10C28DRO	14600	250	50.0	mg/kg	10.31.19 12.50	D	5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1200	49.9	9.97	mg/kg	10.30.19 05.52		1
Total TPH	PHC635	20900	49.9	9.97	mg/kg	10.31.19 12.50		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	101	%	70-135	10.30.19 05.52			
o-Terphenyl	84-15-1	79	%	70-135	10.30.19 05.52			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-1 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-001

Date Collected: 10.24.19 13.00

Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.29.19 14.40

Basis: Wet Weight

Seq Number: 3105977

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	11.6	0.938	0.424	mg/kg	10.29.19 23.36	X	50
Toluene	108-88-3	114	0.938	0.220	mg/kg	10.29.19 23.36	X	50
Ethylbenzene	100-41-4	97.5	0.938	0.289	mg/kg	10.29.19 23.36	X	50
m,p-Xylenes	179601-23-1	109	1.88	0.320	mg/kg	10.29.19 23.36	X	50
o-Xylene	95-47-6	45.1	0.938	0.320	mg/kg	10.29.19 23.36	X	50
Total Xylenes	1330-20-7	154	0.938	0.320	mg/kg	10.29.19 23.36		50
Total BTEX		377	0.938	0.220	mg/kg	10.29.19 23.36		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	147	%	68-120	10.29.19 23.36	**		
a,a,a-Trifluorotoluene	98-08-8	107	%	71-121	10.29.19 23.36			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-1 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-002

Date Collected: 10.24.19 13.05

Sample Depth: 0.5 - 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2880	9.96	0.353	mg/kg	10.28.19 17.58	X	1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 15.32

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	2010	50.1	10.0	mg/kg	10.30.19 06.11		1
Diesel Range Organics (DRO)	C10C28DRO	7450	100	20.0	mg/kg	11.01.19 12.38	D	2
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	902	50.1	10.0	mg/kg	10.30.19 06.11		1
Total TPH	PHC635	10400	50.1	10.0	mg/kg	11.01.19 12.38		2
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	118	%	70-135	10.30.19 06.11			
o-Terphenyl	84-15-1	131	%	70-135	10.30.19 06.11			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-1 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-002

Date Collected: 10.24.19 13.05

Sample Depth: 0.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	8.85	0.192	0.0868	mg/kg	10.28.19 18.25		10
Toluene	108-88-3	61.7	0.192	0.0449	mg/kg	10.28.19 18.25		10
Ethylbenzene	100-41-4	55.8	0.192	0.0591	mg/kg	10.28.19 18.25		10
m,p-Xylenes	179601-23-1	62.9	0.384	0.0655	mg/kg	10.28.19 18.25		10
o-Xylene	95-47-6	26.0	0.192	0.0655	mg/kg	10.28.19 18.25		10
Total Xylenes	1330-20-7	88.9	0.192	0.0655	mg/kg	10.28.19 18.25		10
Total BTEX		215	0.192	0.0449	mg/kg	10.28.19 18.25		10
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	258	%	68-120	10.28.19 18.25	**		
a,a,a-Trifluorotoluene	98-08-8	109	%	71-121	10.28.19 18.25			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-1 (1.5-2)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-003

Date Collected: 10.24.19 13.10

Sample Depth: 1.5 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3210	10.2	0.360	mg/kg	10.28.19 18.25		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 15.35

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	708	49.8	9.95	mg/kg	10.30.19 06.29		1
Diesel Range Organics (DRO)	C10C28DRO	3130	49.8	9.95	mg/kg	10.30.19 06.29	X	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	460	49.8	9.95	mg/kg	10.30.19 06.29		1
Total TPH	PHC635	4300	49.8	9.95	mg/kg	10.30.19 06.29		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	106	%	70-135	10.30.19 06.29			
o-Terphenyl	84-15-1	142	%	70-135	10.30.19 06.29	**		



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-1 (1.5-2)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-003

Date Collected: 10.24.19 13.10

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.244	0.0393	0.0178	mg/kg	10.28.19 18.49		2
Toluene	108-88-3	8.26	0.0393	0.00919	mg/kg	10.28.19 18.49		2
Ethylbenzene	100-41-4	12.2	0.0393	0.0121	mg/kg	10.28.19 18.49		2
m,p-Xylenes	179601-23-1	15.3	0.0786	0.0134	mg/kg	10.28.19 18.49		2
o-Xylene	95-47-6	6.97	0.0393	0.0134	mg/kg	10.28.19 18.49		2
Total Xylenes	1330-20-7	22.3	0.0393	0.0134	mg/kg	10.28.19 18.49		2
Total BTEX		43.0	0.0393	0.00919	mg/kg	10.28.19 18.49		2
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	308	%	68-120	10.28.19 18.49	**		
a,a,a-Trifluorotoluene	98-08-8	112	%	71-121	10.28.19 18.49			



Certificate of Analytical Results 641161

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-1 (3.5-4)

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-004

Date Collected: 10.24.19 13.15

Sample Depth: 3.5 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 11.11.19 14.26

Basis: Wet Weight

Seq Number: 3107238

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2060	9.98	0.353	mg/kg	11.13.19 03.25		1



Certificate of Analytical Results 641161

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-1 (4.5-5)

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-005

Date Collected: 10.24.19 13.20

Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 11.11.19 14.26

Basis: Wet Weight

Seq Number: 3107238

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1040	99.6	3.53	mg/kg	11.13.19 03.52		10



Certificate of Analytical Results 641161

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-2 (0-0.5)

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-006

Date Collected: 10.24.19 13.25

Sample Depth: 0 - 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8400	101	3.58	mg/kg	10.28.19 18.52		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 15.44

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	30.5	49.6	9.92	mg/kg	10.30.19 07.24	J	1
Diesel Range Organics (DRO)	C10C28DRO	303	49.6	9.92	mg/kg	10.30.19 07.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	52.8	49.6	9.92	mg/kg	10.30.19 07.24		1
Total TPH	PHC635	386	49.6	9.92	mg/kg	10.30.19 07.24		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	94	%	70-135	10.30.19 07.24			
o-Terphenyl	84-15-1	101	%	70-135	10.30.19 07.24			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-2 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-006

Date Collected: 10.24.19 13.25

Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0173	0.0382	0.0173	mg/kg	10.28.19 19.13	U	2
Toluene	108-88-3	<0.00893	0.0382	0.00893	mg/kg	10.28.19 19.13	U	2
Ethylbenzene	100-41-4	0.405	0.0382	0.0118	mg/kg	10.28.19 19.13		2
m,p-Xylenes	179601-23-1	0.939	0.0763	0.0130	mg/kg	10.28.19 19.13		2
o-Xylene	95-47-6	0.172	0.0382	0.0130	mg/kg	10.28.19 19.13		2
Total Xylenes	1330-20-7	1.11	0.0382	0.0130	mg/kg	10.28.19 19.13		2
Total BTEX		1.52	0.0382	0.00893	mg/kg	10.28.19 19.13		2
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	111	%	68-120	10.28.19 19.13			
a,a,a-Trifluorotoluene	98-08-8	87	%	71-121	10.28.19 19.13			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-2 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-007

Date Collected: 10.24.19 13.30

Sample Depth: 1.5 - 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6920	100	3.55	mg/kg	10.28.19 19.01		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 15.47

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	16.0	50.0	10.0	mg/kg	10.30.19 04.56	J	1
Diesel Range Organics (DRO)	C10C28DRO	115	50.0	10.0	mg/kg	10.30.19 04.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	16.9	50.0	10.0	mg/kg	10.30.19 04.56	J	1
Total TPH	PHC635	148	50.0	10.0	mg/kg	10.30.19 04.56		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	110	%	70-135	10.30.19 04.56			
o-Terphenyl	84-15-1	110	%	70-135	10.30.19 04.56			



Certificate of Analytical Results 641161

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-2 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-007

Date Collected: 10.24.19 13.30

Sample Depth: 1.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00879	0.0195	0.00879	mg/kg	10.28.19 16.50	U	1
Toluene	108-88-3	<0.00455	0.0195	0.00455	mg/kg	10.28.19 16.50	U	1
Ethylbenzene	100-41-4	0.0136	0.0195	0.00599	mg/kg	10.28.19 16.50	J	1
m,p-Xylenes	179601-23-1	<0.00663	0.0389	0.00663	mg/kg	10.28.19 16.50	U	1
o-Xylene	95-47-6	<0.00663	0.0195	0.00663	mg/kg	10.28.19 16.50	U	1
Total Xylenes	1330-20-7	<0.00663	0.0195	0.00663	mg/kg	10.28.19 16.50	U	1
Total BTEX		0.0136	0.0195	0.00455	mg/kg	10.28.19 16.50	J	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	87	%	68-120	10.28.19 16.50			
a,a,a-Trifluorotoluene	98-08-8	84	%	71-121	10.28.19 16.50			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-2 (1.5-2)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-008

Date Collected: 10.24.19 13.35

Sample Depth: 1.5 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5390	99.6	3.53	mg/kg	10.28.19 19.10		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 15.50

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	10.6	50.0	9.99	mg/kg	10.30.19 05.15	J	1
Diesel Range Organics (DRO)	C10C28DRO	24.1	50.0	9.99	mg/kg	10.30.19 05.15	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.99	50.0	9.99	mg/kg	10.30.19 05.15	U	1
Total TPH	PHC635	34.7	50.0	9.99	mg/kg	10.30.19 05.15	J	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	109	%	70-135	10.30.19 05.15			
o-Terphenyl	84-15-1	113	%	70-135	10.30.19 05.15			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-2 (1.5-2)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-008

Date Collected: 10.24.19 13.35

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00854	0.0189	0.00854	mg/kg	10.28.19 17.14	U	1
Toluene	108-88-3	<0.00442	0.0189	0.00442	mg/kg	10.28.19 17.14	U	1
Ethylbenzene	100-41-4	<0.00582	0.0189	0.00582	mg/kg	10.28.19 17.14	U	1
m,p-Xylenes	179601-23-1	<0.00645	0.0378	0.00645	mg/kg	10.28.19 17.14	U	1
o-Xylene	95-47-6	<0.00645	0.0189	0.00645	mg/kg	10.28.19 17.14	U	1
Total Xylenes	1330-20-7	<0.00645	0.0189	0.00645	mg/kg	10.28.19 17.14	U	1
Total BTEX		<0.00442	0.0189	0.00442	mg/kg	10.28.19 17.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	109	%	68-120	10.28.19 17.14			
a,a,a-Trifluorotoluene	98-08-8	112	%	71-121	10.28.19 17.14			



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Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-3 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-011

Date Collected: 10.24.19 13.50

Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1360	9.98	0.353	mg/kg	10.28.19 19.19		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 15.53

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	659	49.8	9.96	mg/kg	10.30.19 05.33		1
Diesel Range Organics (DRO)	C10C28DRO	2710	49.8	9.96	mg/kg	10.30.19 05.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	262	49.8	9.96	mg/kg	10.30.19 05.33		1
Total TPH	PHC635	3630	49.8	9.96	mg/kg	10.30.19 05.33		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	122	%	70-135	10.30.19 05.33			
o-Terphenyl	84-15-1	117	%	70-135	10.30.19 05.33			



Certificate of Analytical Results 641161

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-3 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-011

Date Collected: 10.24.19 13.50

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0783	0.0978	0.0442	mg/kg	10.28.19 19.37	J	5
Toluene	108-88-3	4.08	0.0978	0.0229	mg/kg	10.28.19 19.37		5
Ethylbenzene	100-41-4	9.28	0.0978	0.0301	mg/kg	10.28.19 19.37		5
m,p-Xylenes	179601-23-1	11.9	0.196	0.0334	mg/kg	10.28.19 19.37		5
o-Xylene	95-47-6	5.59	0.0978	0.0334	mg/kg	10.28.19 19.37		5
Total Xylenes	1330-20-7	17.5	0.0978	0.0334	mg/kg	10.28.19 19.37		5
Total BTEX		30.9	0.0978	0.0229	mg/kg	10.28.19 19.37		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	176	%	68-120	10.28.19 19.37	**		
a,a,a-Trifluorotoluene	98-08-8	103	%	71-121	10.28.19 19.37			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-3 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-012

Date Collected: 10.24.19 13.55

Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2080	10.0	0.355	mg/kg	10.28.19 19.28		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 15.56

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	482	49.9	9.98	mg/kg	10.30.19 05.52		1
Diesel Range Organics (DRO)	C10C28DRO	1950	49.9	9.98	mg/kg	10.30.19 05.52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	206	49.9	9.98	mg/kg	10.30.19 05.52		1
Total TPH	PHC635	2640	49.9	9.98	mg/kg	10.30.19 05.52		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	120	%	70-135	10.30.19 05.52			
o-Terphenyl	84-15-1	111	%	70-135	10.30.19 05.52			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-3 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-012

Date Collected: 10.24.19 13.55

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0176	0.0389	0.0176	mg/kg	10.28.19 20.02	U	2
Toluene	108-88-3	0.494	0.0389	0.00911	mg/kg	10.28.19 20.02		2
Ethylbenzene	100-41-4	3.11	0.0389	0.0120	mg/kg	10.28.19 20.02		2
m,p-Xylenes	179601-23-1	4.45	0.0778	0.0133	mg/kg	10.28.19 20.02		2
o-Xylene	95-47-6	2.31	0.0389	0.0133	mg/kg	10.28.19 20.02		2
Total Xylenes	1330-20-7	6.76	0.0389	0.0133	mg/kg	10.28.19 20.02		2
Total BTEX		10.4	0.0389	0.00911	mg/kg	10.28.19 20.02		2
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	212	%	68-120	10.28.19 20.02	**		
a,a,a-Trifluorotoluene	98-08-8	110	%	71-121	10.28.19 20.02			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-4 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-014

Date Collected: 10.24.19 14.05

Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1650	10.0	0.355	mg/kg	10.28.19 19.37		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 15.59

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	4210	49.8	9.96	mg/kg	10.30.19 06.11		1
Diesel Range Organics (DRO)	C10C28DRO	20200	249	49.8	mg/kg	10.30.19 13.37	D	5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	947	49.8	9.96	mg/kg	10.30.19 06.11		1
Total TPH	PHC635	25400	49.8	9.96	mg/kg	10.30.19 13.37		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	144	%	70-135	10.30.19 06.11	**		
o-Terphenyl	84-15-1	123	%	70-135	10.30.19 06.11			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-4 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-014

Date Collected: 10.24.19 14.05

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	10.5	0.377	0.170	mg/kg	10.28.19 21.37		20
Toluene	108-88-3	60.9	0.377	0.0881	mg/kg	10.28.19 21.37		20
Ethylbenzene	100-41-4	55.4	0.377	0.116	mg/kg	10.28.19 21.37		20
m,p-Xylenes	179601-23-1	67.9	0.753	0.128	mg/kg	10.28.19 21.37		20
o-Xylene	95-47-6	34.4	0.377	0.128	mg/kg	10.28.19 21.37		20
Total Xylenes	1330-20-7	102	0.377	0.128	mg/kg	10.28.19 21.37		20
Total BTEX		229	0.377	0.0881	mg/kg	10.28.19 21.37		20
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	185	%	68-120	10.28.19 21.37	**		
a,a,a-Trifluorotoluene	98-08-8	108	%	71-121	10.28.19 21.37			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-4 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-015

Date Collected: 10.24.19 14.10

Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	510	9.96	0.353	mg/kg	10.28.19 19.46		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 16.02

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	1770	49.8	9.95	mg/kg	10.30.19 06.29		1
Diesel Range Organics (DRO)	C10C28DRO	6810	99.5	19.9	mg/kg	10.30.19 13.55	D	2
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	429	49.8	9.95	mg/kg	10.30.19 06.29		1
Total TPH	PHC635	9010	49.8	9.95	mg/kg	10.30.19 13.55		2
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	143	%	70-135	10.30.19 06.29	**		
o-Terphenyl	84-15-1	171	%	70-135	10.30.19 06.29	**		



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-4 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-015

Date Collected: 10.24.19 14.10

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.130	0.0926	0.0419	mg/kg	10.28.19 22.01		5
Toluene	108-88-3	3.61	0.0926	0.0217	mg/kg	10.28.19 22.01		5
Ethylbenzene	100-41-4	9.17	0.0926	0.0285	mg/kg	10.28.19 22.01		5
m,p-Xylenes	179601-23-1	35.6	0.185	0.0316	mg/kg	10.28.19 22.01		5
o-Xylene	95-47-6	21.5	0.0926	0.0316	mg/kg	10.28.19 22.01		5
Total Xylenes	1330-20-7	57.1	0.0926	0.0316	mg/kg	10.28.19 22.01		5
Total BTEX		70.0	0.0926	0.0217	mg/kg	10.28.19 22.01		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	282	%	68-120	10.28.19 22.01	**		
a,a,a-Trifluorotoluene	98-08-8	93	%	71-121	10.28.19 22.01			



Certificate of Analytical Results 641161

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-5 (0-0.5)

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-017

Date Collected: 10.24.19 14.20

Sample Depth: 0 - 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1890	9.98	0.353	mg/kg	10.28.19 19.55		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 16.05

