

State of New Mexico
Oil Conservation Division

Incident ID	NRM2013952120
District RP	
Facility ID	
Application ID	

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

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Braidy Moulder Title: EHS Manager
 Signature: Braidy Moulder Date: 10/5/2021
 email: bmoulder@spurep11c.com Telephone: 713-264-2517

OCD Only

Received by: Chad Hensley Date: 10/05/2021

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: Chad Hensley Date: 10/05/2021
 Printed Name: Chad Hensley Title: Environmental Specialist Advanced

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

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Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.808584 Longitude -104.109127
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Western Federal 001	Site Type: Well
Date Release Discovered: May 1, 2020	API# 30-015-30032

Unit Letter	Section	Township	Range	County
H	30	17S	29E	Eddy

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 0.25	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Leak on the Western Fed 3 flowline, just before it comes into the Western Federal Battery. Hole in bottom of a steel 2.875 flowline, ¼ bbl spill.

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Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: _____	Title: _____
Signature: _____	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	
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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>131</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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

Characterization Report Checklist: *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

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

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Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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Remediation Plan

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

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

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

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

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Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

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Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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: _____

Closure Report

General Site Information:

Western Federal #3 Release
NMOCD Ref NO. NRM2013952120

Site Contact:

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

Depth to Ground Water

51-100 feet below grade surface

Distance to Nearest Surface Water

Flat Lake (North Central Eddy County), approximately 8.72 miles to the North

Driving Directions

From the intersection of Hwy 82, and Hwy 210 (S Old Loco Rd) travel west on Hwy 82 for 0.88 miles and then turn south onto the lease road, continue south for 0.15 miles and then turn east, traveling for 0.27 miles, then turn north, traveling for 0.08 miles to the site.

Legal Description

Unit H Section 30, T17S, R29E, Eddy County, New Mexico

Prepared for:

Spur Energy Partners
Houston, Texas

Prepared by:

Terracon Consultants, Inc.
Lubbock, Texas
TBPG Firm No. 50058

Offices Nationwide
Employee-Owned

Established in 1965
terracon.com

Terracon

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

August 16, 2021



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

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

RE: **Closure Report**
Western Federal #3 Release
Unit H Section 30, T17S, R29E, Eddy County, New Mexico
Terracon Project No. AR207082

Dear Mr. Mucha,

Terracon Consultants, Inc. (Terracon) is pleased to submit our Closure Report for the site referenced above. The Closure Report was developed in accordance with the New Mexico Oil Conservation Division (NMOCD) regulations concerning clean-up actions required for releases of crude oil and produced water. The Closure Report presents a description of the release incident and NMOCD notification, site characteristics, potential receptors, and remedial actions required for the site. Terracon developed the Closure Report in general accordance with our Master Service Agreement dated April 29, 2019.

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

Sincerely,
Terracon Consultants, Inc.

A handwritten signature in blue ink, appearing to read "Bryant McBrayer".

Bryant McBrayer
Staff Scientist
Lubbock

A handwritten signature in blue ink, appearing to read "Erin Loyd".

Erin Loyd, P.G.
Principal
Office Manager – Lubbock



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Closure Report
Western Federal #3 Release
Unit H Section 30, Township 17 South, Range 29 East
Eddy County, New Mexico
NMOCD Reference No. NRM2013952120
Terracon Project No. AR207082
August 16, 2021

1.0 SITE DESCRIPTION

The Site is an approximate 110 sq. ft portion off of an oil pad within the Unit H Section 30, Township 17 South, Range 29 East, Eddy County, New Mexico (hereinafter, the Site). The Site consists primarily of undeveloped land just south of the tank battery. A Topographic Map illustrating the Site location is included in Figure 1 and a Site Map is included as Figure 2 in Appendix A.

2.0 SCOPE OF SERVICES

Terracon's scope of services was to investigate the magnitude and extent of the documented release, remediation, and restoration and develop a Closure Report in accordance with the NMOCD requirements that detail site closure activities to be completed. This Closure Report addresses the May 1, 2020 release of approximately 0.25 barrels (bbls) produced from the compromise of the flowline owned by Spur Energy Partners.