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	5650	49.6	9.91	mg/kg	10.30.19 06.48		1
Diesel Range Organics (DRO)	C10C28DRO	12500	248	49.6	mg/kg	10.30.19 14.14	D	5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	590	49.6	9.91	mg/kg	10.30.19 06.48		1
Total TPH	PHC635	18700	49.6	9.91	mg/kg	10.30.19 14.14		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	121	%	70-135	10.30.19 06.48			
o-Terphenyl	84-15-1	206	%	70-135	10.30.19 06.48	**		



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-5 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-017

Date Collected: 10.24.19 14.20

Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.29.19 14.40

Basis: Wet Weight

Seq Number: 3105977

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	12.4	0.870	0.393	mg/kg	10.29.19 23.12		50
Toluene	108-88-3	123	0.870	0.203	mg/kg	10.29.19 23.12		50
Ethylbenzene	100-41-4	105	0.870	0.268	mg/kg	10.29.19 23.12		50
m,p-Xylenes	179601-23-1	125	1.74	0.297	mg/kg	10.29.19 23.12		50
o-Xylene	95-47-6	52.5	0.870	0.297	mg/kg	10.29.19 23.12		50
Total Xylenes	1330-20-7	178	0.870	0.297	mg/kg	10.29.19 23.12		50
Total BTEX		418	0.870	0.203	mg/kg	10.29.19 23.12		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	174	%	68-120	10.29.19 23.12	**		
a,a,a-Trifluorotoluene	98-08-8	112	%	71-121	10.29.19 23.12			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-5 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-018

Date Collected: 10.24.19 14.25

Sample Depth: 0.5 - 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	491	10.0	0.355	mg/kg	10.28.19 20.04		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 16.08

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	19.2	49.6	9.92	mg/kg	10.30.19 07.06	J	1
Diesel Range Organics (DRO)	C10C28DRO	155	49.6	9.92	mg/kg	10.30.19 07.06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	58.9	49.6	9.92	mg/kg	10.30.19 07.06		1
Total TPH	PHC635	233	49.6	9.92	mg/kg	10.30.19 07.06		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	112	%	70-135	10.30.19 07.06			
o-Terphenyl	84-15-1	108	%	70-135	10.30.19 07.06			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-5 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-018

Date Collected: 10.24.19 14.25

Sample Depth: 0.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00888	0.0196	0.00888	mg/kg	10.28.19 15.14	U	1
Toluene	108-88-3	<0.00460	0.0196	0.00460	mg/kg	10.28.19 15.14	U	1
Ethylbenzene	100-41-4	<0.00605	0.0196	0.00605	mg/kg	10.28.19 15.14	U	1
m,p-Xylenes	179601-23-1	<0.00670	0.0393	0.00670	mg/kg	10.28.19 15.14	U	1
o-Xylene	95-47-6	<0.00670	0.0196	0.00670	mg/kg	10.28.19 15.14	U	1
Total Xylenes	1330-20-7	<0.00670	0.0196	0.00670	mg/kg	10.28.19 15.14	U	1
Total BTEX		<0.00460	0.0196	0.00460	mg/kg	10.28.19 15.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	117	%	68-120	10.28.19 15.14			
a,a,a-Trifluorotoluene	98-08-8	117	%	71-121	10.28.19 15.14			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-6 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-020

Date Collected: 10.24.19 14.35

Sample Depth: 0 - 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11700	98.4	3.48	mg/kg	10.28.19 20.13		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 16.11

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	36.0	49.6	9.91	mg/kg	10.30.19 07.24	J	1
Diesel Range Organics (DRO)	C10C28DRO	3730	49.6	9.91	mg/kg	10.30.19 07.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	435	49.6	9.91	mg/kg	10.30.19 07.24		1
Total TPH	PHC635	4200	49.6	9.91	mg/kg	10.30.19 07.24		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	109	%	70-135	10.30.19 07.24			
o-Terphenyl	84-15-1	120	%	70-135	10.30.19 07.24			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-6 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-020

Date Collected: 10.24.19 14.35

Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.178	0.394	0.178	mg/kg	10.28.19 22.48	U	20
Toluene	108-88-3	2.72	0.394	0.0923	mg/kg	10.28.19 22.48		20
Ethylbenzene	100-41-4	7.50	0.394	0.121	mg/kg	10.28.19 22.48		20
m,p-Xylenes	179601-23-1	17.4	0.789	0.135	mg/kg	10.28.19 22.48		20
o-Xylene	95-47-6	3.08	0.394	0.135	mg/kg	10.28.19 22.48		20
Total Xylenes	1330-20-7	20.5	0.394	0.135	mg/kg	10.28.19 22.48		20
Total BTEX		30.7	0.394	0.0923	mg/kg	10.28.19 22.48		20
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	137	%	68-120	10.28.19 22.48	**		
a,a,a-Trifluorotoluene	98-08-8	111	%	71-121	10.28.19 22.48			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-6 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-021

Date Collected: 10.24.19 14.40

Sample Depth: 0.5 - 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3290	9.96	0.353	mg/kg	10.28.19 20.40		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 16.14

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	61.7	49.6	9.92	mg/kg	10.30.19 14.55		1
Diesel Range Organics (DRO)	C10C28DRO	2510	49.6	9.92	mg/kg	10.30.19 14.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	474	49.6	9.92	mg/kg	10.30.19 14.55		1
Total TPH	PHC635	3050	49.6	9.92	mg/kg	10.30.19 14.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	10.30.19 14.55	
o-Terphenyl	84-15-1	97	%	70-135	10.30.19 14.55	



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-6 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-021

Date Collected: 10.24.19 14.40

Sample Depth: 0.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0437	0.0967	0.0437	mg/kg	10.28.19 23.12	U	5
Toluene	108-88-3	0.145	0.0967	0.0226	mg/kg	10.28.19 23.12		5
Ethylbenzene	100-41-4	0.725	0.0967	0.0298	mg/kg	10.28.19 23.12		5
m,p-Xylenes	179601-23-1	1.32	0.193	0.0330	mg/kg	10.28.19 23.12		5
o-Xylene	95-47-6	0.261	0.0967	0.0330	mg/kg	10.28.19 23.12		5
Total Xylenes	1330-20-7	1.58	0.0967	0.0330	mg/kg	10.28.19 23.12		5
Total BTEX		2.45	0.0967	0.0226	mg/kg	10.28.19 23.12		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	131	%	68-120	10.28.19 23.12	**		
a,a,a-Trifluorotoluene	98-08-8	107	%	71-121	10.28.19 23.12			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-7 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-023

Date Collected: 10.24.19 14.50

Sample Depth: 0 - 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5210	101	3.58	mg/kg	10.28.19 20.49		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 16.17

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	799	49.6	9.92	mg/kg	10.30.19 15.13		1
Diesel Range Organics (DRO)	C10C28DRO	17000	248	49.6	mg/kg	10.31.19 12.13	D	5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	950	49.6	9.92	mg/kg	10.30.19 15.13		1
Total TPH	PHC635	18700	49.6	9.92	mg/kg	10.31.19 12.13		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	123	%	70-135	10.30.19 15.13			
o-Terphenyl	84-15-1	248	%	70-135	10.30.19 15.13	**		



Certificate of Analytical Results 641161

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-7 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-023

Date Collected: 10.24.19 14.50

Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	1.29	0.199	0.0899	mg/kg	10.28.19 23.36		10
Toluene	108-88-3	5.25	0.199	0.0465	mg/kg	10.28.19 23.36		10
Ethylbenzene	100-41-4	5.15	0.199	0.0612	mg/kg	10.28.19 23.36		10
m,p-Xylenes	179601-23-1	5.63	0.398	0.0678	mg/kg	10.28.19 23.36		10
o-Xylene	95-47-6	3.26	0.199	0.0678	mg/kg	10.28.19 23.36		10
Total Xylenes	1330-20-7	8.89	0.199	0.0678	mg/kg	10.28.19 23.36		10
Total BTEX		20.6	0.199	0.0465	mg/kg	10.28.19 23.36		10
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	128	%	68-120	10.28.19 23.36	**		
a,a,a-Trifluorotoluene	98-08-8	97	%	71-121	10.28.19 23.36			



Certificate of Analytical Results 641161

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-7 (0.5-1)

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-024

Date Collected: 10.24.19 14.55

Sample Depth: 0.5 - 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2480	10.0	0.355	mg/kg	10.28.19 20.58		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 16.20

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	758	49.6	9.91	mg/kg	10.30.19 15.31		1
Diesel Range Organics (DRO)	C10C28DRO	5850	99.1	19.8	mg/kg	10.31.19 12.31	D	2
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	456	49.6	9.91	mg/kg	10.30.19 15.31		1
Total TPH	PHC635	7060	49.6	9.91	mg/kg	10.31.19 12.31		2
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	126	%	70-135	10.30.19 15.31			
o-Terphenyl	84-15-1	141	%	70-135	10.30.19 15.31	**		



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-7 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-024

Date Collected: 10.24.19 14.55

Sample Depth: 0.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.290	0.100	0.0452	mg/kg	10.29.19 00.00		5
Toluene	108-88-3	1.90	0.100	0.0234	mg/kg	10.29.19 00.00		5
Ethylbenzene	100-41-4	2.55	0.100	0.0308	mg/kg	10.29.19 00.00		5
m,p-Xylenes	179601-23-1	5.55	0.200	0.0341	mg/kg	10.29.19 00.00		5
o-Xylene	95-47-6	2.48	0.100	0.0341	mg/kg	10.29.19 00.00		5
Total Xylenes	1330-20-7	8.03	0.100	0.0341	mg/kg	10.29.19 00.00		5
Total BTEX		12.8	0.100	0.0234	mg/kg	10.29.19 00.00		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	114	%	68-120	10.29.19 00.00			
a,a,a-Trifluorotoluene	98-08-8	102	%	71-121	10.29.19 00.00			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-8 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-026

Date Collected: 10.24.19 15.05

Sample Depth: 0 - 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9100	99.6	3.53	mg/kg	10.28.19 21.07		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 16.23

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	82.7	49.6	9.91	mg/kg	10.30.19 15.49		1
Diesel Range Organics (DRO)	C10C28DRO	3100	49.6	9.91	mg/kg	10.30.19 15.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	376	49.6	9.91	mg/kg	10.30.19 15.49		1
Total TPH	PHC635	3560	49.6	9.91	mg/kg	10.30.19 15.49		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	113	%	70-135	10.30.19 15.49			
o-Terphenyl	84-15-1	119	%	70-135	10.30.19 15.49			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-8 (0-0.5)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-026

Date Collected: 10.24.19 15.05

Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0415	0.0917	0.0415	mg/kg	10.29.19 00.24	U	5
Toluene	108-88-3	0.147	0.0917	0.0215	mg/kg	10.29.19 00.24		5
Ethylbenzene	100-41-4	0.881	0.0917	0.0283	mg/kg	10.29.19 00.24		5
m,p-Xylenes	179601-23-1	2.61	0.183	0.0313	mg/kg	10.29.19 00.24		5
o-Xylene	95-47-6	0.367	0.0917	0.0313	mg/kg	10.29.19 00.24		5
Total Xylenes	1330-20-7	2.98	0.0917	0.0313	mg/kg	10.29.19 00.24		5
Total BTEX		4.01	0.0917	0.0215	mg/kg	10.29.19 00.24		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	126	%	68-120	10.29.19 00.24	**		
a,a,a-Trifluorotoluene	98-08-8	96	%	71-121	10.29.19 00.24			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-8 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-027

Date Collected: 10.24.19 15.10

Sample Depth: 0.5 - 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 10.28.19 13.16

Basis: Wet Weight

Seq Number: 3105648

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9990	99.8	3.53	mg/kg	10.28.19 21.16		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 10.29.19 16.26

Basis: Wet Weight

Seq Number: 3106091

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	14.2	50.1	10.0	mg/kg	10.30.19 16.07	J	1
Diesel Range Organics (DRO)	C10C28DRO	72.1	50.1	10.0	mg/kg	10.30.19 16.07		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	42.3	50.1	10.0	mg/kg	10.30.19 16.07	J	1
Total TPH	PHC635	129	50.1	10.0	mg/kg	10.30.19 16.07		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	106	%	70-135	10.30.19 16.07			
o-Terphenyl	84-15-1	112	%	70-135	10.30.19 16.07			



Certificate of Analytical Results 641161



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-8 (0.5-1)**

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-027

Date Collected: 10.24.19 15.10

Sample Depth: 0.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 10.28.19 10.00

Basis: Wet Weight

Seq Number: 3105672

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00863	0.0191	0.00863	mg/kg	10.28.19 17.37	U	1
Toluene	108-88-3	<0.00447	0.0191	0.00447	mg/kg	10.28.19 17.37	U	1
Ethylbenzene	100-41-4	0.0153	0.0191	0.00588	mg/kg	10.28.19 17.37	J	1
m,p-Xylenes	179601-23-1	0.0210	0.0382	0.00651	mg/kg	10.28.19 17.37	J	1
o-Xylene	95-47-6	<0.00651	0.0191	0.00651	mg/kg	10.28.19 17.37	U	1
Total Xylenes	1330-20-7	0.0210	0.0191	0.00651	mg/kg	10.28.19 17.37		1
Total BTEX		0.0363	0.0191	0.00447	mg/kg	10.28.19 17.37		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	112	%	68-120	10.28.19 17.37			
a,a,a-Trifluorotoluene	98-08-8	115	%	71-121	10.28.19 17.37			



Certificate of Analytical Results 641161

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-8 (1.5-2)

Matrix: Soil

Date Received: 10.25.19 13.40

Lab Sample Id: 641161-028

Date Collected: 10.24.19 15.15

Sample Depth: 1.5 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 11.11.19 14.26

Basis: Wet Weight

Seq Number: 3107238

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9000	98.4	3.48	mg/kg	11.13.19 04.19		10



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



Terracon-Lubbock
Morris Boyd 1H Battery

Analytical Method: Chloride by EPA 300

Seq Number: 3105648

MB Sample Id: 7689015-1-BLK

Matrix: Solid

LCS Sample Id: 7689015-1-BKS

Prep Method: E300P

Date Prep: 10.28.19

LCSD Sample Id: 7689015-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.354	100	107	107	104	104	80-120	3	20	mg/kg	10.28.19 17:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3107238

MB Sample Id: 7690061-1-BLK

Matrix: Solid

LCS Sample Id: 7690061-1-BKS

Prep Method: E300P

Date Prep: 11.11.19

LCSD Sample Id: 7690061-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.354	100	104	104	102	102	80-120	2	20	mg/kg	11.13.19 02:40	

Analytical Method: Chloride by EPA 300

Seq Number: 3105648

Parent Sample Id: 641161-001

Matrix: Soil

MS Sample Id: 641161-001 S

Prep Method: E300P

Date Prep: 10.28.19

MSD Sample Id: 641161-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2430	99.8	2470	40	2480	50	80-120	0	20	mg/kg	10.28.19 17:40	X

Analytical Method: Chloride by EPA 300

Seq Number: 3105648

Parent Sample Id: 641161-002

Matrix: Soil

MS Sample Id: 641161-002 S

Prep Method: E300P

Date Prep: 10.28.19

MSD Sample Id: 641161-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2880	99.8	2920	40	2930	50	80-120	0	20	mg/kg	10.28.19 18:07	X

Analytical Method: Chloride by EPA 300

Seq Number: 3107238

Parent Sample Id: 641161-004

Matrix: Soil

MS Sample Id: 641161-004 S

Prep Method: E300P

Date Prep: 11.11.19

MSD Sample Id: 641161-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2060	99.8	2130	70	2140	80	80-120	0	20	mg/kg	11.13.19 03:34	F

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

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

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

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



Terracon-Lubbock
Morris Boyd 1H Battery

Analytical Method: Chloride by EPA 300

Seq Number: 3107238

Parent Sample Id: 642701-001

Matrix: Sludge

MS Sample Id: 642701-001 S

Prep Method: E300P

Date Prep: 11.11.19

MSD Sample Id: 642701-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	549	99.8	633	84	631	82	80-120	0	20	mg/kg	11.13.19 03:07	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3106091

MB Sample Id: 7689132-1-BLK

Matrix: Solid

LCS Sample Id: 7689132-1-BKS

Prep Method: SW8015P

Date Prep: 10.29.19

LCSD Sample Id: 7689132-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<10.0	1000	1030	103	1010	101	70-135	2	35	mg/kg	10.30.19 04:56	
Diesel Range Organics (DRO)	<10.0	1000	1090	109	1010	101	70-135	8	35	mg/kg	10.30.19 04:56	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	89		102		97		70-135	%	10.30.19 04:56
o-Terphenyl	112		107		105		70-135	%	10.30.19 04:56

Analytical Method: TPH By SW8015 Mod

Seq Number: 3106091

Matrix: Solid

MB Sample Id: 7689132-1-BLK

Prep Method: SW8015P

Date Prep: 10.29.19

Parameter

	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<10.0	mg/kg	10.30.19 05:33	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3106091

Matrix: Soil

Parent Sample Id: 641161-003

MS Sample Id: 641161-003 S

Prep Method: SW8015P

Date Prep: 10.29.19

MSD Sample Id: 641161-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	708	997	1650	94	1800	110	70-135	9	35	mg/kg	10.30.19 06:48	
Diesel Range Organics (DRO)	3130	997	3170	4	3570	44	70-135	12	35	mg/kg	10.30.19 06:48	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		144	**	70-135	%	10.30.19 06:48
o-Terphenyl	158	**	172	**	70-135	%	10.30.19 06:48

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

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

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

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



Terracon-Lubbock
Morris Boyd 1H Battery

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105672

MB Sample Id: 7688997-1-BLK

Matrix: Solid

LCS Sample Id: 7688997-1-BKS

Prep Method: SW5030B

Date Prep: 10.28.19

LCSD Sample Id: 7688997-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00904	2.00	1.77	89	1.83	92	55-120	3	20	mg/kg	10.28.19 13:14	
Toluene	<0.00468	2.00	1.74	87	1.80	90	77-120	3	20	mg/kg	10.28.19 13:14	
Ethylbenzene	<0.00616	2.00	1.88	94	1.96	98	77-120	4	20	mg/kg	10.28.19 13:14	
m,p-Xylenes	<0.00682	4.00	3.81	95	3.97	99	78-120	4	20	mg/kg	10.28.19 13:14	
o-Xylene	<0.00682	2.00	1.95	98	1.99	100	78-120	2	20	mg/kg	10.28.19 13:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	85		121	**	124	**	68-120	%	10.28.19 13:14
a,a,a-Trifluorotoluene	89		113		114		71-121	%	10.28.19 13:14

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105977

MB Sample Id: 7689151-1-BLK

Matrix: Solid

LCS Sample Id: 7689151-1-BKS

Prep Method: SW5030B

Date Prep: 10.29.19

LCSD Sample Id: 7689151-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00904	2.00	1.87	94	1.87	94	55-120	0	20	mg/kg	10.29.19 21:12	
Toluene	<0.00468	2.00	1.80	90	1.85	93	77-120	3	20	mg/kg	10.29.19 21:12	
Ethylbenzene	<0.00616	2.00	1.93	97	2.12	106	77-120	9	20	mg/kg	10.29.19 21:12	
m,p-Xylenes	<0.00682	4.00	3.88	97	4.27	107	78-120	10	20	mg/kg	10.29.19 21:12	
o-Xylene	<0.00682	2.00	1.96	98	2.08	104	78-120	6	20	mg/kg	10.29.19 21:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	122	**	107		137	**	68-120	%	10.29.19 21:12
a,a,a-Trifluorotoluene	114		96		113		71-121	%	10.29.19 21:12

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105672

Parent Sample Id: 641161-018

Matrix: Soil

MS Sample Id: 641161-018 S

Prep Method: SW5030B

Date Prep: 10.28.19

MSD Sample Id: 641161-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00848	1.88	1.63	87	1.84	92	54-120	12	25	mg/kg	10.28.19 15:37	
Toluene	<0.00439	1.88	1.58	84	1.80	90	57-120	13	25	mg/kg	10.28.19 15:37	
Ethylbenzene	<0.00578	1.88	1.67	89	1.90	95	58-131	13	25	mg/kg	10.28.19 15:37	
m,p-Xylenes	<0.00640	3.75	3.34	89	3.78	95	62-124	12	25	mg/kg	10.28.19 15:37	
o-Xylene	<0.00640	1.88	1.68	89	1.90	95	62-124	12	25	mg/kg	10.28.19 15:37	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	117		117		68-120	%	10.28.19 15:37
a,a,a-Trifluorotoluene	117		121		71-121	%	10.28.19 15:37

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

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

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

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



Terracon-Lubbock
Morris Boyd 1H Battery

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105977

Parent Sample Id: 641161-001

Matrix: Soil

MS Sample Id: 641161-001 S

Prep Method: SW5030B

Date Prep: 10.29.19

MSD Sample Id: 641161-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	11.6	94.0	10.1	0	11.2	0	54-120	10	25	mg/kg	10.30.19 00:00	X
Toluene	114	94.0	86.1	0	95.4	0	57-120	10	25	mg/kg	10.30.19 00:00	X
Ethylbenzene	97.5	94.0	71.9	0	82.5	0	58-131	14	25	mg/kg	10.30.19 00:00	X
m,p-Xylenes	109	188	87.3	0	92.9	0	62-124	6	25	mg/kg	10.30.19 00:00	X
o-Xylene	45.1	94.0	36.7	0	40.4	0	62-124	10	25	mg/kg	10.30.19 00:00	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	145	**	149	**	68-120	%	10.30.19 00:00
a,a,a-Trifluorotoluene	113		111		71-121	%	10.30.19 00:00

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

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

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

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

641161

Terracon

Office Location: Lubbock

Laboratory: Xenco
Address: 6701 Aberdeen
Lubbock, Texas 79424

Project Manager: Joseph Guesnier
Sampler's Name: Bryant McBrayer

Phone: Joseph Guesnier (806-544-9276)
Contact: SRS #:
Sampler's Signature

Page 1 of 2

CHAIN OF CUSTODY RECORD

Project Number		Project Name		Identifying Marks of Sample(s)		No. Type of Containers		ANALYSIS REQUESTED		LAB USE ONLY	
Matrix	Date	Time	Comp	Grab	Start Depth	End Depth	2 oz Glass	4 oz Glass	5035 Kit	40 ml VOA	Lab Sample ID
S	10/24/2019	13:00	X	X	0'	0.5'	X	X	X	X	1
S	10/24/2019	13:05	X	X	0.5'	1'	X	X	X	X	2
S	10/24/2019	13:10	X	X	1.5'	2'	X	X	X	X	3
S	10/24/2019	13:15	X	X	3.5'	4'	X	X	X	X	4
S	10/24/2019	13:20	X	X	4.5'	5'	X	X	X	X	5
S	10/24/2019	13:25	X	X	0'	0.5'	X	X	X	X	6
S	10/24/2019	13:30	X	X	0.5'	1'	X	X	X	X	7
S	10/24/2019	13:35	X	X	1.5'	2'	X	X	X	X	8
S	10/24/2019	13:40	X	X	3.5'	4'	X	X	X	X	9
S	10/24/2019	13:45	X	X	4.5'	5'	X	X	X	X	10
S	10/24/2019	13:50	X	X	0'	0.5'	X	X	X	X	11
S	10/24/2019	13:55	X	X	0.5'	1'	X	X	X	X	12
S	10/24/2019	14:00	X	X	1.5'	2'	X	X	X	X	13
S	10/24/2019	14:05	X	X	0'	0.5'	X	X	X	X	14
S	10/24/2019	14:10	X	X	0.5'	1'	X	X	X	X	15
S	10/24/2019	14:15	X	X	1.5'	2'	X	X	X	X	16
											17

TPH Extended 8015
Chloride (EPA Method 300)
BTEX (EPA Method 8021b)
Hold

Notes: Client: Spur
e-mail results to:
bryant.mcbrayer@terracon.com
erin.loyd@terracon.com
irguesnier@terracon.com

Lubbock Office ■ 5827 50th Street, Suite 1 ■ Lubbock, Texas 79424 ■ 806-300-0140

Responsive ■ Resourceful ■ Reliable

64161

[illegible]

Lubbock Office ■ 5827 50th Street, Suite 1 ■ Lubbock, Texas 79424 ■ 806-300-0140

Responsive ■ Resourceful ■ Reliable

IOS Number **50896**

Date/Time: 10/25/19 15:28

Created by: Brenda Ward

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Houston**

Air Bill No.: 776822064435

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
641161-001	S	HA-1 (0-0.5)	10/24/19 13:00	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 13:00	JKR	PHCC10C28 PHCC28C35	
641161-001	S	HA-1 (0-0.5)	10/24/19 13:00	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-002	S	HA-1 (0.5-1)	10/24/19 13:05	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-002	S	HA-1 (0.5-1)	10/24/19 13:05	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 13:05	JKR	PHCC10C28 PHCC28C35	
641161-003	S	HA-1 (1.5-2)	10/24/19 13:10	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 13:10	JKR	PHCC10C28 PHCC28C35	
641161-003	S	HA-1 (1.5-2)	10/24/19 13:10	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-004	S	HA-1 (3.5-4)	10/24/19 13:15	E300_CL	Chloride by EPA 300	11/13/19	04/21/20	JKR	CL	
641161-004	S	HA-1 (3.5-4)	10/24/19 13:15	SW8015MOD_NM	TPH By SW8015 Mod	11/13/19	11/07/19 13:15	JKR	PHCC10C28 PHCC28C35	
641161-005	S	HA-1 (4.5-5)	10/24/19 13:20	E300_CL	Chloride by EPA 300	11/13/19	04/21/20	JKR	CL	
641161-005	S	HA-1 (4.5-5)	10/24/19 13:20	SW8015MOD_NM	TPH By SW8015 Mod	11/13/19	11/07/19 13:20	JKR	PHCC10C28 PHCC28C35	
641161-006	S	HA-2 (0-0.5)	10/24/19 13:25	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 13:25	JKR	PHCC10C28 PHCC28C35	
641161-006	S	HA-2 (0-0.5)	10/24/19 13:25	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-007	S	HA-2 (0.5-1)	10/24/19 13:30	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 13:30	JKR	PHCC10C28 PHCC28C35	
641161-007	S	HA-2 (0.5-1)	10/24/19 13:30	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-008	S	HA-2 (1.5-2)	10/24/19 13:35	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 13:35	JKR	PHCC10C28 PHCC28C35	
641161-008	S	HA-2 (1.5-2)	10/24/19 13:35	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-009	S	HA-2 (3.5-4)	10/24/19 13:40	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-009	S	HA-2 (3.5-4)	10/24/19 13:40	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	11/07/19 13:40	JKR	PHCC10C28 PHCC28C35	
641161-009	S	HA-2 (3.5-4)	10/24/19 13:40	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	11/07/19 13:40	JKR	PHCC10C28 PHCC28C35	
641161-009	S	HA-2 (3.5-4)	10/24/19 13:40	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-010	S	HA-2 (4.5-5)	10/24/19 13:45	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	11/07/19 13:45	JKR	PHCC10C28 PHCC28C35	
641161-010	S	HA-2 (4.5-5)	10/24/19 13:45	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-010	S	HA-2 (4.5-5)	10/24/19 13:45	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	11/07/19 13:45	JKR	PHCC10C28 PHCC28C35	
641161-010	S	HA-2 (4.5-5)	10/24/19 13:45	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-011	S	HA-3 (0-0.5)	10/24/19 13:50	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 13:50	JKR	PHCC10C28 PHCC28C35	

IOS Number **50896**

Date/Time: 10/25/19 15:28

Created by: Brenda Ward

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Houston**

Air Bill No.: 776822064435

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
641161-011	S	HA-3 (0-0.5)	10/24/19 13:50	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-012	S	HA-3 (0.5-1)	10/24/19 13:55	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 13:55	JKR	PHCC10C28 PHCC28C35	
641161-012	S	HA-3 (0.5-1)	10/24/19 13:55	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-013	S	HA-3 (1.5-2)	10/24/19 14:00	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-013	S	HA-3 (1.5-2)	10/24/19 14:00	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-014	S	HA-4 (0-0.5)	10/24/19 14:05	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-014	S	HA-4 (0-0.5)	10/24/19 14:05	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 14:05	JKR	PHCC10C28 PHCC28C35	
641161-015	S	HA-4 (0.5-1)	10/24/19 14:10	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-015	S	HA-4 (0.5-1)	10/24/19 14:10	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 14:10	JKR	PHCC10C28 PHCC28C35	
641161-016	S	HA-4 (1.5-2)	10/24/19 14:15	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-016	S	HA-4 (1.5-2)	10/24/19 14:15	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-017	S	HA-5 (0-0.5)	10/24/19 14:20	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-017	S	HA-5 (0-0.5)	10/24/19 14:20	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 14:20	JKR	PHCC10C28 PHCC28C35	
641161-018	S	HA-5 (0.5-1)	10/24/19 14:25	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-018	S	HA-5 (0.5-1)	10/24/19 14:25	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 14:25	JKR	PHCC10C28 PHCC28C35	
641161-019	S	HA-5 (1.5-2)	10/24/19 14:30	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-019	S	HA-5 (1.5-2)	10/24/19 14:30	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-020	S	HA-6 (0-0.5)	10/24/19 14:35	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 14:35	JKR	PHCC10C28 PHCC28C35	
641161-020	S	HA-6 (0-0.5)	10/24/19 14:35	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-021	S	HA-6 (0.5-1)	10/24/19 14:40	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-021	S	HA-6 (0.5-1)	10/24/19 14:40	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 14:40	JKR	PHCC10C28 PHCC28C35	
641161-022	S	HA-6 (1.5-2)	10/24/19 14:45	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-022	S	HA-6 (1.5-2)	10/24/19 14:45	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-023	S	HA-7 (0-0.5)	10/24/19 14:50	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 14:50	JKR	PHCC10C28 PHCC28C35	
641161-023	S	HA-7 (0-0.5)	10/24/19 14:50	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	

Inter Office Shipment or Sample Comments:



Inter-Office Shipment

Page 3 of 3

IOS Number **50896**

Date/Time: 10/25/19 15:28

Created by: Brenda Ward

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Houston**

Air Bill No.: 776822064435

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
641161-024	S	HA-7 (0.5-1)	10/24/19 14:55	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 14:55	JKR	PHCC10C28 PHCC28C35	
641161-024	S	HA-7 (0.5-1)	10/24/19 14:55	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-025	S	HA-7 (1.5-2)	10/24/19 15:00	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-025	S	HA-7 (1.5-2)	10/24/19 15:00	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-026	S	HA-8 (0-0.5)	10/24/19 15:05	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641161-026	S	HA-8 (0-0.5)	10/24/19 15:05	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 15:05	JKR	PHCC10C28 PHCC28C35	
641161-027	S	HA-8 (0.5-1)	10/24/19 15:10	SW8015MOD_NM	TPH By SW8015 Mod	10/31/19	11/07/19 15:10	JKR	PHCC10C28 PHCC28C35	
641161-027	S	HA-8 (0.5-1)	10/24/19 15:10	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:

Date Relinquished:

Ashley Derstine

10/25/2019

Received By:

Travis Simmons

Date Received:

10/26/2019 10:00

Cooler Temperature:

3.4



Inter-Office Shipment

Page 1 of 1

IOS Number **51894**

Date/Time: 10/29/19 15:28

Created by: Ashley Derstine

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Houston**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
641161-009	S	HA-2 (3.5-4)	10/24/19 13:40	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-009	S	HA-2 (3.5-4)	10/24/19 13:40	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	11/07/19 13:40	JKR	PHCC10C28 PHCC28C35	
641161-010	S	HA-2 (4.5-5)	10/24/19 13:45	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-010	S	HA-2 (4.5-5)	10/24/19 13:45	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	11/07/19 13:45	JKR	PHCC10C28 PHCC28C35	
641161-013	S	HA-3 (1.5-2)	10/24/19 14:00	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-016	S	HA-4 (1.5-2)	10/24/19 14:15	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-019	S	HA-5 (1.5-2)	10/24/19 14:30	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-022	S	HA-6 (1.5-2)	10/24/19 14:45	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	
641161-025	S	HA-7 (1.5-2)	10/24/19 15:00	E300_CL	Chloride by EPA 300	HOLD	04/21/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:

Ashley Derstine

Received By: _____

Date Relinquished: 10/29/2019

Date Received: 10/26/2019 10:00

Cooler Temperature: 3.4



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 50896

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Brenda Ward

Date Sent: 10/25/2019 03:28 PM

Received By: Travis Simmons

Date Received: 10/26/2019 10:00 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Travis Simmons

Date: 10/26/2019



Client: Terracon-Lubbock

Date/ Time Received: 10/25/2019 01:40:00 PM

Work Order #: 641161

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	5.3	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?	N/A	
#6 *Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Chlorides and TPH sent to Stafford
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brenda Ward

Date: 10/25/2019

Checklist reviewed by:

Jessica Kramer

Date: 10/29/2019



Certificate of Analysis Summary 651065

Terracon-Lubbock, Lubbock, TX

Project Name: Morris Boyd 1H Battery

Project Id: AR197312
Contact: Joseph Guesnier
Project Location:

Date Received in Lab: Fri Jan-31-20 04:30 pm
Report Date: 05-FEB-20
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	651065-003	651065-004	651065-005	651065-008	651065-009	651065-010
	Field Id:	HA-1 (1.5-2)	HA-1 (3.5-4)	HA-1 (4.5-5)	HA-2 (1.5-2)	HA-2 (3.5-4)	HA-2 (4.5-5)
	Depth:	1.5-2 ft	3.5-4 ft	4.5-5 ft	1.5-2 ft	3.5-4 ft	4.5-5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jan-31-20 12:15	Jan-31-20 12:15	Jan-31-20 12:15	Jan-31-20 12:15	Jan-31-20 12:15	Jan-31-20 12:15
BTEX by EPA 8021B	Extracted:	Feb-03-20 12:00	Feb-04-20 14:00	Feb-03-20 12:00	Feb-03-20 12:00	Feb-03-20 12:00	Feb-03-20 12:00
	Analyzed:	Feb-04-20 00:02	Feb-05-20 01:37	Feb-03-20 21:37	Feb-03-20 23:38	Feb-03-20 22:01	Feb-03-20 22:25
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		1.77 X 0.385	2.04 0.385	<0.00831 0.0184	<0.0439 0.0971	<0.00895 0.0198	<0.00853 0.0189
Toluene		13.3 X 0.385	72.9 0.385	0.256 0.0184	0.437 0.0971	<0.00463 0.0198	<0.00442 0.0189
Ethylbenzene		41.6 X 0.385	83.2 0.385	0.436 0.0184	2.46 0.0971	0.0515 0.0198	<0.00581 0.0189
m,p-Xylenes		66.9 X 0.771	107 0.769	0.632 0.0368	4.09 0.194	0.0653 0.0396	<0.00643 0.0377
o-Xylene		30.3 X 0.385	46.8 0.385	0.290 0.0184	1.69 0.0971	0.0277 0.0198	<0.00643 0.0189
Total Xylenes		97.2 0.385	154 0.385	0.922 0.0184	5.78 0.0971	0.0930 0.0198	<0.00643 0.0189
Total BTEX		154 0.385	312 0.385	1.61 0.0184	8.68 0.0971	0.145 0.0198	<0.00442 0.0189
Chloride by EPA 300	Extracted:	Feb-03-20 14:30	Feb-03-20 14:30	Feb-03-20 14:30	Feb-03-20 14:30	Feb-03-20 14:30	Feb-03-20 14:30
	Analyzed:	Feb-03-20 17:32	Feb-03-20 18:21	Feb-03-20 18:46	Feb-03-20 19:11	Feb-03-20 19:36	Feb-03-20 20:13
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1270 DX 250	991 D 250	576 D 250	3390 D 250	1250 125	126 X 125
DRO-ORO By SW8015B	Extracted:	Feb-03-20 11:30	Feb-03-20 11:30	Feb-03-20 11:30	Feb-03-20 11:30	Feb-03-20 11:30	Feb-03-20 11:30
	Analyzed:	Feb-04-20 04:18	Feb-04-20 06:49	Feb-04-20 07:28	Feb-04-20 08:05	Feb-04-20 08:42	Feb-04-20 09:22
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Diesel Range Organics (DRO)		3970 XF 49.5	2170 49.8	29.3 25.1	287 25.1	59.8 25.1	83.8 25.2
Oil Range Hydrocarbons (ORO)		96.4 49.5	38.7 J 49.8	<7.51 25.1	<7.50 25.1	<7.52 25.1	<7.53 25.2
TPH GRO by EPA 8015 Mod.	Extracted:	Feb-04-20 14:00	Feb-04-20 14:00	Feb-03-20 12:00	Feb-03-20 12:00	Feb-03-20 12:00	Feb-03-20 12:00
	Analyzed:	Feb-05-20 02:26	Feb-05-20 02:02	Feb-03-20 21:37	Feb-03-20 23:38	Feb-03-20 22:01	Feb-03-20 22:25
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
TPH-GRO		3440 200	4510 385	17.3 3.68	343 19.4	18.7 3.96	2.61 J 3.77

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Version: 1.9%

Jessica Kramer
Project Assistant

Analytical Report 651065

for Terracon-Lubbock

Project Manager: Joseph Guesnier

Morris Boyd 1H Battery

AR197312

05-FEB-20

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)



05-FEB-20

Project Manager: **Joseph Guesnier**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: XENCO Report No(s): **651065**

Morris Boyd 1H Battery

Project Address:

Joseph Guesnier:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 651065. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 651065 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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**Sample Cross Reference 651065****Terracon-Lubbock, Lubbock, TX**

Morris Boyd 1H Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HA-1 (1.5-2)	S	01-31-20 12:15	1.5 - 2 ft	651065-003
HA-1 (3.5-4)	S	01-31-20 12:15	3.5 - 4 ft	651065-004
HA-1 (4.5-5)	S	01-31-20 12:15	4.5 - 5 ft	651065-005
HA-2 (1.5-2)	S	01-31-20 12:15	1.5 - 2 ft	651065-008
HA-2 (3.5-4)	S	01-31-20 12:15	3.5 - 4 ft	651065-009
HA-2 (4.5-5)	S	01-31-20 12:15	4.5 - 5 ft	651065-010
HA-1 (0-0.5)	S	01-31-20 12:15	0 - 0.5 ft	Not Analyzed
HA-1 (0.5-1)	S	01-31-20 12:15	0.5 - 1 ft	Not Analyzed
HA-2 (0-0.5)	S	01-31-20 12:15	0 - 0.5 ft	Not Analyzed
HA-2 (0.5-1)	S	01-31-20 12:15	0.5 - 1 ft	Not Analyzed

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Morris Boyd 1H Battery**Project ID: AR197312
Work Order Number(s): 651065Report Date: 05-FEB-20
Date Received: 01/31/2020

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3115410 Chloride by EPA 300

Lab Sample ID 651065-010 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 651065-003, -004, -005, -008, -009, -010.

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

Batch: LBA-3115478 BTEX by EPA 8021B

Sample 651065-008 was diluted due to hydrocarbons beyond xylene.

Batch: LBA-3115481 TPH GRO by EPA 8015 Mod.

Lab Sample ID 651065-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). TPH-GRO recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 651065-005, -008, -009, -010.

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

Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 651065-010.

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Morris Boyd 1H Battery**Project ID: AR197312
Work Order Number(s): 651065Report Date: 05-FEB-20
Date Received: 01/31/2020

Batch: LBA-3115597 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 651065-004.

Surrogate a,a,a-Trifluorotoluene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 651223-001 S.

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3115599 TPH GRO by EPA 8015 Mod.

Surrogate a,a,a-Trifluorotoluene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 651065-003 SD, 651065-004.

Surrogate 4-Bromofluorobenzene recovered below QC limits Data confirmed by re-analysis. Samples affected are: 7696006-1-BLK.

Batch: LBA-3115607 DRO-ORO By SW8015B

Surrogate Tricosane recovered below QC limits Data confirmed by re-analysis. Samples affected are: 7696014-1-BLK.

Surrogate n-Triacontane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 651065-003 S, 651065-003.

Surrogate Tricosane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 651065-003 S, 651065-003 SD, 651065-004, 651065-003.

Lab Sample ID 651065-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO) recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 651065-003, -004, -005, -008, -009, -010.

The Laboratory Control Sample for Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.

Diesel Range Organics (DRO) Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.

Samples in the analytical batch are: 651065-003, -004, -005, -008, -009, -010



CASE NARRATIVE

Client Name: Terracon-Lubbock

Project Name: Morris Boyd 1H Battery

Project ID: AR197312
Work Order Number(s): 651065

Report Date: 05-FEB-20
Date Received: 01/31/2020



Certificate of Analytical Results 651065

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-1 (1.5-2)

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-003

Date Collected: 01.31.20 12.15

Sample Depth: 1.5 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 02.03.20 14.30

Basis: Wet Weight

Seq Number: 3115410

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1270	250	5.72	mg/kg	02.03.20 17.44	DX	10

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 11.30

Basis: Wet Weight

Seq Number: 3115607

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	3970	49.5	14.8	mg/kg	02.04.20 04.18	XF	2
Oil Range Hydrocarbons (ORO)	PHCG2835	96.4	49.5	14.8	mg/kg	02.04.20 04.18		2

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	720	%	65-144	02.04.20 04.18	**
n-Triacontane	638-68-6	283	%	46-152	02.04.20 04.18	**

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 12.00

Basis: Wet Weight

Seq Number: 3115478

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	1.77	0.385	0.174	mg/kg	02.04.20 00.02	X	20
Toluene	108-88-3	13.3	0.385	0.0902	mg/kg	02.04.20 00.02	X	20
Ethylbenzene	100-41-4	41.6	0.385	0.119	mg/kg	02.04.20 00.02	X	20
m,p-Xylenes	179601-23-1	66.9	0.771	0.131	mg/kg	02.04.20 00.02	X	20
o-Xylene	95-47-6	30.3	0.385	0.131	mg/kg	02.04.20 00.02	X	20
Total Xylenes	1330-20-7	97.2	0.385	0.131	mg/kg	02.04.20 00.02		20
Total BTEX		154	0.385	0.0902	mg/kg	02.04.20 00.02		20

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	170	%	68-120	02.04.20 00.02	**
a,a,a-Trifluorotoluene	98-08-8	106	%	71-121	02.04.20 00.02	



Certificate of Analytical Results 651065

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-1 (1.5-2)**

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-003

Date Collected: 01.31.20 12.15

Sample Depth: 1.5 - 2 ft

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.04.20 14.00

Basis: Wet Weight

Seq Number: 3115599

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	3440	200	13.6	mg/kg	02.05.20 02.26		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	157	%	76-123	02.05.20 02.26	**		
a,a,a-Trifluorotoluene	98-08-8	70	%	69-120	02.05.20 02.26			



Certificate of Analytical Results 651065

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-1 (3.5-4)

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-004

Date Collected: 01.31.20 12.15

Sample Depth: 3.5 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 02.03.20 14.30

Basis: Wet Weight

Seq Number: 3115410

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	991	250	5.72	mg/kg	02.03.20 18.34	D	10

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 11.30

Basis: Wet Weight

Seq Number: 3115607

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	2170	49.8	14.9	mg/kg	02.04.20 06.49		2
Oil Range Hydrocarbons (ORO)	PHCG2835	38.7	49.8	14.9	mg/kg	02.04.20 06.49	J	2

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	343	%	65-144	02.04.20 06.49	**
n-Triacontane	638-68-6	119	%	46-152	02.04.20 06.49	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.04.20 14.00

Basis: Wet Weight

Seq Number: 3115597

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	2.04	0.385	0.174	mg/kg	02.05.20 01.37		20
Toluene	108-88-3	72.9	0.385	0.0900	mg/kg	02.05.20 01.37		20
Ethylbenzene	100-41-4	83.2	0.385	0.118	mg/kg	02.05.20 01.37		20
m,p-Xylenes	179601-23-1	107	0.769	0.131	mg/kg	02.05.20 01.37		20
o-Xylene	95-47-6	46.8	0.385	0.131	mg/kg	02.05.20 01.37		20
Total Xylenes	1330-20-7	154	0.385	0.131	mg/kg	02.05.20 01.37		20
Total BTEX		312	0.385	0.0900	mg/kg	02.05.20 01.37		20

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	181	%	68-120	02.05.20 01.37	**
a,a,a-Trifluorotoluene	98-08-8	108	%	71-121	02.05.20 01.37	



Certificate of Analytical Results 651065

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-1 (3.5-4)**

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-004

Date Collected: 01.31.20 12.15

Sample Depth: 3.5 - 4 ft

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.04.20 14.00

Basis: Wet Weight

Seq Number: 3115599

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	4510	385	26.1	mg/kg	02.05.20 02.02		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	111	%	76-123	02.05.20 02.02			
a,a,a-Trifluorotoluene	98-08-8	67	%	69-120	02.05.20 02.02	***		



Certificate of Analytical Results 651065

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-1 (4.5-5)

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-005

Date Collected: 01.31.20 12.15

Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 02.03.20 14.30

Basis: Wet Weight

Seq Number: 3115410

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	576	250	5.72	mg/kg	02.03.20 18.59	D	10

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 11.30

Basis: Wet Weight

Seq Number: 3115607

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	29.3	25.1	7.51	mg/kg	02.04.20 07.28		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.51	25.1	7.51	mg/kg	02.04.20 07.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	73	%	65-144	02.04.20 07.28	
n-Triacontane	638-68-6	91	%	46-152	02.04.20 07.28	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 12.00

Basis: Wet Weight

Seq Number: 3115478

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00831	0.0184	0.00831	mg/kg	02.03.20 21.37	U	1
Toluene	108-88-3	0.256	0.0184	0.00430	mg/kg	02.03.20 21.37		1
Ethylbenzene	100-41-4	0.436	0.0184	0.00566	mg/kg	02.03.20 21.37		1
m,p-Xylenes	179601-23-1	0.632	0.0368	0.00627	mg/kg	02.03.20 21.37		1
o-Xylene	95-47-6	0.290	0.0184	0.00627	mg/kg	02.03.20 21.37		1
Total Xylenes	1330-20-7	0.922	0.0184	0.00627	mg/kg	02.03.20 21.37		1
Total BTEX		1.61	0.0184	0.00430	mg/kg	02.03.20 21.37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	68-120	02.03.20 21.37	
a,a,a-Trifluorotoluene	98-08-8	118	%	71-121	02.03.20 21.37	



Certificate of Analytical Results 651065

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-1 (4.5-5)**

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-005

Date Collected: 01.31.20 12.15

Sample Depth: 4.5 - 5 ft

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 12.00

Basis: Wet Weight

Seq Number: 3115481

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	17.3	3.68	0.249	mg/kg	02.03.20 21.37		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	108	%	76-123	02.03.20 21.37			
a,a,a-Trifluorotoluene	98-08-8	97	%	69-120	02.03.20 21.37			



Certificate of Analytical Results 651065

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-2 (1.5-2)

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-008

Date Collected: 01.31.20 12.15

Sample Depth: 1.5 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 02.03.20 14.30

Basis: Wet Weight

Seq Number: 3115410

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3390	250	5.72	mg/kg	02.03.20 19.23	D	10

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 11.30

Basis: Wet Weight

Seq Number: 3115607

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	287	25.1	7.50	mg/kg	02.04.20 08.05		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.50	25.1	7.50	mg/kg	02.04.20 08.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	89	%	65-144	02.04.20 08.05	
n-Triacontane	638-68-6	99	%	46-152	02.04.20 08.05	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 12.00

Basis: Wet Weight

Seq Number: 3115478

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0439	0.0971	0.0439	mg/kg	02.03.20 23.38	U	5
Toluene	108-88-3	0.437	0.0971	0.0227	mg/kg	02.03.20 23.38		5
Ethylbenzene	100-41-4	2.46	0.0971	0.0299	mg/kg	02.03.20 23.38		5
m,p-Xylenes	179601-23-1	4.09	0.194	0.0331	mg/kg	02.03.20 23.38		5
o-Xylene	95-47-6	1.69	0.0971	0.0331	mg/kg	02.03.20 23.38		5
Total Xylenes	1330-20-7	5.78	0.0971	0.0331	mg/kg	02.03.20 23.38		5
Total BTEX		8.68	0.0971	0.0227	mg/kg	02.03.20 23.38		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	147	%	68-120	02.03.20 23.38	**
a,a,a-Trifluorotoluene	98-08-8	110	%	71-121	02.03.20 23.38	



Certificate of Analytical Results 651065

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-2 (1.5-2)**

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-008

Date Collected: 01.31.20 12.15

Sample Depth: 1.5 - 2 ft

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 12.00

Basis: Wet Weight

Seq Number: 3115481

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	343	19.4	1.32	mg/kg	02.03.20 23.38		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	169	%	76-123	02.03.20 23.38	**		
a,a,a-Trifluorotoluene	98-08-8	91	%	69-120	02.03.20 23.38			



Certificate of Analytical Results 651065

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-2 (3.5-4)

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-009

Date Collected: 01.31.20 12.15

Sample Depth: 3.5 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 02.03.20 14.30

Basis: Wet Weight

Seq Number: 3115410

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1250	125	2.86	mg/kg	02.03.20 19.36		5

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 11.30

Basis: Wet Weight

Seq Number: 3115607

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	59.8	25.1	7.52	mg/kg	02.04.20 08.42		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.52	25.1	7.52	mg/kg	02.04.20 08.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	79	%	65-144	02.04.20 08.42	
n-Triacontane	638-68-6	92	%	46-152	02.04.20 08.42	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 12.00

Basis: Wet Weight

Seq Number: 3115478

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00895	0.0198	0.00895	mg/kg	02.03.20 22.01	U	1
Toluene	108-88-3	<0.00463	0.0198	0.00463	mg/kg	02.03.20 22.01	U	1
Ethylbenzene	100-41-4	0.0515	0.0198	0.00610	mg/kg	02.03.20 22.01		1
m,p-Xylenes	179601-23-1	0.0653	0.0396	0.00675	mg/kg	02.03.20 22.01		1
o-Xylene	95-47-6	0.0277	0.0198	0.00675	mg/kg	02.03.20 22.01		1
Total Xylenes	1330-20-7	0.0930	0.0198	0.00675	mg/kg	02.03.20 22.01		1
Total BTEX		0.145	0.0198	0.00463	mg/kg	02.03.20 22.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	68-120	02.03.20 22.01	
a,a,a-Trifluorotoluene	98-08-8	117	%	71-121	02.03.20 22.01	



Certificate of Analytical Results 651065



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-2 (3.5-4)**

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-009

Date Collected: 01.31.20 12.15

Sample Depth: 3.5 - 4 ft

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 12.00

Basis: Wet Weight

Seq Number: 3115481

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	18.7	3.96	0.268	mg/kg	02.03.20 22.01		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	120	%	76-123	02.03.20 22.01			
a,a,a-Trifluorotoluene	98-08-8	95	%	69-120	02.03.20 22.01			



Certificate of Analytical Results 651065

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: HA-2 (4.5-5)

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-010

Date Collected: 01.31.20 12.15

Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 02.03.20 14.30

Basis: Wet Weight

Seq Number: 3115410

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	126	125	2.86	mg/kg	02.03.20 20.13	X	5

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 11.30

Basis: Wet Weight

Seq Number: 3115607

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	83.8	25.2	7.53	mg/kg	02.04.20 09.22		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.53	25.2	7.53	mg/kg	02.04.20 09.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	104	%	65-144	02.04.20 09.22	
n-Triacontane	638-68-6	108	%	46-152	02.04.20 09.22	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 12.00