3.0 INTRODUCTION AND NOTIFICATION

A release of produced water occurred on May 1, 2020, at the Western Federal 3 well site in Eddy County, New Mexico. The Site is operated by Spur Energy Partners. The Site is comprised of an approximate 110 square ft. undeveloped area, approximately 7.58 miles west of Loco Hills, New Mexico. Incident information is provided in the following table:

Required Information	Site and Release information		
Responsible party	The facility is operated by Spur Energy Partners LLC		
Local contact	<table> <tr> <td>Contact: Mr. Todd Mucha</td><td>P: (281) 795-2286 E: todd@spurepllc.com</td></tr> </table>	Contact: Mr. Todd Mucha	P: (281) 795-2286 E: todd@spurepllc.com
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 May 1, 2020.		
Facility description	The facility is Western Federal 3 in Eddy County, New Mexico. It is an approximate 110 sq. ft. release site, located within the Unit H Section 30, Township 17 South, Range 29 East approximately		

Responsive ■ Resourceful ■ Reliable

Release Investigation and Remedial Action Plan

Western Federal #3 ■ Eddy County, New Mexico

August 16, 2021 ■ Terracon Project No. AR207082



Required Information	Site and Release information	
	7.58 miles west of Loco Hills, New Mexico. The Site is undeveloped land immediately south and west of a tank battery.	
Time of incident	May 1, 2020, at approximately 1:30 pm.	
Discharge event	Release of produced water originating from a hole in the bottom of a steel 2.875-inch flowline. The release area was comprised of approximately 110 sq. ft; the entirety of the release occurred off the pad. The release location is illustrated in Figure 2 of Appendix A	
Type of discharge	The documented fluids release occurred at the surface and did not impact soil below a depth of two feet.	
Quantity of spilled material	Total Fluids: 0.25bbls	Produced Water: 0.25 bbls
Site characteristics	Relatively flat with drainage following the native ground surface; very gently sloping to the southwest.	
Immediate corrective actions	The Lease Operator jointed and sealed the leak in the pipe, and 0 bbls were recovered. Terracon Remediation Construction Services (RCS) excavated and stockpiled affected materials proximate to the release origin for characterization.	

4.0 INITIAL RESPONSE ACTIONS

4.1 Source Elimination and Site Security

Initial source elimination was accomplished by the Spur foreman sealing the leak in the pipe. Terracon's RCS team secured the Site and performed containment and site stabilization activities.

4.2 Containment and Site Stabilization

RCS consolidated and stockpiled affected soils proximate to the release origin, comprising an area measuring approximately 110-square-feet (sq. ft). From this area, the affected materials stockpile totaled an estimated 16-cubic yards (cy). Following consolidation, RCS stockpiled the excavated materials on the facility pad to deter inadvertent contact with off-pad vegetation and wildlife.

Release Investigation and Remedial Action Plan
Western Federal #3 ■ Eddy County, New Mexico
August 16, 2021 ■ Terracon Project No. AR207082



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 one registered well (RA-11807-POD1) located 2.56 miles from the Site. The depth to groundwater at the Site is anticipated to be between 51 and 100 feet below grade surface (bgs). NMOSE website identified no registered wells within one mile of the Site.

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

Flat Lake (North-Central Eddy County, NM) is approximately 8.72 miles to the north of the Site and is the closest surface water to the Site.

5.4 Soil / Waste Characteristics

Soils at the Site are classified as Berino soil and Duneland, 0 to 3 percent slopes. This soil has a surface layer of loamy fine sand 0 to 12 inches, and sandy clay loam 12 to 58 inches, and clay loam 58 to 60 inches. The formation is categorized as well-drained with low runoff.

5.5 Groundwater Quality

Groundwater quality is unknown at the Site. As stated previously, there are no wells registered with the NMOSE website within 0.5 miles of the site.

5.6 Karst Characteristics

Terracon evaluated data from the NMOCD Public file SharePoint site for Karst map designations about the Site location. The Site appears to be within a mid-level Karst risk area. Based on on-site observations within the extent of the release margins, the potential for Karst formations in this area is "low to medium". The Site has a layer of solid competent rock at 60 inches bgs. The full extent of release quantities and excavation activities were not advanced to depths greater than 24 inches bgs.

Release Investigation and Remedial Action Plan

Western Federal #3 ■ Eddy County, New Mexico

August 16, 2021 ■ Terracon Project No. AR207082



6.0 SOIL REMEDIAL 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 applicability of these guidance documents to the site-specific characteristics associated with the Western Federal #001.

6.1 Reclamation Levels (Surface to 4 ft. bgs)

The below Reclamation Limits for chlorides, TPH (GRO+DRO+MRO), BTEX (includes benzene, toluene, ethylbenzene and xylenes), and benzene are defined within 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.:

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

6.2 Remediation Levels (> 4 ft. bgs)

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:

Release Investigation and Remedial Action Plan

Western Federal #3 ■ Eddy County, New Mexico

August 16, 2021 ■ Terracon Project No. AR207082



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

Release Investigation and Remedial Action Plan

Western Federal #3 ■ Eddy County, New Mexico

August 16, 2021 ■ Terracon Project No. AR207082



Based on the site-specific characteristics, the applicable NMOCD remediation levels for Total BTEX, chloride, and TPH within soils, exclusive of the Reclamation Zone (surface to 4 ft. bgs), are as follows:

Constituent	Remediation Limit
Chloride	10,000 mg/kg
TPH (GRO+DRO+MRO)	2,500 mg/kg
TPH (GRO+DRO)	1,000 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 to maintain a shipping temperature of 32 degrees Fahrenheit (*F).
- Promptly ship the samples 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.