Basis: Wet Weight

Seq Number: 3115478

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00853	0.0189	0.00853	mg/kg	02.03.20 22.25	U	1
Toluene	108-88-3	<0.00442	0.0189	0.00442	mg/kg	02.03.20 22.25	U	1
Ethylbenzene	100-41-4	<0.00581	0.0189	0.00581	mg/kg	02.03.20 22.25	U	1
m,p-Xylenes	179601-23-1	<0.00643	0.0377	0.00643	mg/kg	02.03.20 22.25	U	1
o-Xylene	95-47-6	<0.00643	0.0189	0.00643	mg/kg	02.03.20 22.25	U	1
Total Xylenes	1330-20-7	<0.00643	0.0189	0.00643	mg/kg	02.03.20 22.25	U	1
Total BTEX		<0.00442	0.0189	0.00442	mg/kg	02.03.20 22.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	82	%	68-120	02.03.20 22.25	
a,a,a-Trifluorotoluene	98-08-8	100	%	71-121	02.03.20 22.25	



Certificate of Analytical Results 651065



Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **HA-2 (4.5-5)**

Matrix: Soil

Date Received: 01.31.20 16.30

Lab Sample Id: 651065-010

Date Collected: 01.31.20 12.15

Sample Depth: 4.5 - 5 ft

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 02.03.20 12.00

Basis: Wet Weight

Seq Number: 3115481

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	2.61	3.77	0.256	mg/kg	02.03.20 22.25	J	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	75	%	76-123	02.03.20 22.25	**		
a,a,a-Trifluorotoluene	98-08-8	83	%	69-120	02.03.20 22.25			



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



Terracon-Lubbock
Morris Boyd 1H Battery

Analytical Method: Chloride by EPA 300

Seq Number: 3115410

MB Sample Id: 7695863-1-BLK

Matrix: Solid

LCS Sample Id: 7695863-1-BKS

Prep Method: E300P

Date Prep: 02.03.20

LCSD Sample Id: 7695863-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.572	250	228	91	229	92	90-110	0	20	mg/kg	02.03.20 17:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3115410

Parent Sample Id: 651065-003

Matrix: Soil

MS Sample Id: 651065-003 S

Prep Method: E300P

Date Prep: 02.03.20

MSD Sample Id: 651065-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1170	250	1540	148	1500	132	80-120	3	20	mg/kg	02.03.20 17:57	X

Analytical Method: Chloride by EPA 300

Seq Number: 3115410

Parent Sample Id: 651065-010

Matrix: Soil

MS Sample Id: 651065-010 S

Prep Method: E300P

Date Prep: 02.03.20

MSD Sample Id: 651065-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	126	250	453	131	438	125	80-120	3	20	mg/kg	02.03.20 20:38	X

Analytical Method: DRO-ORO By SW8015B

Seq Number: 3115607

MB Sample Id: 7696014-1-BLK

Matrix: Solid

LCS Sample Id: 7696014-1-BKS

Prep Method: SW8015P

Date Prep: 02.03.20

LCSD Sample Id: 7696014-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	<7.48	100	90.8	91	106	106	63-139	15	20	mg/kg	02.04.20 01:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Tricosane	63	**	65		67		65-144	%	02.04.20 01:02
n-Triacontane	80		80		84		46-152	%	02.04.20 01:02

Analytical Method: DRO-ORO By SW8015B

Seq Number: 3115607

Matrix: Solid

MB Sample Id: 7696014-1-BLK

Prep Method: SW8015P

Date Prep: 02.03.20

Parameter	MB Result	Units	Analysis Date	Flag
Oil Range Hydrocarbons (ORO)	<7.48	mg/kg	02.04.20 03:39	

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

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

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

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



Terracon-Lubbock
Morris Boyd 1H Battery

Analytical Method: DRO-ORO By SW8015B

Seq Number: 3115607

Parent Sample Id: 651065-003

Matrix: Soil

MS Sample Id: 651065-003 S

Prep Method: SW8015P

Date Prep: 02.03.20

MSD Sample Id: 651065-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	3970	99.6	4290	321	2380	0	63-139	57	20	mg/kg	02.04.20 04:56	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Tricosane	866	**	364	**	65-144	%	02.04.20 04:56
n-Triacontane	405	**	90		46-152	%	02.04.20 04:56

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115478

MB Sample Id: 7695915-1-BLK

Matrix: Solid

LCS Sample Id: 7695915-1-BKS

Prep Method: SW5030B

Date Prep: 02.03.20

LCSD Sample Id: 7695915-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00904	2.00	1.94	97	1.94	97	55-120	0	20	mg/kg	02.03.20 18:48	
Toluene	<0.00468	2.00	1.89	95	1.92	96	77-120	2	20	mg/kg	02.03.20 18:48	
Ethylbenzene	<0.00616	2.00	1.88	94	1.94	97	77-120	3	20	mg/kg	02.03.20 18:48	
m,p-Xylenes	<0.00682	4.00	3.74	94	3.84	96	78-120	3	20	mg/kg	02.03.20 18:48	
o-Xylene	<0.00682	2.00	1.90	95	1.95	98	78-120	3	20	mg/kg	02.03.20 18:48	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	98		101		83		68-120	%	02.03.20 18:48
a,a,a-Trifluorotoluene	117		113		92		71-121	%	02.03.20 18:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115597

MB Sample Id: 7696005-1-BLK

Matrix: Solid

LCS Sample Id: 7696005-1-BKS

Prep Method: SW5030B

Date Prep: 02.04.20

LCSD Sample Id: 7696005-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00904	2.00	1.82	91	1.88	94	55-120	3	20	mg/kg	02.04.20 20:23	
Toluene	<0.00468	2.00	1.80	90	1.91	96	77-120	6	20	mg/kg	02.04.20 20:23	
Ethylbenzene	<0.00616	2.00	1.76	88	1.93	97	77-120	9	20	mg/kg	02.04.20 20:23	
m,p-Xylenes	<0.00682	4.00	3.52	88	3.84	96	78-120	9	20	mg/kg	02.04.20 20:23	
o-Xylene	<0.00682	2.00	1.82	91	1.97	99	78-120	8	20	mg/kg	02.04.20 20:23	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	81		86		98		68-120	%	02.04.20 20:23
a,a,a-Trifluorotoluene	89		96		111		71-121	%	02.04.20 20:23

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

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

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

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



Terracon-Lubbock
Morris Boyd 1H Battery

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115478

Parent Sample Id: 651065-003

Matrix: Soil

MS Sample Id: 651065-003 S

Prep Method: SW5030B

Date Prep: 02.03.20

MSD Sample Id: 651065-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	1.77	38.0	3.00	3	3.44	4	54-120	14	25	mg/kg	02.04.20 00:26	X
Toluene	13.3	38.0	14.4	3	17.6	11	57-120	20	25	mg/kg	02.04.20 00:26	X
Ethylbenzene	41.6	38.0	42.5	2	48.1	17	58-131	12	25	mg/kg	02.04.20 00:26	X
m,p-Xylenes	66.9	76.0	68.4	2	77.1	13	62-124	12	25	mg/kg	02.04.20 00:26	X
o-Xylene	30.3	38.0	31.6	3	36.2	15	62-124	14	25	mg/kg	02.04.20 00:26	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	183	**	149	**	68-120	%	02.04.20 00:26
a,a,a-Trifluorotoluene	104		84		71-121	%	02.04.20 00:26

Analytical Method: BTEX by EPA 8021B

Seq Number: 3115597

Parent Sample Id: 651223-001

Matrix: Soil

MS Sample Id: 651223-001 S

Prep Method: SW5030B

Date Prep: 02.04.20

MSD Sample Id: 651223-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.0526	1.76	0.930	50	1.17	56	54-120	23	25	mg/kg	02.04.20 23:36	X
Toluene	0.109	1.76	1.02	52	1.28	59	57-120	23	25	mg/kg	02.04.20 23:36	X
Ethylbenzene	<0.00542	1.76	0.995	57	1.25	63	58-131	23	25	mg/kg	02.04.20 23:36	X
m,p-Xylenes	0.0376	3.52	1.99	55	2.52	63	62-124	24	25	mg/kg	02.04.20 23:36	X
o-Xylene	<0.00600	1.76	1.01	57	1.31	66	62-124	26	25	mg/kg	02.04.20 23:36	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	95		97		68-120	%	02.04.20 23:36
a,a,a-Trifluorotoluene	122	**	118		71-121	%	02.04.20 23:36

Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3115481

MB Sample Id: 7695916-1-BLK

Matrix: Solid

LCS Sample Id: 7695916-1-BKS

Prep Method: SW5030B

Date Prep: 02.03.20

LCSD Sample Id: 7695916-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<0.271	20.0	18.5	93	19.4	97	35-129	5	20	mg/kg	02.03.20 19:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	86		119		119		76-123	%	02.03.20 19:36
a,a,a-Trifluorotoluene	96		93		94		69-120	%	02.03.20 19:36

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

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

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

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



Terracon-Lubbock
Morris Boyd 1H Battery

Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3115599

MB Sample Id: 7696006-1-BLK

Matrix: Solid

LCS Sample Id: 7696006-1-BKS

Prep Method: SW5030B

Date Prep: 02.04.20

LCSD Sample Id: 7696006-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<0.271	20.0	17.9	90	18.8	94	35-129	5	20	mg/kg	02.04.20 21:12	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
4-Bromofluorobenzene	68	**	110		120		76-123	%	02.04.20 21:12			
a,a,a-Trifluorotoluene	72		84		91		69-120	%	02.04.20 21:12			

Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3115481

Parent Sample Id: 651065-003

Matrix: Soil

MS Sample Id: 651065-003 S

Prep Method: SW5030B

Date Prep: 02.03.20

MSD Sample Id: 651065-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	3440	387	2350	0	2610	0	35-129	10	20	mg/kg	02.04.20 01:14	X
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
4-Bromofluorobenzene			256	**	278	**	76-123	%	02.04.20 01:14			
a,a,a-Trifluorotoluene			90		90		69-120	%	02.04.20 01:14			

Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3115599

Parent Sample Id: 651065-003

Matrix: Soil

MS Sample Id: 651065-003 S

Prep Method: SW5030B

Date Prep: 02.04.20

MSD Sample Id: 651065-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	3440	967	4040	62	4240	85	35-129	5	20	mg/kg	02.05.20 02:50	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
4-Bromofluorobenzene			188	**	189	**	76-123	%	02.05.20 02:50			
a,a,a-Trifluorotoluene			79		66	**	69-120	%	02.05.20 02:50			

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

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

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

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

651065

651065

[illegible]

50th Street, Suite 1 ■ Lubbock, Texas 79424 ■ 806-300-0140
Responsive ■ Resourceful ■ Reliable



Xenco

Analytical Report 665976

for

Terracon-Lubbock

Project Manager: Bryant McBrayer

Morris Boyd 1H Battery

AR197312

07.02.2020

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



07.02.2020

Project Manager: **Bryant McBrayer**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: Eurofins Xenco, LLC Report No(s): **665976**

Morris Boyd 1H Battery

Project Address:

Bryant McBrayer:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 665976. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 665976 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
EW-CS	S	06.29.2020 13:25	2.5 - 2 ft	665976-001
WW-CS	S	06.29.2020 13:28	2.5 - 2 ft	665976-002
SW-CS	S	06.29.2020 13:31	2.5 - 2 ft	665976-003
NW-CS	S	06.29.2020 13:34	2.5 - 2 ft	665976-004
W-1 CS	S	06.29.2020 13:35	4 - 3.5 ft	665976-005
W-2 CS	S	06.29.2020 13:38	4 - 3.5 ft	665976-006
W-3 CS	S	06.29.2020 13:41	4 - 3.5 ft	665976-007
W-4 CS	S	06.29.2020 13:44	4 - 3.5 ft	665976-008
W-5 CS	S	06.29.2020 13:47	4 - 3.5 ft	665976-009
W-6 CS	S	06.29.2020 13:50	4 - 3.5 ft	665976-010
W-7 CS	S	06.29.2020 13:53	4 - 3.5 ft	665976-011
W-8 CS	S	06.29.2020 13:56	4 - 3.5 ft	665976-012
E-1 CS	S	06.29.2020 13:59	4 - 3.5 ft	665976-013
E-2 CS	S	06.29.2020 14:02	4 - 3.5 ft	665976-014
E-3 CS	S	06.29.2020 14:05	4 - 3.5 ft	665976-015
E-4 CS	S	06.29.2020 14:08	4 - 3.5 ft	665976-016
E-5 CS	S	06.29.2020 14:11	4 - 3.5 ft	665976-017
E-6 CS	S	06.29.2020 14:14	4 - 3.5 ft	665976-018
E-7 CS	S	06.29.2020 14:17	4 - 3.5 ft	665976-019
E-8 CS	S	06.29.2020 14:20	4 - 3.5 ft	665976-020



Xenco

CASE NARRATIVE**Client Name: Terracon-Lubbock****Project Name: Morris Boyd 1H Battery**Project ID: AR197312
Work Order Number(s): 665976Report Date: 07.02.2020
Date Received: 06.30.2020

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: EW-CS

Matrix: Soil

Sample Depth: 2.5 - 2 ft

Lab Sample Id: 665976-001

Date Collected: 06.29.2020 13:25

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130565

Date Prep: 07.01.2020 14:45

Prep seq: 7706576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	2230	25.0	4.29	mg/kg	07.01.2020 21:45		5

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	49.8	14.9	mg/kg	07.01.2020 13:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	273	49.8	14.9	mg/kg	07.01.2020 13:56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	52.5	49.8	14.9	mg/kg	07.01.2020 13:56		1
Total TPH	PHC635	326		14.9	mg/kg	07.01.2020 13:56		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	80	70 - 130	%		
o-Terphenyl	87	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130648

Date Prep: 07.02.2020 08:45

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706671

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	07.02.2020 11:39	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	07.02.2020 11:39	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	07.02.2020 11:39	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	07.02.2020 11:39	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	07.02.2020 11:39	U	1
Total Xylenes	1330-20-7	<0.000346		0.000346	mg/kg	07.02.2020 11:39	U	
Total BTEX		<0.000346		0.000346	mg/kg	07.02.2020 11:39	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	105	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: WW-CS

Matrix: Soil

Sample Depth: 2.5 - 2 ft

Lab Sample Id: 665976-002

Date Collected: 06.29.2020 13:28

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	302	5.00	0.858	mg/kg	07.01.2020 22:25		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	07.01.2020 12:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	07.01.2020 12:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	07.01.2020 12:51	U	1
Total TPH	PHC635	<15.0		15.0	mg/kg	07.01.2020 12:51	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	79	70 - 130	%		
o-Terphenyl	82	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130648

Date Prep: 07.02.2020 08:45

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706671

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	07.02.2020 11:59	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	07.02.2020 11:59	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	07.02.2020 11:59	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	07.02.2020 11:59	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	07.02.2020 11:59	U	1
Total Xylenes	1330-20-7	<0.000342		0.000342	mg/kg	07.02.2020 11:59	U	
Total BTEX		<0.000342		0.000342	mg/kg	07.02.2020 11:59	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: SW-CS

Matrix: Soil

Sample Depth: 2.5 - 2 ft

Lab Sample Id: 665976-003

Date Collected: 06.29.2020 13:31

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	141	25.0	4.29	mg/kg	07.01.2020 22:40		5

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	15.8	49.9	15.0	mg/kg	07.01.2020 14:18	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	07.01.2020 14:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	07.01.2020 14:18	U	1
Total TPH	PHC635	15.8		15.0	mg/kg	07.01.2020 14:18	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	80	70 - 130	%		
o-Terphenyl	81	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130648

Date Prep: 07.02.2020 08:45

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706671

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	07.02.2020 12:20	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	07.02.2020 12:20	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	07.02.2020 12:20	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	07.02.2020 12:20	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	07.02.2020 12:20	U	1
Total Xylenes	1330-20-7	<0.000345		0.000345	mg/kg	07.02.2020 12:20	U	
Total BTEX		<0.000345		0.000345	mg/kg	07.02.2020 12:20	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: NW-CS

Matrix: Soil

Sample Depth: 2.5 - 2 ft

Lab Sample Id: 665976-004

Date Collected: 06.29.2020 13:34

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	379	25.0	4.29	mg/kg	07.01.2020 22:45		5

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	49.8	14.9	mg/kg	07.01.2020 14:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	26.4	49.8	14.9	mg/kg	07.01.2020 14:39	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	49.8	14.9	mg/kg	07.01.2020 14:39	U	1
Total TPH	PHC635	26.4		14.9	mg/kg	07.01.2020 14:39	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	83	70 - 130	%		
o-Terphenyl	85	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130648

Date Prep: 07.02.2020 08:45

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706671

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000389	0.00202	0.000389	mg/kg	07.02.2020 12:40	U	1
Toluene	108-88-3	<0.000460	0.00202	0.000460	mg/kg	07.02.2020 12:40	U	1
Ethylbenzene	100-41-4	<0.000570	0.00202	0.000570	mg/kg	07.02.2020 12:40	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00404	0.00102	mg/kg	07.02.2020 12:40	U	1
o-Xylene	95-47-6	<0.000348	0.00202	0.000348	mg/kg	07.02.2020 12:40	U	1
Total Xylenes	1330-20-7	<0.000348		0.000348	mg/kg	07.02.2020 12:40	U	
Total BTEX		<0.000348		0.000348	mg/kg	07.02.2020 12:40	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: W-1 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-005

Date Collected: 06.29.2020 13:35

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	55.6	25.0	4.29	mg/kg	07.01.2020 22:50		5

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	15.4	50.0	15.0	mg/kg	07.01.2020 15:01	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	07.01.2020 15:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	07.01.2020 15:01	U	1
Total TPH	PHC635	15.4		15.0	mg/kg	07.01.2020 15:01	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	80	70 - 130	%		
o-Terphenyl	83	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130648

Date Prep: 07.02.2020 08:45

Prep seq: 7706671

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	07.02.2020 13:01	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	07.02.2020 13:01	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	07.02.2020 13:01	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	07.02.2020 13:01	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	07.02.2020 13:01	U	1
Total Xylenes	1330-20-7	<0.000344		0.000344	mg/kg	07.02.2020 13:01	U	
Total BTEX		<0.000344		0.000344	mg/kg	07.02.2020 13:01	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: W-2 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-006

Date Collected: 06.29.2020 13:38

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	165	50.0	8.58	mg/kg	07.01.2020 22:56		10

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	15.1	50.0	15.0	mg/kg	07.01.2020 15:23	J	1
Diesel Range Organics (DRO)	C10C28DRO	33.6	50.0	15.0	mg/kg	07.01.2020 15:23	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	07.01.2020 15:23	U	1
Total TPH	PHC635	48.7		15.0	mg/kg	07.01.2020 15:23	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	84	70 - 130	%		
o-Terphenyl	86	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130648

Date Prep: 07.02.2020 08:45

Prep seq: 7706671

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	07.02.2020 13:21	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	07.02.2020 13:21	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	07.02.2020 13:21	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	07.02.2020 13:21	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	07.02.2020 13:21	U	1
Total Xylenes	1330-20-7	<0.000342		0.000342	mg/kg	07.02.2020 13:21	U	
Total BTEX		<0.000342		0.000342	mg/kg	07.02.2020 13:21	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	106	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: W-3 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-007

Date Collected: 06.29.2020 13:41

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	162	50.0	8.58	mg/kg	07.01.2020 23:11		10

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	15.8	49.9	15.0	mg/kg	07.01.2020 15:45	J	1
Diesel Range Organics (DRO)	C10C28DRO	46.7	49.9	15.0	mg/kg	07.01.2020 15:45	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	07.01.2020 15:45	U	1
Total TPH	PHC635	62.5		15.0	mg/kg	07.01.2020 15:45		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	80	70 - 130	%		
o-Terphenyl	82	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130648

Date Prep: 07.02.2020 08:45

Prep seq: 7706671

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	07.02.2020 13:42	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	07.02.2020 13:42	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	07.02.2020 13:42	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	07.02.2020 13:42	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	07.02.2020 13:42	U	1
Total Xylenes	1330-20-7	<0.000343		0.000343	mg/kg	07.02.2020 13:42	U	
Total BTEX		<0.000343		0.000343	mg/kg	07.02.2020 13:42	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: W-4 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-008

Date Collected: 06.29.2020 13:44

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	49.1	25.0	4.29	mg/kg	07.01.2020 23:16		5

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	17.2	50.0	15.0	mg/kg	07.01.2020 16:07	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	07.01.2020 16:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	07.01.2020 16:07	U	1
Total TPH	PHC635	17.2		15.0	mg/kg	07.01.2020 16:07	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	77	70 - 130	%		
o-Terphenyl	77	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130648

Date Prep: 07.02.2020 08:45

Prep seq: 7706671

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	07.02.2020 14:02	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	07.02.2020 14:02	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	07.02.2020 14:02	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	07.02.2020 14:02	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	07.02.2020 14:02	U	1
Total Xylenes	1330-20-7	<0.000343		0.000343	mg/kg	07.02.2020 14:02	U	
Total BTEX		<0.000343		0.000343	mg/kg	07.02.2020 14:02	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: W-5 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-009

Date Collected: 06.29.2020 13:47

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	22.2	5.00	0.858	mg/kg	07.01.2020 23:21		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	16.7	49.9	15.0	mg/kg	07.01.2020 16:29	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	07.01.2020 16:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	07.01.2020 16:29	U	1
Total TPH	PHC635	16.7		15.0	mg/kg	07.01.2020 16:29	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	80	70 - 130	%		
o-Terphenyl	84	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130648

Date Prep: 07.02.2020 08:45

Prep seq: 7706671

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	07.02.2020 14:23	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	07.02.2020 14:23	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	07.02.2020 14:23	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	07.02.2020 14:23	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	07.02.2020 14:23	U	1
Total Xylenes	1330-20-7	<0.000342		0.000342	mg/kg	07.02.2020 14:23	U	
Total BTEX		<0.000342		0.000342	mg/kg	07.02.2020 14:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: W-6 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-010

Date Collected: 06.29.2020 13:50

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	97.2	5.00	0.858	mg/kg	07.01.2020 23:26		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	16.6	50.0	15.0	mg/kg	07.01.2020 16:51	J	1
Diesel Range Organics (DRO)	C10C28DRO	22.3	50.0	15.0	mg/kg	07.01.2020 16:51	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	07.01.2020 16:51	U	1
Total TPH	PHC635	38.9		15.0	mg/kg	07.01.2020 16:51	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	84	70 - 130	%		
o-Terphenyl	88	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130648

Date Prep: 07.02.2020 08:45

Prep seq: 7706671

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	07.02.2020 14:43	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	07.02.2020 14:43	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	07.02.2020 14:43	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	07.02.2020 14:43	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	07.02.2020 14:43	U	1
Total Xylenes	1330-20-7	<0.000344		0.000344	mg/kg	07.02.2020 14:43	U	
Total BTEX		<0.000344		0.000344	mg/kg	07.02.2020 14:43	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	101	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: W-7 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-011

Date Collected: 06.29.2020 13:53

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	60.3	25.0	4.29	mg/kg	07.01.2020 23:31		5

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	15.0	49.8	14.9	mg/kg	07.01.2020 17:35	J	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	49.8	14.9	mg/kg	07.01.2020 17:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	49.8	14.9	mg/kg	07.01.2020 17:35	U	1
Total TPH	PHC635	15.0		14.9	mg/kg	07.01.2020 17:35	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	83	70 - 130	%		
o-Terphenyl	88	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130667

Date Prep: 07.02.2020 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	07.02.2020 12:25	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	07.02.2020 12:25	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	07.02.2020 12:25	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	07.02.2020 12:25	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	07.02.2020 12:25	U	1
Total Xylenes	1330-20-7	<0.000344		0.000344	mg/kg	07.02.2020 12:25	U	
Total BTEX		<0.000344		0.000344	mg/kg	07.02.2020 12:25	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	113	70 - 130	%		
4-Bromofluorobenzene	112	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: **W-8 CS**

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-012

Date Collected: 06.29.2020 13:56

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	85.0	25.0	4.29	mg/kg	07.01.2020 23:36		5

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	07.01.2020 17:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.3	50.0	15.0	mg/kg	07.01.2020 17:57	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	07.01.2020 17:57	U	1
Total TPH	PHC635	15.3		15.0	mg/kg	07.01.2020 17:57	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	85	70 - 130	%		
o-Terphenyl	88	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130667

Date Prep: 07.02.2020 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000381	0.00198	0.000381	mg/kg	07.02.2020 12:45	U	1
Toluene	108-88-3	<0.000451	0.00198	0.000451	mg/kg	07.02.2020 12:45	U	1
Ethylbenzene	100-41-4	<0.000559	0.00198	0.000559	mg/kg	07.02.2020 12:45	U	1
m,p-Xylenes	179601-23-1	<0.00100	0.00396	0.00100	mg/kg	07.02.2020 12:45	U	1
o-Xylene	95-47-6	<0.000341	0.00198	0.000341	mg/kg	07.02.2020 12:45	U	1
Total Xylenes	1330-20-7	<0.000341		0.000341	mg/kg	07.02.2020 12:45	U	
Total BTEX		<0.000341		0.000341	mg/kg	07.02.2020 12:45	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	111	70 - 130	%		
4-Bromofluorobenzene	105	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: E-1 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-013

Date Collected: 06.29.2020 13:59

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	142	25.0	4.29	mg/kg	07.01.2020 23:51		5

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	15.1	49.9	15.0	mg/kg	07.01.2020 18:19	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	07.01.2020 18:19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	07.01.2020 18:19	U	1
Total TPH	PHC635	15.1		15.0	mg/kg	07.01.2020 18:19	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	82	70 - 130	%		
o-Terphenyl	83	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130667

Date Prep: 07.02.2020 09:00

Prep seq: 7706670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	07.02.2020 13:06	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	07.02.2020 13:06	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	07.02.2020 13:06	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	07.02.2020 13:06	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	07.02.2020 13:06	U	1
Total Xylenes	1330-20-7	<0.000342		0.000342	mg/kg	07.02.2020 13:06	U	
Total BTEX		<0.000342		0.000342	mg/kg	07.02.2020 13:06	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	109	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: E-2 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-014

Date Collected: 06.29.2020 14:02

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	117	5.00	0.858	mg/kg	07.01.2020 23:56		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	15.4	49.8	14.9	mg/kg	07.01.2020 18:40	J	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	49.8	14.9	mg/kg	07.01.2020 18:40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	49.8	14.9	mg/kg	07.01.2020 18:40	U	1
Total TPH	PHC635	15.4		14.9	mg/kg	07.01.2020 18:40	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	85	70 - 130	%		
o-Terphenyl	85	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130667

Date Prep: 07.02.2020 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	07.02.2020 13:26	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	07.02.2020 13:26	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	07.02.2020 13:26	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	07.02.2020 13:26	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	07.02.2020 13:26	U	1
Total Xylenes	1330-20-7	<0.000342		0.000342	mg/kg	07.02.2020 13:26	U	
Total BTEX		<0.000342		0.000342	mg/kg	07.02.2020 13:26	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	109	70 - 130	%		
4-Bromofluorobenzene	101	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: E-3 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-015

Date Collected: 06.29.2020 14:05

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	123	25.0	4.29	mg/kg	07.02.2020 00:11		5

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	07.01.2020 19:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	138	50.0	15.0	mg/kg	07.01.2020 19:02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	27.7	50.0	15.0	mg/kg	07.01.2020 19:02	J	1
Total TPH	PHC635	166		15.0	mg/kg	07.01.2020 19:02		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	79	70 - 130	%		
o-Terphenyl	79	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130667

Date Prep: 07.02.2020 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	07.02.2020 13:47	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	07.02.2020 13:47	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	07.02.2020 13:47	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	07.02.2020 13:47	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	07.02.2020 13:47	U	1
Total Xylenes	1330-20-7	<0.000344		0.000344	mg/kg	07.02.2020 13:47	U	
Total BTEX		<0.000344		0.000344	mg/kg	07.02.2020 13:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	110	70 - 130	%		
4-Bromofluorobenzene	97	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: E-4 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-016

Date Collected: 06.29.2020 14:08

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	29.2	5.00	0.858	mg/kg	07.02.2020 00:16		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	15.4	50.0	15.0	mg/kg	07.01.2020 19:24	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	07.01.2020 19:24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	07.01.2020 19:24	U	1
Total TPH	PHC635	15.4		15.0	mg/kg	07.01.2020 19:24	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	79	70 - 130	%		
o-Terphenyl	79	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130667

Date Prep: 07.02.2020 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	07.02.2020 14:08	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	07.02.2020 14:08	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	07.02.2020 14:08	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	07.02.2020 14:08	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	07.02.2020 14:08	U	1
Total Xylenes	1330-20-7	<0.000346		0.000346	mg/kg	07.02.2020 14:08	U	
Total BTEX		<0.000346		0.000346	mg/kg	07.02.2020 14:08	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	112	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: E-5 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-017

Date Collected: 06.29.2020 14:11

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	548	25.0	4.29	mg/kg	07.02.2020 00:22		5

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	16.2	49.9	15.0	mg/kg	07.01.2020 19:46	J	1
Diesel Range Organics (DRO)	C10C28DRO	15.0	49.9	15.0	mg/kg	07.01.2020 19:46	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	07.01.2020 19:46	U	1
Total TPH	PHC635	31.2		15.0	mg/kg	07.01.2020 19:46	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	77	70 - 130	%		
o-Terphenyl	77	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130667

Date Prep: 07.02.2020 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	07.02.2020 14:28	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	07.02.2020 14:28	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	07.02.2020 14:28	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	07.02.2020 14:28	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	07.02.2020 14:28	U	1
Total Xylenes	1330-20-7	<0.000343		0.000343	mg/kg	07.02.2020 14:28	U	
Total BTEX		<0.000343		0.000343	mg/kg	07.02.2020 14:28	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	112	70 - 130	%		
4-Bromofluorobenzene	107	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: E-6 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-018

Date Collected: 06.29.2020 14:14

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	142	5.00	0.858	mg/kg	07.02.2020 00:27		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	15.4	50.0	15.0	mg/kg	07.01.2020 20:07	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	07.01.2020 20:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	07.01.2020 20:07	U	1
Total TPH	PHC635	15.4		15.0	mg/kg	07.01.2020 20:07	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	80	70 - 130	%		
o-Terphenyl	80	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130667

Date Prep: 07.02.2020 09:00

Prep seq: 7706670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	07.02.2020 14:49	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	07.02.2020 14:49	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	07.02.2020 14:49	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	07.02.2020 14:49	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	07.02.2020 14:49	U	1
Total Xylenes	1330-20-7	<0.000345		0.000345	mg/kg	07.02.2020 14:49	U	
Total BTEX		<0.000345		0.000345	mg/kg	07.02.2020 14:49	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	113	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: E-7 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-019

Date Collected: 06.29.2020 14:17

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	376	50.0	8.58	mg/kg	07.02.2020 00:32		10

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	07.01.2020 20:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	37.2	50.0	15.0	mg/kg	07.01.2020 20:29	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	15.9	50.0	15.0	mg/kg	07.01.2020 20:29	J	1
Total TPH	PHC635	53.1		15.0	mg/kg	07.01.2020 20:29		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	84	70 - 130	%		
o-Terphenyl	86	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130667

Date Prep: 07.02.2020 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	07.02.2020 15:09	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	07.02.2020 15:09	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	07.02.2020 15:09	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	07.02.2020 15:09	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	07.02.2020 15:09	U	1
Total Xylenes	1330-20-7	<0.000346		0.000346	mg/kg	07.02.2020 15:09	U	
Total BTEX		<0.000346		0.000346	mg/kg	07.02.2020 15:09	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	112	70 - 130	%		
4-Bromofluorobenzene	105	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: E-8 CS

Matrix: Soil

Sample Depth: 4 - 3.5 ft

Lab Sample Id: 665976-020

Date Collected: 06.29.2020 14:20

Date Received: 06.30.2020 15:34

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	157	5.00	0.858	mg/kg	07.02.2020 00:37		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	16.1	49.9	15.0	mg/kg	07.01.2020 20:50	J	1
Diesel Range Organics (DRO)	C10C28DRO	16.5	49.9	15.0	mg/kg	07.01.2020 20:50	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	07.01.2020 20:50	U	1
Total TPH	PHC635	32.6		15.0	mg/kg	07.01.2020 20:50	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	76	70 - 130	%		
o-Terphenyl	74	70 - 130	%		

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130667

Date Prep: 07.02.2020 09:00

Prep seq: 7706670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	07.02.2020 16:12	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	07.02.2020 16:12	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	07.02.2020 16:12	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	07.02.2020 16:12	U	1
o-Xylene	95-47-6	0.00114	0.00200	0.000344	mg/kg	07.02.2020 16:12	J	1
Total Xylenes	1330-20-7	0.00114		0.000344	mg/kg	07.02.2020 16:12	J	
Total BTEX		0.00114		0.000344	mg/kg	07.02.2020 16:12	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	109	70 - 130	%		
4-Bromofluorobenzene	96	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: 7706576-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7706576-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130565

Date Prep: 07.01.2020 14:45

Prep seq: 7706576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	07.01.2020 19:23	U	1

Sample Id: 7706585-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7706585-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3130566

Date Prep: 07.01.2020 15:05

Prep seq: 7706585

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	07.01.2020 22:10	U	1

Sample Id: 7706595-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7706595-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3130628

Date Prep: 07.01.2020 11:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706595

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	07.01.2020 11:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	07.01.2020 11:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	07.01.2020 11:45	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	78	70 - 130	%		
o-Terphenyl	82	70 - 130	%		



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Certificate of Analytical Results

665976

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: 7706670-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7706670-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130667

Date Prep: 07.02.2020 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	07.02.2020 11:44	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	07.02.2020 11:44	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	07.02.2020 11:44	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	07.02.2020 11:44	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	07.02.2020 11:44	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	108	70 - 130	%		
4-Bromofluorobenzene	95	70 - 130	%		

Sample Id: 7706671-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7706671-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021B