Release Investigation and Remedial Action Plan

Western Federal #3 ■ Eddy County, New Mexico

August 16, 2021 ■ Terracon Project No. AR207082

**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 used for the analysis of soil samples 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

8.0 RELEASE INVESTIGATION DATA EVALUATION

During Terracon's May 14, 2020 release investigation activities, a total of three soil samples were collected from the Site and analyzed for BTEX, chloride, and/or TPH. All samples were collected from within the release margins.

During Terracon's June 02, 2021 supplemental investigation activities, a total of 6 soil samples were collected from the perimeter of the Site and analyzed for BTEX, chloride, and/or TPH. All samples were collected from outside the release margins.

Constituent concentrations qualified with J-flag (J) indicate the constituent was detected at a concentration above the laboratory sample detection limit (SDL), but below the laboratory method quantitation limit (MQL). Constituent concentrations qualified with a J-flag are considered estimated values.

8.1 Background Data Evaluation

A total of six discrete soil samples were collected from two background locations in up-gradient positions relative to the release extent. None of the six samples were analyzed for the presence of BTEX and TPH. The six analyzed samples did not exhibit concentrations of BTEX or TPH constituents above applicable laboratory SDLs, as summarized in Table 2.

Each of the six background samples collected were analyzed for the presence of chloride. The detected chloride concentrations ranged from 7.33 mg/kg in soil sample BG-1 (surface to 0.5 ft bgs) to 16.2 mg/kg in soil sample BG-1 (3.5 ft bgs to 4 ft bgs), as summarized in Table 2.

Based on the review of the analytical results of the background soil samples, the detected constituent concentrations did not exceed NMOCD Action Levels based on the criteria ranking parameters and applicability by depth. Based on this comparison, NMOCD Action Levels will continue to be utilized as the applicable RALs for the site.

Release Investigation and Remedial Action Plan

Western Federal #3 ■ Eddy County, New Mexico

August 16, 2021 ■ Terracon Project No. AR207082

**8.2 Release Margins Data Evaluation**

Benzene was detected above the laboratory sample detection limits (SDLs) in three of the three soil samples analyzed within the release margins. The total Benzene concentration ranged from 0.0451 mg/kg in HA-1 (4.5 ft bgs to 5 ft bgs) to 2.06 mg/kg in HA-1 (1.5 ft bgs to 2 ft bgs). The laboratory SDLs benzene concentrations 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 each of the soil samples analyzed within the release margins. The Total BTEX concentration ranged from 0.169 mg/kg in HA-1 (4.5 to 5 ft bgs) to 5.42 mg/kg in HA-1 (1.5 to 2 ft bgs). The detected Total BTEX concentrations did not exceed the applicable NMOCD RAL for Total BTEX of 50 mg/kg, as summarized in Table 2.

Total TPH was detected above applicable laboratory SDLs in two of the three soil samples analyzed within the release margins. The Total TPH concentration ranged from <9.95 mg/kg in HA- (4.5 to 5 ft bgs) to 29.7 (J) mg/kg in HA-1 (surface to 0.5 ft bgs). The samples collected within the release margins did not exhibit Total TPH concentrations above the NMOCD RAL of 100 mg/kg for Total TPH, as summarized in Table 2.

Chloride was detected above applicable laboratory SDLs in each of the soil samples analyzed within the release margins. The chloride concentrations ranged from 5,790 mg/kg in soil sample HA-1 (surface to 0.5 ft bgs) to 12,900 mg/kg in soil sample HA-1 (1.5 to 2 ft bgs). The samples analyzed within the release margins did exhibit chloride concentrations above the applicable NMOCD RAL for chloride of 600 mg/kg, as summarized in Table 2.

8.3 Release Investigation Data Summary

Based on the review of the above release investigation analytical results, the areas within the release margins exhibited exceedances of chloride concentrations. Terracon performed remedial response actions at the Site, to achieve NMOCD remediation and reclamation standards, and to mitigate any visible surface impacts.

8.4 Confirmation Margins Data Evaluation

Terracon's confirmation sampling on August 23, 2020, and supplemental sampling on June 2, 2021; was conducted following the remediation activities detailed in Section 9. A total of nine soil samples were collected, post reclamation activities. In total, three soil composite samples were collected from the base and walls of the open excavation and analyzed for BTEX, chloride, and TPH.

Release Investigation and Remedial Action Plan

Western Federal #3 ■ Eddy County, New Mexico

August 16, 2021 ■ Terracon Project No. AR207082

**8.3.1 Confirmation Assessment Data Evaluation**

Benzene and total BTEX constituents were not detected above the applicable laboratory SDL in the confirmation soil samples, as summarized in Table 2.

Total TPH was detected above applicable laboratory SDLs in one of the 9 soil samples analyzed within the remediated margins. The Total TPH concentration was 83.9 mg/kg in W-(1.5-2) (1.5 to 2 ft bgs). The samples collected within the release margins did not exhibit Total TPH concentrations above the NMOCD RAL of 100 mg/kg for Total TPH, as summarized in Table 2.

Chloride was detected above applicable laboratory SDLs in each of the nine soil samples analyzed within the remediated margins. The chloride concentrations ranged from 7.33 mg/kg in soil sample BG-1 (surface to 0.5 ft bgs) to 423 mg/kg in soil sample in F-(3.5-4) (3.5 to 4 ft bgs). The samples analyzed within the release margins did not exhibit chloride concentrations above the applicable NMOCD RAL for chloride 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 within and surrounding the remediation do not exhibit concentrations above the NMOCD RAL for benzene, Total BTEX, chloride, and Total TPH. Terracon requests that the NMOCD close this incident.

9.0 SOIL REMEDIATION

Impacted soil was removed to 4 ft bgs and replaced with fresh non-contaminated soil in accordance with the criteria described below, which will remove contaminants to protect freshwaters, public health, and the environment.

9.1 Contaminated Soils

Soils exceeding the designated NMOCD RALs described in Section 6 were remediated as follows:

- Highly impacted soils within the release margins, illustrated in Figure 2 of Appendix A, were excavated either to a maximum depth of 4 feet bgs, or upon refusal due to encountering a restrictive barrier, or field evidence demonstrated that impacted materials had been sufficiently mitigated, whichever occurred first.
- Following excavation, vertical and horizontal delineation samples were collected from the base and walls of the excavation to confirm the remaining levels of soil contaminants were below the desired NMOCD RALs.

9.2 Soil Management

Release Investigation and Remedial Action Plan

Western Federal #3 ■ Eddy County, New Mexico

August 16, 2021 ■ Terracon Project No. AR207082



The selected method of soil management was the replacement of impacted soil on-site with fresh non-contaminated soil. Excavated soils were stockpiled on a 20-mil liner and transported to the nearby Lea Land waste disposal site in Lea County, New Mexico.

10.0 TERMINATION OF REMEDIAL ACTIONS, FINAL CLOSURE AND REPORTING

10.1 Termination of Remedial Action

Remedial action of soils at the Site was terminated when the NMOCD remediation criteria were met. Contaminated soils were removed from the Site and replaced with fresh, non-contaminated backfill material. Residual contaminant concentrations are below the soil remediation action levels, as previously discussed.

10.2 Final Closure

Upon termination of remedial actions (Sections 6 and 9), the area of the release was closed by backfilling the excavated area with clean soil, and contouring to match the surrounding topography.

10.3 Final Report

Upon completion of remedial activities, this final report, which summarizes the actions taken to mitigate environmental impacts related to the release, has been provided to NMOCD for review and approval.

APPENDIX A – FIGURES AND TABLES

Figure 1 – Topographic Map

Figure 2 – Site Map

Figure 3 – Contamination Concentration Map

Figure 4 – Remediation Concentration Map

Figure 5 – NMOSE POD Location Map


Figure 6 – Karst Map

Table 2 – Soil Sample Analytical Results




Project No.	AR207082	Figure 1 – Topographical Map	
Scale:	As Shown	Western Federal 3	
Source:	Google Earth	32. 808584°, -104.109127°	
Image Date:	01/24/2017	Eddy County, New Mexico	
<div><div>Terracon</div><div>Consulting Engineers & Scientists</div><div>5827 50th St. Suite 1 PH. (806) 300-0104</div><div>Lubbock, Texas 79424 FAX. (806) 797 0947</div></div>			



Project No.	AR207082	 <div>5827 50th St. Suite 1 PH. (806) 300-0104</div> <div>Lubbock, Texas 79424 FAX. (806) 797 0947</div>	Figure 2 – Site Map	
Scale:	As Shown		Western Federal 3	
Source:	Google Earth		32.808584°, -104.109127°	
Image Date:	12/21/2019		Eddy County, New Mexico	




Project No.	AR207082	Figure 3 – Contamination Concentration Map Western Federal 3 32. 808584°, -104.109127° Eddy County, New Mexico	
Scale:	As Shown		
Source:	Google Earth		
Image Date:	12/21/2019		
 5827 50 th St. Suite 1 PH. (806) 300-0104 Lubbock, Texas 79424 FAX. (806) 797 0947			



Project No.	AR207082	Figure 4– Remediation Concentration Map	
Scale:	As Shown	Western Federal 3	
Source:	Google Earth	32. 808584°, -104.109127°	
Image Date:	12/21/2019	Eddy County, New Mexico	
<div><div>Terracon</div><div>Consulting Engineers & Scientists</div><div>5827 50th St. Suite 1 PH. (806) 300-0104</div><div>Lubbock, Texas 79424 FAX. (806) 797 0947</div></div>			