Prep Method: 5035A

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3130648

Date Prep: 07.02.2020 08:45

Subcontractor: SUB: T104704400-19-19

Prep seq: 7706671

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	07.02.2020 11:19	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	07.02.2020 11:19	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	07.02.2020 11:19	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	07.02.2020 11:19	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	07.02.2020 11:19	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	102	70 - 130	%		



Xenco

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



Xenco

Form 2 - Surrogate Recoveries

Project Name: Morris Boyd 1H Battery

Report Date: 07022020

Project ID: AR197312

Work Orders : 665976

Lab Batch #: 3130648

Sample: 7706671-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.02.2020 09:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	70-130	
4-Bromofluorobenzene	0.0292	0.0300	97	70-130	

Lab Batch #: 3130648

Sample: 7706671-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.02.2020 09:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0296	0.0300	99	70-130	
4-Bromofluorobenzene	0.0298	0.0300	99	70-130	

Lab Batch #: 3130648

Sample: 665976-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07.02.2020 10:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0291	0.0300	97	70-130	
4-Bromofluorobenzene	0.0298	0.0300	99	70-130	

Lab Batch #: 3130648

Sample: 665976-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07.02.2020 10:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0293	0.0300	98	70-130	
4-Bromofluorobenzene	0.0299	0.0300	100	70-130	

Lab Batch #: 3130648

Sample: 7706671-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.02.2020 11:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0306	0.0300	102	70-130	
4-Bromofluorobenzene	0.0305	0.0300	102	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Xenco

Form 2 - Surrogate Recoveries

Project Name: Morris Boyd 1H Battery

Report Date: 07022020

Work Orders : 665976

Project ID: AR197312

Lab Batch #: 3130667

Sample: 7706670-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.02.2020 09:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0290	0.0300	97	70-130	
4-Bromofluorobenzene	0.0287	0.0300	96	70-130	

Lab Batch #: 3130667

Sample: 7706670-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.02.2020 10:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0293	0.0300	98	70-130	
4-Bromofluorobenzene	0.0279	0.0300	93	70-130	

Lab Batch #: 3130667

Sample: 665946-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07.02.2020 10:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0301	0.0300	100	70-130	
4-Bromofluorobenzene	0.0288	0.0300	96	70-130	

Lab Batch #: 3130667

Sample: 665946-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07.02.2020 11:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0295	0.0300	98	70-130	
4-Bromofluorobenzene	0.0281	0.0300	94	70-130	

Lab Batch #: 3130667

Sample: 7706670-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.02.2020 11:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0323	0.0300	108	70-130	
4-Bromofluorobenzene	0.0285	0.0300	95	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Xenco

Form 2 - Surrogate Recoveries

Project Name: Morris Boyd 1H Battery

Report Date: 07022020

Work Orders : 665976

Project ID: AR197312

Lab Batch #: 3130628

Sample: 7706595-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.01.2020 11:45

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.4	100	78	70-130	
o-Terphenyl	40.9	50.0	82	70-130	

Lab Batch #: 3130628

Sample: 7706595-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.01.2020 12:07

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.2	100	79	70-130	
o-Terphenyl	41.3	50.0	83	70-130	

Lab Batch #: 3130628

Sample: 7706595-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.01.2020 12:29

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.1	100	81	70-130	
o-Terphenyl	42.4	50.0	85	70-130	

Lab Batch #: 3130628

Sample: 665976-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07.01.2020 13:12

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.2	99.7	82	70-130	
o-Terphenyl	43.8	49.9	88	70-130	

Lab Batch #: 3130628

Sample: 665976-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07.01.2020 13:34

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.1	99.9	81	70-130	
o-Terphenyl	42.4	50.0	85	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries

Project Name: Morris Boyd 1H Battery

Work Order #: 665976

Project ID: AR197312

Analyst: KTL

Date Prepared: 07.02.2020

Date Analyzed: 07.02.2020

Lab Batch ID: 3130667

Sample: 7706670-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000385	0.100	0.110	110	0.100	0.104	104	6	70-130	35	
Toluene	<0.000456	0.100	0.109	109	0.100	0.101	101	8	70-130	35	
Ethylbenzene	<0.000565	0.100	0.109	109	0.100	0.0998	100	9	70-130	35	
m,p-Xylenes	<0.00101	0.200	0.209	105	0.200	0.191	96	9	70-130	35	
o-Xylene	<0.000344	0.100	0.104	104	0.100	0.0954	95	9	70-130	35	

Analyst: KTL

Date Prepared: 07.02.2020

Date Analyzed: 07.02.2020

Lab Batch ID: 3130648

Sample: 7706671-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000385	0.100	0.0933	93	0.100	0.0935	94	0	70-130	35	
Toluene	<0.000456	0.100	0.0896	90	0.100	0.0999	100	11	70-130	35	
Ethylbenzene	<0.000565	0.100	0.102	102	0.100	0.103	103	1	70-130	35	
m,p-Xylenes	<0.00101	0.200	0.204	102	0.200	0.207	104	1	70-130	35	
o-Xylene	<0.000344	0.100	0.102	102	0.100	0.104	104	2	70-130	35	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries

Project Name: Morris Boyd 1H Battery

Work Order #: 665976

Project ID: AR197312

Analyst: CHE

Date Prepared: 07.01.2020

Date Analyzed: 07.01.2020

Lab Batch ID: 3130565

Sample: 7706576-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	265	106	250	264	106	0	90-110	20	

Analyst: CHE

Date Prepared: 07.01.2020

Date Analyzed: 07.01.2020

Lab Batch ID: 3130566

Sample: 7706585-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	241	96	250	266	106	10	90-110	20	

Analyst: ARM

Date Prepared: 07.01.2020

Date Analyzed: 07.01.2020

Lab Batch ID: 3130628

Sample: 7706595-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	840	84	1000	834	83	1	70-130	20	
Diesel Range Organics (DRO)	<15.0	1000	878	88	1000	826	83	6	70-130	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries



Xenco

Project Name: Morris Boyd 1H Battery

Work Order #: 665976

Lab Batch ID: 3130648

Date Analyzed: 07.02.2020

Reporting Units: mg/kg

QC- Sample ID: 665976-001 S

Date Prepared: 07.02.2020

Batch #: 1

Analyst: KTL

Report Date: 07022020

Project ID: AR197312

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000385	0.100	0.0872	87	0.100	0.0872	87	0	70-130	35	
Toluene	<0.000456	0.100	0.0878	88	0.100	0.0791	79	10	70-130	35	
Ethylbenzene	<0.000565	0.100	0.0795	80	0.100	0.0764	76	4	70-130	35	
m,p-Xylenes	<0.00101	0.200	0.149	75	0.200	0.140	70	6	70-130	35	
o-Xylene	<0.000344	0.100	0.0875	88	0.100	0.0844	84	4	70-130	35	

Lab Batch ID: 3130667

Date Analyzed: 07.02.2020

Reporting Units: mg/kg

QC- Sample ID: 665946-001 S

Date Prepared: 07.02.2020

Batch #: 1

Analyst: KTL

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000381	0.0990	0.0986	100	0.0996	0.0865	87	13	70-130	35	
Toluene	<0.000451	0.0990	0.0876	88	0.0996	0.0788	79	11	70-130	35	
Ethylbenzene	<0.000559	0.0990	0.0807	82	0.0996	0.0724	73	11	70-130	35	
m,p-Xylenes	<0.00100	0.198	0.154	78	0.199	0.139	70	10	70-130	35	
o-Xylene	<0.000341	0.0990	0.0779	79	0.0996	0.0702	70	10	70-130	35	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
 Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



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Form 3 - MS / MSD Recoveries

Project Name: Morris Boyd 1H Battery

Work Order #: 665976

Lab Batch ID: 3130565

Date Analyzed: 07.01.2020

Reporting Units: mg/kg

QC- Sample ID: 665798-012 S

Date Prepared: 07.01.2020

Batch #: 1

Analyst: CHE

Report Date: 07022020

Project ID: AR197312

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1670	1260	3180	120	1260	3120	115	2	90-110	20	X

Lab Batch ID: 3130565

QC- Sample ID: 665943-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07.01.2020

Date Prepared: 07.01.2020

Analyst: CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	4620	2480	7350	110	2480	7400	112	1	90-110	20	X

Lab Batch ID: 3130566

QC- Sample ID: 665976-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07.01.2020

Date Prepared: 07.01.2020

Analyst: CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	302	250	555	101	250	577	110	4	90-110	20	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
 Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Xenco

Form 3 - MS / MSD Recoveries

Project Name: Morris Boyd 1H Battery

Work Order #: 665976

Lab Batch ID: 3130566

Date Analyzed: 07.01.2020

Reporting Units: mg/kg

QC- Sample ID: 665976-012 S

Date Prepared: 07.01.2020

Batch #: 1

Analyst: CHE

Report Date: 07022020

Project ID: AR197312

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	85.0	1250	1450	109	1250	1430	108	1	90-110	20	

Lab Batch ID: 3130628

QC- Sample ID: 665976-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07.01.2020

Date Prepared: 07.01.2020

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	842	84	999	853	85	1	70-130	20	
Diesel Range Organics (DRO)	<15.0	997	925	93	999	923	92	0	70-130	20	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
 Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

665976

Inter-Office Shipment

IOS Number : **66391**

Date/Time: 06.30.2020

Created by: Randall Lee

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.: 770842908926

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
665976-001	S	EW-CS	06.29.2020 13:25	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-001	S	EW-CS	06.29.2020 13:25	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-001	S	EW-CS	06.29.2020 13:25	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-002	S	WW-CS	06.29.2020 13:28	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-002	S	WW-CS	06.29.2020 13:28	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-002	S	WW-CS	06.29.2020 13:28	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-003	S	SW-CS	06.29.2020 13:31	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-003	S	SW-CS	06.29.2020 13:31	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-003	S	SW-CS	06.29.2020 13:31	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-004	S	NW-CS	06.29.2020 13:34	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-004	S	NW-CS	06.29.2020 13:34	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-004	S	NW-CS	06.29.2020 13:34	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-005	S	W-1 CS	06.29.2020 13:35	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-005	S	W-1 CS	06.29.2020 13:35	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-005	S	W-1 CS	06.29.2020 13:35	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-006	S	W-2 CS	06.29.2020 13:38	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-006	S	W-2 CS	06.29.2020 13:38	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-006	S	W-2 CS	06.29.2020 13:38	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-007	S	W-3 CS	06.29.2020 13:41	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-007	S	W-3 CS	06.29.2020 13:41	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-007	S	W-3 CS	06.29.2020 13:41	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-008	S	W-4 CS	06.29.2020 13:44	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-008	S	W-4 CS	06.29.2020 13:44	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-008	S	W-4 CS	06.29.2020 13:44	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-009	S	W-5 CS	06.29.2020 13:47	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	

Inter-Office Shipment

IOS Number : **66391**

Date/Time: 06.30.2020

Created by: Randall Lee

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.: 770842908926

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
665976-009	S	W-5 CS	06.29.2020 13:47	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-009	S	W-5 CS	06.29.2020 13:47	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-010	S	W-6 CS	06.29.2020 13:50	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-010	S	W-6 CS	06.29.2020 13:50	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-010	S	W-6 CS	06.29.2020 13:50	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-011	S	W-7 CS	06.29.2020 13:53	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-011	S	W-7 CS	06.29.2020 13:53	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-011	S	W-7 CS	06.29.2020 13:53	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-012	S	W-8 CS	06.29.2020 13:56	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-012	S	W-8 CS	06.29.2020 13:56	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-012	S	W-8 CS	06.29.2020 13:56	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-013	S	E-1 CS	06.29.2020 13:59	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-013	S	E-1 CS	06.29.2020 13:59	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-013	S	E-1 CS	06.29.2020 13:59	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-014	S	E-2 CS	06.29.2020 14:02	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-014	S	E-2 CS	06.29.2020 14:02	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-014	S	E-2 CS	06.29.2020 14:02	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-015	S	E-3 CS	06.29.2020 14:05	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-015	S	E-3 CS	06.29.2020 14:05	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-015	S	E-3 CS	06.29.2020 14:05	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-016	S	E-4 CS	06.29.2020 14:08	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-016	S	E-4 CS	06.29.2020 14:08	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-016	S	E-4 CS	06.29.2020 14:08	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-017	S	E-5 CS	06.29.2020 14:11	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-017	S	E-5 CS	06.29.2020 14:11	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	

Inter Office Shipment or Sample Comments:

Inter-Office Shipment

IOS Number : **66391**

Date/Time: 06.30.2020

Created by: Randall Lee

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.: 770842908926

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
665976-017	S	E-5 CS	06.29.2020 14:11	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-018	S	E-6 CS	06.29.2020 14:14	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-018	S	E-6 CS	06.29.2020 14:14	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-018	S	E-6 CS	06.29.2020 14:14	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-019	S	E-7 CS	06.29.2020 14:17	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	
665976-019	S	E-7 CS	06.29.2020 14:17	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-019	S	E-7 CS	06.29.2020 14:17	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-020	S	E-8 CS	06.29.2020 14:20	SW8021B	BTEX by EPA 8021B	07.02.2020	07.13.2020	JKR	BR4FBZ BZ BZME EBZ	
665976-020	S	E-8 CS	06.29.2020 14:20	E300	Inorganic Anions by EPA 300	07.02.2020	07.27.2020	JKR	CL	
665976-020	S	E-8 CS	06.29.2020 14:20	SW8015MOD_NM	TPH by SW8015 Mod	07.02.2020	07.13.2020	JKR	PHCC10C28 PHCC28C3	

Inter Office Shipment or Sample Comments:

Relinquished By:



Received By:



Date Relinquished:

Randall Lee

Date Received:

Brianna Teel

06.30.2020

07.01.2020

Cooler Temperature: 0.5



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 66391

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-8

Sent By: Randall Lee

Date Sent: 06.30.2020 04.33 PM

Received By: Brianna Teel

Date Received: 07.01.2020 09.59 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	No
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 07.01.2020

Certificate of Analysis Summary 668301

Terracon-Lubbock, Lubbock, TX

Project Name: Morris Boyd

Project Id: AR197312
 Contact: Joseph Guesnier
 Project Location:

Date Received in Lab: Mon 07.27.2020 16:36
 Report Date: 07.29.2020 15:55
 Project Manager: Jessica Kramer

Analysis Requested	Lab Id: 668301-001 Field Id: EW-1.1 Depth: 2-2.5 Matrix: SOIL Sampled: 07.24.2020 11:00					
BTEX by EPA 8021B SUB: T104704400-20-20	Extracted: 07.27.2020 16:45 Analyzed: 07.28.2020 20:25 Units/RL: mg/kg RL					
Benzene	<0.00200 0.00200					
Toluene	<0.00200 0.00200					
Ethylbenzene	<0.00200 0.00200					
m,p-Xylenes	<0.00399 0.00399					
o-Xylene	<0.00200 0.00200					
Xylenes, Total	<0.00200 0.00200					
Total BTEX	<0.00200 0.00200					
Chloride by EPA 300 SUB: T104704400-20-20	Extracted: 07.28.2020 14:20 Analyzed: 07.29.2020 00:42 Units/RL: mg/kg RL					
Chloride	232 25.0					
TPH by SW8015 Mod SUB: T104704400-20-20	Extracted: 07.28.2020 16:00 Analyzed: 07.28.2020 22:22 Units/RL: mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<50.0 50.0					
Diesel Range Organics (DRO)	<50.0 50.0					
Motor Oil Range Hydrocarbons (MRO)	<50.0 50.0					
Total TPH	<50.0 50.0					

BRL - Below Reporting Limit

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



Analytical Report 668301

for

Terracon-Lubbock

Project Manager: Joseph Guesnier

Morris Boyd

AR197312

07.29.2020

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

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

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

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



07.29.2020

Project Manager: **Joseph Guesnier**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: Eurofins Xenco, LLC Report No(s): **668301**

Morris Boyd

Project Address:

Joseph Guesnier:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 668301. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 668301 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 668301

Terracon-Lubbock, Lubbock, TX

Morris Boyd

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
EW-1.1	S	07.24.2020 11:00	2 - 2.5	668301-001



CASE NARRATIVE

Client Name: Terracon-Lubbock

Project Name: Morris Boyd

Project ID: AR197312
Work Order Number(s): 668301

Report Date: 07.29.2020
Date Received: 07.27.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 668301

Terracon-Lubbock, Lubbock, TX

Morris Boyd

Sample Id: **EW-1.1**
Lab Sample Id: 668301-001

Matrix: Soil
Date Collected: 07.24.2020 11:00

Date Received: 07.27.2020 16:36
Sample Depth: 2 - 2.5

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3132874

Date Prep: 07.28.2020 14:20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-20-20

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	232	25.0	mg/kg	07.29.2020 00:42		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3132917

Date Prep: 07.28.2020 16:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-20-20

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	07.28.2020 22:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	07.28.2020 22:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	07.28.2020 22:22	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	07.28.2020 22:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-130	07.28.2020 22:22	
o-Terphenyl	84-15-1	112	%	70-130	07.28.2020 22:22	