 Site Location

 Potable Water Well
RA-11807-POD1

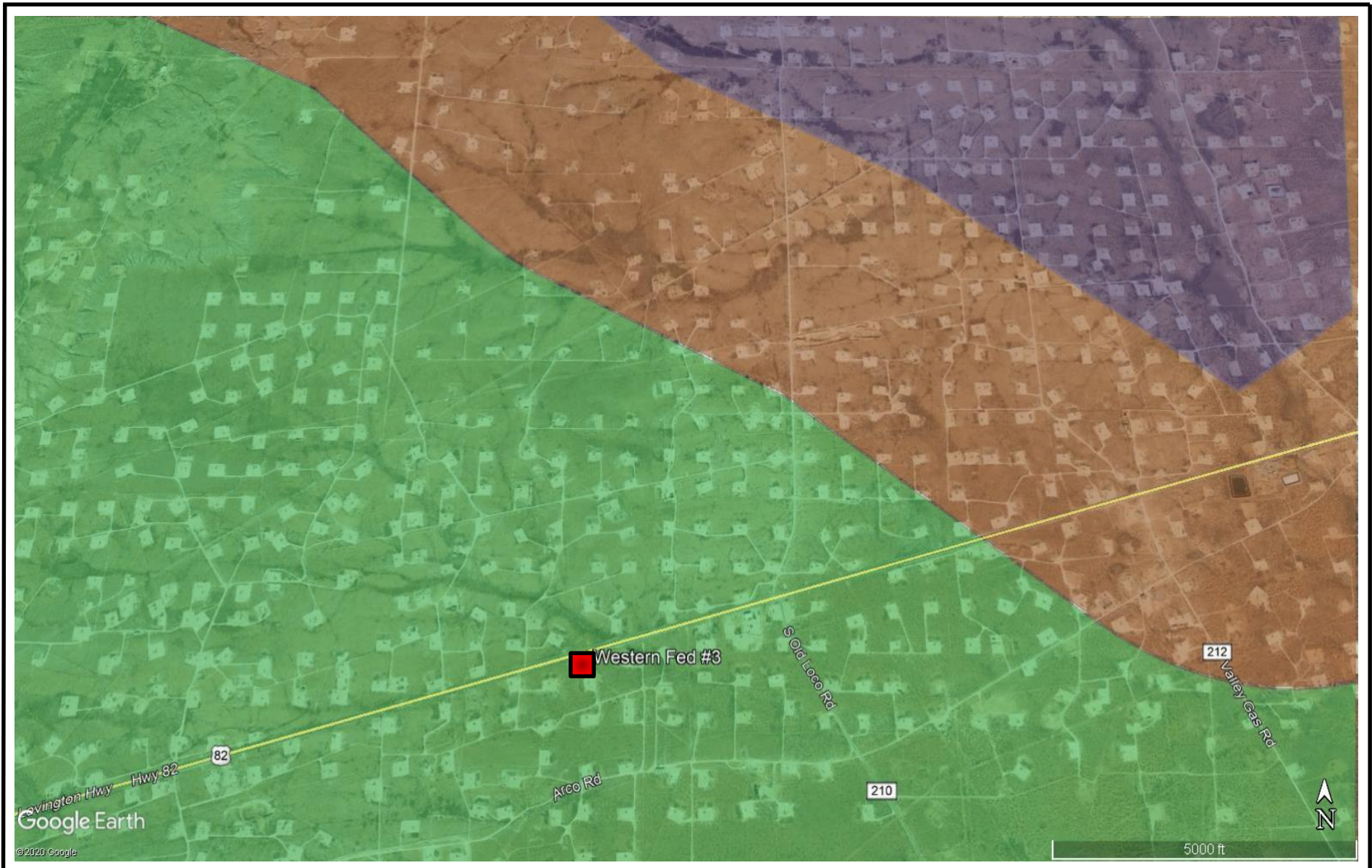


Project No.	AR207082
Scale:	1" = 3.5 mi
Source:	Google Earth
Date:	2020

Terracon
Consulting Engineers & Scientists
5847 50th Street Lubbock, Texas 79424
PH: (806) 300 - 0140 FAX: (806) 797 - 0947

Figure 5 - NMOSE POD Location Map

Western Federal 3 Flow Line
32.808584, -104.109127
Eddy County, New Mexico



- Site Location
- High/Med Karst Potential
- Med/Low Karst Potential
- Low/No Karst Potential



Project No.	AR207082
Scale:	1" = 2,000 ft
Source:	Google Earth
Date:	2020

Terracon
Consulting Engineers & Scientists

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

Figure 6 - Karst Map
Western Federal 3 Flow Line
32.808584, -104.109127
Eddy County, New Mexico

APPENDIX B – PHOTOGRAPHIC LOG

Western Federal Tank Battery ■ Eddy County, New Mexico
December 2, 2020 ■ Terracon Project No. AR207082

Terracon

PHOTO 1: View of well pad and tank battery identifier. 5/14/2020



PHOTO 2: View of impacted area south of tank battery, facing west. 5/14/2020

Responsive ■ Resourceful ■ Reliable

Western Federal Tank Battery ■ Eddy County, New Mexico
December 2, 2020 ■ Terracon Project No. AR207082

Terracon



PHOTO 3: View of impacted area and sample location south of tank battery, facing north. 5/14/2020



PHOTO 4: View of impacted area around holding tanks, facing northwest. 5/14/2020

Responsive ■ Resourceful ■ Reliable

Western Federal Tank Battery ■ Eddy County, New Mexico
December 2, 2020 ■ Terracon Project No. AR207082

Terracon



PHOTO 5: View of remediated and backfilled area, facing north. 8/24/2020



PHOTO 6: View of remediated and backfilled area, facing east. 8/24/2020

Responsive ■ Resourceful ■ Reliable

Western Federal Tank Battery ■ Eddy County, New Mexico
December 2, 2020 ■ Terracon Project No. AR207082

Terracon



PHOTO 7: View of the remediated and backfilled area, facing east. 8/24/2020

Responsive ■ Resourceful ■ Reliable

APPENDIX C – ANALYTICAL REPORT AND CHAIN OF CUSTODY

TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX ¹ , Chloride ² , and TPH ³ Western Federal 3 Terracon Project No. AR207082									
Sample I.D.	Sample Depth (bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	ORO	TOTAL
Release Investigation Samples									
HA-1	0 - 0.5'	Grab	05/14/20	Benzene - 0.779 Toluene - 0.784 Ethylbenzene - 0.227 Total Xylenes - 0.308 Total BTEX - 2.1	5,790	19.3 J	10.4 J	<9.92	29.7 J
	1.5 - 2'	Grab	05/14/20	Benzene - 2.06 Toluene - 2.09 Ethylbenzene - 0.553 Total Xylenes - 0.715 Total BTEX - 5.42	12,900	21.5 J	<9.98	<9.98	21.5 J
	4.5-5'	Grab	05/14/20	Benzene - 0.0451 Toluene - 0.0608 Ethylbenzene - 0.0294 Total Xylenes - 0.0333 Total BTEX - 0.169	9,810	<9.95	<9.95	<9.95	<9.95
Remediation Confirmation Samples									
F- (3.5-4)	3.5-4'	Composite	08/23/20	Benzene - <0.00199 Toluene - <0.00199 Ethylbenzene - <0.00199 Total Xylenes - <0.00199 Total BTEX - <0.00199	423	<50.0	<50.0	<50.0	<50.0
W- (1.5-2)	1.5-2'	Composite	08/23/20	Benzene - <0.00198 Toluene - <0.00198 Ethylbenzene - <0.00198 Total Xylenes - <0.00198 Total BTEX - <0.00198	150	<49.9	83.9	<49.9	83.9
WW- (1.5-2)	1.5-2'	Composite	06/02/21	Benzene - <0.00202 Toluene - <0.00202 Ethylbenzene - <0.00202 Total Xylenes - <0.00403 Total BTEX - <0.00403	196	<49.8	<49.8	<49.8	<49.8
Background Confirmation Samples									
BG-1	0 - 0.5'	Composite	06/02/21	Benzene - <0.00200 Toluene - <0.00200 Ethylbenzene - <0.00200 Total Xylenes - <0.00399 Total BTEX - <0.00399	7.33	<49.8	<49.8	<49.8	<49.8
	1.5 - 2'	Composite	06/02/21	Benzene - <0.00199 Toluene - <0.00199 Ethylbenzene - <0.00199 Total Xylenes - <0.00398 Total BTEX - <0.00398	9.82	<49.9	<49.9	<49.9	<49.9
	3.5-4'	Composite	06/02/21	Benzene - <0.00199 Toluene - <0.00199 Ethylbenzene - <0.00199 Total Xylenes - <0.00398 Total BTEX - <0.00398	16.2	<49.9	<49.9	<49.9	<49.9
BG-2	0 - 0.5'	Composite	06/02/21	Benzene - <0.00200 Toluene - <0.00200 Ethylbenzene - <0.00200 Total Xylenes - <0.00401 Total BTEX - <0.00401	8.85	<49.9	<49.9	<49.9	<49.9
	1.5 - 2'	Composite	06/02/21	Benzene - <0.00200 Toluene - <0.00200 Ethylbenzene - <0.00200 Total Xylenes - <0.00399 Total BTEX - <0.00399	9.72	<50.0	<50.0	<50.0	<50.0
	3.5-4'	Composite	06/02/21	Benzene - <0.00201 Toluene - <0.00201 Ethylbenzene - <0.00201 Total Xylenes - <0.00402 Total BTEX - <0.00402	9.61	<49.7	<49.7	<49.7	<49.7
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	10,000	1,000	N/A		2,500