Certificate of Analytical Results 668301

Terracon-Lubbock, Lubbock, TX

Morris Boyd

Sample Id: **EW-1.1**
Lab Sample Id: 668301-001

Matrix: Soil
Date Collected: 07.24.2020 11:00

Date Received: 07.27.2020 16:36
Sample Depth: 2 - 2.5

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 07.27.2020 16:45

Basis: Wet Weight

Seq Number: 3132827

SUB: T104704400-20-20

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.28.2020 20:25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.28.2020 20:25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.28.2020 20:25	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.28.2020 20:25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.28.2020 20:25	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	07.28.2020 20:25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.28.2020 20:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	07.28.2020 20:25	
4-Bromofluorobenzene	460-00-4	126	%	70-130	07.28.2020 20:25	

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



Terracon-Lubbock

Morris Boyd

Analytical Method: Chloride by EPA 300

Seq Number: 3132874

MB Sample Id: 7708211-1-BLK

Matrix: Solid

LCS Sample Id: 7708211-1-BKS

Prep Method: E300P

Date Prep: 07.28.2020

LCSD Sample Id: 7708211-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	241	96	241	96	90-110	0	20	mg/kg	07.29.2020 00:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3132874

Parent Sample Id: 668296-006

Matrix: Soil

MS Sample Id: 668296-006 S

Prep Method: E300P

Date Prep: 07.28.2020

MSD Sample Id: 668296-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.18	250	256	100	255	100	90-110	0	20	mg/kg	07.29.2020 00:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3132874

Parent Sample Id: 668305-012

Matrix: Soil

MS Sample Id: 668305-012 S

Prep Method: E300P

Date Prep: 07.28.2020

MSD Sample Id: 668305-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	23.9	248	269	99	269	99	90-110	0	20	mg/kg	07.29.2020 01:52	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3132917

MB Sample Id: 7708255-1-BLK

Matrix: Solid

LCS Sample Id: 7708255-1-BKS

Prep Method: SW8015P

Date Prep: 07.28.2020

LCSD Sample Id: 7708255-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1050	105	1110	111	70-130	6	20	mg/kg	07.28.2020 21:44	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1080	108	70-130	2	20	mg/kg	07.28.2020 21:44	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	117		116		124		70-130	%	07.28.2020 21:44			
o-Terphenyl	126		111		81		70-130	%	07.28.2020 21:44			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3132917

Matrix: Solid

MB Sample Id: 7708255-1-BLK

Prep Method: SW8015P

Date Prep: 07.28.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	07.28.2020 21:26	

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

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

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

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



Terracon-Lubbock

Morris Boyd

Analytical Method: TPH by SW8015 Mod

Seq Number: 3132917

Parent Sample Id: 668301-001

Matrix: Soil

MS Sample Id: 668301-001 S

Prep Method: SW8015P

Date Prep: 07.28.2020

MSD Sample Id: 668301-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	1010	101	969	97	70-130	4	20	mg/kg	07.28.2020 22:41	
Diesel Range Organics (DRO)	<49.9	997	977	98	936	94	70-130	4	20	mg/kg	07.28.2020 22:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		130		70-130	%	07.28.2020 22:41
o-Terphenyl	128		123		70-130	%	07.28.2020 22:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3132827

MB Sample Id: 7708224-1-BLK

Matrix: Solid

LCS Sample Id: 7708224-1-BKS

Prep Method: SW5035A

Date Prep: 07.27.2020

LCSD Sample Id: 7708224-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.111	111	0.104	104	70-130	7	35	mg/kg	07.28.2020 10:10	
Toluene	<0.00200	0.100	0.0992	99	0.0912	91	70-130	8	35	mg/kg	07.28.2020 10:10	
Ethylbenzene	<0.00200	0.100	0.0950	95	0.0882	88	70-130	7	35	mg/kg	07.28.2020 10:10	
m,p-Xylenes	<0.00400	0.200	0.169	85	0.169	85	70-130	0	35	mg/kg	07.28.2020 10:10	
o-Xylene	<0.00200	0.100	0.0837	84	0.0844	84	70-130	1	35	mg/kg	07.28.2020 10:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		99		100		70-130	%	07.28.2020 10:10
4-Bromofluorobenzene	97		95		94		70-130	%	07.28.2020 10:10

Analytical Method: BTEX by EPA 8021B

Seq Number: 3132827

Parent Sample Id: 668271-006

Matrix: Soil

MS Sample Id: 668271-006 S

Prep Method: SW5035A

Date Prep: 07.27.2020

MSD Sample Id: 668271-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.104	104	0.113	113	70-130	8	35	mg/kg	07.28.2020 10:51	
Toluene	<0.00200	0.0998	0.0959	96	0.102	102	70-130	6	35	mg/kg	07.28.2020 10:51	
Ethylbenzene	<0.00200	0.0998	0.0945	95	0.0996	100	70-130	5	35	mg/kg	07.28.2020 10:51	
m,p-Xylenes	<0.00399	0.200	0.180	90	0.193	97	70-130	7	35	mg/kg	07.28.2020 10:51	
o-Xylene	<0.00200	0.0998	0.0877	88	0.0939	94	70-130	7	35	mg/kg	07.28.2020 10:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		103		70-130	%	07.28.2020 10:51
4-Bromofluorobenzene	100		102		70-130	%	07.28.2020 10:51

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

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

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

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

Final 1.000

Inter-Office Shipment

IOS Number : **67754**

Date/Time: 07.27.2020

Created by: Michael J Turner

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.: 771104404257

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
668301-001	S	EW-1.1	07.24.2020 11:00	SW8015MOD_NM	TPH by SW8015 Mod	07.29.2020	08.07.2020	JKR	PHCC10C28 PHCC28C3	
668301-001	S	EW-1.1	07.24.2020 11:00	SW8021B	BTEX by EPA 8021B	07.29.2020	08.07.2020	JKR	BR4FBZ BZ BZME EBZ	
668301-001	S	EW-1.1	07.24.2020 11:00	E300_CL	Chloride by EPA 300	07.29.2020	08.21.2020	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:



Michael J Turner

Date Relinquished: 07.27.2020

Received By:



Brianna Teel

Date Received: 07.28.2020

Cooler Temperature: 0.4



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 67754

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-8

Sent By: Michael J Turner

Date Sent: 07.27.2020 04.54 PM

Received By: Brianna Teel

Date Received: 07.28.2020 10.15 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 07.28.2020

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 07.27.2020 04.36.00 PM

Work Order #: 668301

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

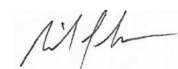
Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-1.1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes Xenco Midland
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Michael J Turner

Date: 07.27.2020

Checklist reviewed by:



Jessica Kramer

Date: 07.28.2020

Certificate of Analysis Summary 671101

Terracon-Lubbock, Lubbock, TX

Project Name: Morris Boyd 1H Battery

Project Id: AR197312
 Contact: Bryant McBrayer
 Project Location:

Date Received in Lab: Wed 08.26.2020 15:26
 Report Date: 08.28.2020 15:38
 Project Manager: Jessica Kramer

Analysis Requested	Lab Id: 671101-001 Field Id: EF-3-(4-4.5) Depth: 4-5 ft Matrix: SOIL Sampled: 08.25.2020 13:00					
BTEX by EPA 8021B SUB: T104704400-20-21	Extracted: 08.27.2020 16:45 Analyzed: 08.28.2020 00:42 Units/RL: mg/kg RL					
Benzene	<0.00201 0.00201					
Toluene	<0.00201 0.00201					
Ethylbenzene	<0.00201 0.00201					
m,p-Xylenes	<0.00402 0.00402					
o-Xylene	<0.00201 0.00201					
Xylenes, Total	<0.00201 0.00201					
Total BTEX	<0.00201 0.00201					
Chloride by EPA 300 SUB: T104704400-20-21	Extracted: 08.27.2020 15:00 Analyzed: 08.27.2020 16:47 Units/RL: mg/kg RL					
Chloride	45.2 5.00					
TPH by SW8015 Mod SUB: T104704400-20-21	Extracted: 08.27.2020 17:00 Analyzed: 08.28.2020 08:48 Units/RL: mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<49.9 49.9					
Diesel Range Organics (DRO)	<49.9 49.9					
Motor Oil Range Hydrocarbons (MRO)	<49.9 49.9					
Total TPH	<49.9 49.9					

BRL - Below Reporting Limit

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



Analytical Report 671101

for

Terracon-Lubbock

Project Manager: Bryant McBrayer

Morris Boyd 1H Battery

AR197312

08.28.2020

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-37), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



08.28.2020

Project Manager: **Bryant McBrayer**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: Eurofins Xenco, LLC Report No(s): **671101**

Morris Boyd 1H Battery

Project Address:

Bryant McBrayer:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 671101. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 671101 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 671101

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
EF-3-(4-4.5)	S	08.25.2020 13:00	4 - 5 ft	671101-001



CASE NARRATIVE

Client Name: Terracon-Lubbock

Project Name: Morris Boyd 1H Battery

Project ID: AR197312
Work Order Number(s): 671101

Report Date: 08.28.2020
Date Received: 08.26.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 671101

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: EF-3-(4-4.5)

Matrix: Soil

Date Received: 08.26.2020 15:26

Lab Sample Id: 671101-001

Date Collected: 08.25.2020 13:00

Sample Depth: 4 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 08.27.2020 15:00

Basis: Wet Weight

Seq Number: 3135772

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.2	5.00	mg/kg	08.27.2020 16:47		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 08.27.2020 17:00

Basis: Wet Weight

Seq Number: 3135833

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.28.2020 08:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.28.2020 08:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.28.2020 08:48	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.28.2020 08:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	08.28.2020 08:48	
o-Terphenyl	84-15-1	113	%	70-130	08.28.2020 08:48	



Certificate of Analytical Results 671101

Terracon-Lubbock, Lubbock, TX

Morris Boyd 1H Battery

Sample Id: EF-3-(4-4.5)

Matrix: Soil

Date Received: 08.26.2020 15:26

Lab Sample Id: 671101-001

Date Collected: 08.25.2020 13:00

Sample Depth: 4 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 08.27.2020 16:45

Basis: Wet Weight

Seq Number: 3135780

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.28.2020 00:42	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.28.2020 00:42	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.28.2020 00:42	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.28.2020 00:42	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.28.2020 00:42	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	08.28.2020 00:42	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.28.2020 00:42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.28.2020 00:42		
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.28.2020 00:42		

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



Terracon-Lubbock

Morris Boyd 1H Battery

Analytical Method: Chloride by EPA 300

Seq Number: 3135772

MB Sample Id: 7710305-1-BLK

Matrix: Solid

LCS Sample Id: 7710305-1-BKS

Prep Method: E300P

Date Prep: 08.27.2020

LCSD Sample Id: 7710305-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	251	100	249	100	90-110	1	20	mg/kg	08.27.2020 15:57	

Analytical Method: Chloride by EPA 300

Seq Number: 3135772

Parent Sample Id: 671097-001

Matrix: Soil

MS Sample Id: 671097-001 S

Prep Method: E300P

Date Prep: 08.27.2020

MSD Sample Id: 671097-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	489	248	724	95	724	95	90-110	0	20	mg/kg	08.27.2020 16:16	

Analytical Method: Chloride by EPA 300

Seq Number: 3135772

Parent Sample Id: 671138-002

Matrix: Soil

MS Sample Id: 671138-002 S

Prep Method: E300P

Date Prep: 08.27.2020

MSD Sample Id: 671138-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	327	252	577	99	579	100	90-110	0	20	mg/kg	08.27.2020 17:44	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3135833

MB Sample Id: 7710336-1-BLK

Matrix: Solid

LCS Sample Id: 7710336-1-BKS

Prep Method: SW8015P

Date Prep: 08.27.2020

LCSD Sample Id: 7710336-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1190	119	1070	107	70-130	11	20	mg/kg	08.28.2020 05:50	
Diesel Range Organics (DRO)	<50.0	1000	1180	118	1160	116	70-130	2	20	mg/kg	08.28.2020 05:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		127		114		70-130	%	08.28.2020 05:50
o-Terphenyl	111		128		118		70-130	%	08.28.2020 05:50

Analytical Method: TPH by SW8015 Mod

Seq Number: 3135833

Matrix: Solid

MB Sample Id: 7710336-1-BLK

Prep Method: SW8015P

Date Prep: 08.27.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	08.28.2020 09:28	

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

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

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

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



Terracon-Lubbock

Morris Boyd 1H Battery

Analytical Method: TPH by SW8015 Mod

Seq Number: 3135833

Parent Sample Id: 670839-001

Matrix: Soil

MS Sample Id: 670839-001 S

Prep Method: SW8015P

Date Prep: 08.27.2020

MSD Sample Id: 670839-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	979	98	992	100	70-130	1	20	mg/kg	08.28.2020 06:49	
Diesel Range Organics (DRO)	<49.9	997	1060	106	1070	107	70-130	1	20	mg/kg	08.28.2020 06:49	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		114		70-130	%	08.28.2020 06:49
o-Terphenyl	117		117		70-130	%	08.28.2020 06:49

Analytical Method: BTEX by EPA 8021B

Seq Number: 3135780

MB Sample Id: 7710343-1-BLK

Matrix: Solid

LCS Sample Id: 7710343-1-BKS

Prep Method: SW5035A

Date Prep: 08.27.2020

LCSD Sample Id: 7710343-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0920	92	0.0929	93	70-130	1	35	mg/kg	08.27.2020 08:57	
Toluene	<0.00200	0.100	0.0868	87	0.0904	90	70-130	4	35	mg/kg	08.27.2020 08:57	
Ethylbenzene	<0.00200	0.100	0.0932	93	0.0972	97	70-130	4	35	mg/kg	08.27.2020 08:57	
m,p-Xylenes	<0.00400	0.200	0.192	96	0.202	101	70-130	5	35	mg/kg	08.27.2020 08:57	
o-Xylene	<0.00200	0.100	0.0933	93	0.100	100	70-130	7	35	mg/kg	08.27.2020 08:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		97		70-130	%	08.27.2020 08:57
4-Bromofluorobenzene	96		112		116		70-130	%	08.27.2020 08:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3135780

Parent Sample Id: 671085-001

Matrix: Soil

MS Sample Id: 671085-001 S

Prep Method: SW5035A

Date Prep: 08.27.2020

MSD Sample Id: 671085-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0607	61	0.0594	60	70-130	2	35	mg/kg	08.27.2020 21:39	X
Toluene	<0.00198	0.0992	0.0580	58	0.0579	58	70-130	0	35	mg/kg	08.27.2020 21:39	X
Ethylbenzene	<0.00198	0.0992	0.0600	60	0.0608	61	70-130	1	35	mg/kg	08.27.2020 21:39	X
m,p-Xylenes	<0.00397	0.198	0.121	61	0.125	63	70-130	3	35	mg/kg	08.27.2020 21:39	X
o-Xylene	<0.00198	0.0992	0.0618	62	0.0641	64	70-130	4	35	mg/kg	08.27.2020 21:39	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		70-130	%	08.27.2020 21:39
4-Bromofluorobenzene	114		118		70-130	%	08.27.2020 21:39

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

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

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

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

[illegible]

Inter-Office Shipment

IOS Number : **69470**

Date/Time: 08.26.2020

Created by: Randall Lee

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.: 771369679724

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
671101-001	S	EF-3-(4-4.5)	08.25.2020 13:00	SW8015MOD_NM	TPH by SW8015 Mod	08.28.2020	09.08.2020	JKR	PHCC10C28 PHCC28C3	
671101-001	S	EF-3-(4-4.5)	08.25.2020 13:00	SW8021B	BTEX by EPA 8021B	08.28.2020	09.08.2020	JKR	BR4FBZ BZ BZME EBZ	
671101-001	S	EF-3-(4-4.5)	08.25.2020 13:00	E300_CL	Chloride by EPA 300	08.28.2020	09.22.2020	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:



Randall Lee

Date Relinquished: 08.26.2020

Received By:



Brianna Teel

Date Received: 08.27.2020

Cooler Temperature: 0.5



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 69470

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-8

Sent By: Randall Lee

Date Sent: 08.26.2020 04.22 PM

Received By: Brianna Teel

Date Received: 08.27.2020 10.46 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 08.27.2020

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 08.26.2020 03.26.00 PM

Work Order #: 671101

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-5.8
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes All tests sent to Xenco Midland
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Teddy Randall Lee
Randall Lee

Date: 08.26.2020

Checklist reviewed by: Jessica Kramer
Jessica Kramer

Date: 08.28.2020

APPENDIX D – TERRACON STANDARD OF CARE, LIMITATION, AND RELIANCE

Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed with you, Spur Energy Partners LLC, as reflected in our proposal.

Additional Scope Limitations

The development of this Closure Report is based upon information provided by the Client and Terracon's remediation and construction services line. Such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable, or not present during these services. We cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those by information provided by the Client. The data, interpretations, findings, and recommendations are based solely upon reformation executed within the scope of these services.

Reliance

This report has been prepared for the exclusive use of Spur Energy Partners LLC, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of Spur Energy Partners LLC and Terracon. Any unauthorized distribution or reuse is at Spur Energy Partners LLC sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal and Spur Energy Partners and Terracon's Master Services Agreement. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to Spur Water Midstream and all relying parties unless otherwise agreed in writing.

District I

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

District II

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

District III

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

District IV

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

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

CONDITIONS

Action 28213

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 28213
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2111150780 MORRIS BOYD 1H BATTERY, thank you. This closure is approved. For future reference, a remediation plan is required to be submitted within 90 days of release date. A closer report is required to be submitted 90 days after the remediation plan has been approved.	7/21/2021