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/ORO)

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

* = 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 = No Applicable reporting standards

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



Certificate of Analysis Summary 661942

Terracon-Lubbock, Lubbock, TX

Project Name: Tex Mack 118

Preliminary

Project Id: AR207082
 Contact: Joseph Guesnier
 Project Location: Client: Spur Energy Partners

Date Received in Lab: Mon 05.18.2020 14:10
 Report Date: 05.27.2020 13:43
 Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	661942-001	661942-003	661942-005			
	Field Id:	HA-1 (0-0.5)	HA-1 (1.5-2)	HA-1 (4.5-.5)			
	Depth:	0-0.5 ft	1.5-2 ft	4.5-5 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	05.14.2020 12:45	05.14.2020 12:55	05.14.2020 13:05			
BTEX by EPA 8021B	Extracted:	05.19.2020 12:00	05.19.2020 12:00	05.19.2020 12:00			
	Analyzed:	05.20.2020 12:30	05.20.2020 12:54	05.20.2020 13:18			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		0.779 0.0194	2.06 0.0197	0.0451 0.0196			
Toluene		0.784 0.0194	2.09 0.0197	0.0608 0.0196			
Ethylbenzene		0.227 0.0194	0.553 0.0197	0.0294 0.0196			
m,p-Xylenes		0.223 0.0388	0.514 0.0394	0.0333 J 0.0392			
o-Xylene		0.0854 0.0194	0.201 0.0197	<0.00669 0.0196			
Total Xylenes		0.308 0.0194	0.715 0.0197	0.0333 0.0196			
Total BTEX		2.10 0.0194	5.42 0.0197	0.169 0.0196			
Chloride by EPA 300 SUB: T104704215-19-30	Extracted:	05.21.2020 09:12	05.21.2020 09:12	05.21.2020 09:12			
	Analyzed:	05.21.2020 22:41	05.21.2020 22:58	05.21.2020 23:15			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		5790 98.4	12900 101	9810 101			
TPH GRO by EPA 8015 Mod.	Extracted:	05.19.2020 12:00	05.19.2020 12:00	05.19.2020 12:00			
	Analyzed:	05.20.2020 12:30	05.20.2020 12:54	05.20.2020 13:18			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
TPH-GRO		9.66 3.88	26.1 3.94	2.31 J 3.92			

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

John Builes
Project Manager



Analytical Report 661942

for

Terracon-Lubbock

Project Manager: Joseph Guesnier

Tex Mack 118

AR207082

05.27.2020

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-6)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



05.27.2020

Project Manager: **Joseph Guesnier**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: XENCO Report No(s): **661942**

Tex Mack 118

Project Address: Client: Spur Energy Partners

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) 661942. 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. 661942 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, appearing to read 'JB', is written over a light blue rectangular background.

John Builes
Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 661942****Terracon-Lubbock, Lubbock, TX**

Tex Mack 118

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HA-1 (0-0.5)	S	05.14.2020 12:45	0 - 0.5 ft	661942-001
HA-1 (1.5-2)	S	05.14.2020 12:55	1.5 - 2 ft	661942-003
HA-1 (4.5-.5)	S	05.14.2020 13:05	4.5 - 5 ft	661942-005
HA-1 (0.5-1)	S	05.14.2020 12:50	0.5 - 1 ft	Not Analyzed
HA-1 (3-3.5)	S	05.14.2020 13:00	3 - 3.5 ft	Not Analyzed

**CASE NARRATIVE***Client Name: Terracon-Lubbock**Project Name: Tex Mack 118*

Project ID: AR207082
Work Order Number(s): 661942

Report Date: 05.27.2020
Date Received: 05.18.2020

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:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3126759 TPH GRO by EPA 8015 Mod.

Surrogate 4-Bromofluorobenzene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7703670-1-BKS, 7703670-1-BSD.



Certificate of Analytical Results 661942

Terracon-Lubbock, Lubbock, TX

Tex Mack 118

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

Matrix: Soil

Date Received: 05.18.2020 14:10

Lab Sample Id: 661942-001

Date Collected: 05.14.2020 12:45

Sample Depth: 0 - 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 05.21.2020 09:12

Basis: Wet Weight

Seq Number: 3126693

SUB: T104704215-19-30

Preliminary

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5790	98.4	3.48	mg/kg	05.21.2020 22:41		10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 05.19.2020 12:00

Basis: Wet Weight

Seq Number: 3126757

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.779	0.0194	0.00878	mg/kg	05.20.2020 12:30		1
Toluene	108-88-3	0.784	0.0194	0.00454	mg/kg	05.20.2020 12:30		1
Ethylbenzene	100-41-4	0.227	0.0194	0.00598	mg/kg	05.20.2020 12:30		1
m,p-Xylenes	179601-23-1	0.223	0.0388	0.00662	mg/kg	05.20.2020 12:30		1
o-Xylene	95-47-6	0.0854	0.0194	0.00662	mg/kg	05.20.2020 12:30		1
Total Xylenes	1330-20-7	0.308	0.0194	0.00662	mg/kg	05.20.2020 12:30		1
Total BTEX		2.10	0.0194	0.00454	mg/kg	05.20.2020 12:30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	83	%	68-120	05.20.2020 12:30	
a,a,a-Trifluorotoluene	98-08-8	96	%	71-121	05.20.2020 12:30	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5035A

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 05.19.2020 12:00

Basis: Wet Weight

Seq Number: 3126759

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	9.66	3.88	0.263	mg/kg	05.20.2020 12:30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	76-123	05.20.2020 12:30	
a,a,a-Trifluorotoluene	98-08-8	96	%	69-120	05.20.2020 12:30	



Certificate of Analytical Results 661942

Terracon-Lubbock, Lubbock, TX

Tex Mack 118

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

Matrix: Soil

Date Received: 05.18.2020 14:10

Lab Sample Id: 661942-003

Date Collected: 05.14.2020 12:55

Sample Depth: 1.5 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 05.21.2020 09:12

Basis: Wet Weight

Seq Number: 3126693

SUB: T104704215-19-30

Preliminary

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12900	101	3.58	mg/kg	05.21.2020 22:58		10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 05.19.2020 12:00

Basis: Wet Weight

Seq Number: 3126757

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	2.06	0.0197	0.00890	mg/kg	05.20.2020 12:54		1
Toluene	108-88-3	2.09	0.0197	0.00461	mg/kg	05.20.2020 12:54		1
Ethylbenzene	100-41-4	0.553	0.0197	0.00606	mg/kg	05.20.2020 12:54		1
m,p-Xylenes	179601-23-1	0.514	0.0394	0.00671	mg/kg	05.20.2020 12:54		1
o-Xylene	95-47-6	0.201	0.0197	0.00671	mg/kg	05.20.2020 12:54		1
Total Xylenes	1330-20-7	0.715	0.0197	0.00671	mg/kg	05.20.2020 12:54		1
Total BTEX		5.42	0.0197	0.00461	mg/kg	05.20.2020 12:54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	83	%	68-120	05.20.2020 12:54	
a,a,a-Trifluorotoluene	98-08-8	97	%	71-121	05.20.2020 12:54	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5035A

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 05.19.2020 12:00

Basis: Wet Weight

Seq Number: 3126759

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	26.1	3.94	0.267	mg/kg	05.20.2020 12:54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	76-123	05.20.2020 12:54	
a,a,a-Trifluorotoluene	98-08-8	98	%	69-120	05.20.2020 12:54	



Certificate of Analytical Results 661942

Terracon-Lubbock, Lubbock, TX

Tex Mack 118

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

Matrix: Soil

Date Received: 05.18.2020 14:10

Lab Sample Id: 661942-005

Date Collected: 05.14.2020 13:05

Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 05.21.2020 09:12

Basis: Wet Weight

Seq Number: 3126693

SUB: T104704215-19-30

Preliminary

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9810	101	3.57	mg/kg	05.21.2020 23:15		10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 05.19.2020 12:00

Basis: Wet Weight

Seq Number: 3126757

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0451	0.0196	0.00886	mg/kg	05.20.2020 13:18		1
Toluene	108-88-3	0.0608	0.0196	0.00459	mg/kg	05.20.2020 13:18		1
Ethylbenzene	100-41-4	0.0294	0.0196	0.00604	mg/kg	05.20.2020 13:18		1
m,p-Xylenes	179601-23-1	0.0333	0.0392	0.00669	mg/kg	05.20.2020 13:18	J	1
o-Xylene	95-47-6	<0.00669	0.0196	0.00669	mg/kg	05.20.2020 13:18	U	1
Total Xylenes	1330-20-7	0.0333	0.0196	0.00669	mg/kg	05.20.2020 13:18		1
Total BTEX		0.169	0.0196	0.00459	mg/kg	05.20.2020 13:18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	85	%	68-120	05.20.2020 13:18	
a,a,a-Trifluorotoluene	98-08-8	105	%	71-121	05.20.2020 13:18	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5035A

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 05.19.2020 12:00

Basis: Wet Weight

Seq Number: 3126759

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	2.31	3.92	0.266	mg/kg	05.20.2020 13:18	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	76-123	05.20.2020 13:18	
a,a,a-Trifluorotoluene	98-08-8	107	%	69-120	05.20.2020 13:18	



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

Tex Mack 118

Analytical Method: Chloride by EPA 300

Seq Number: 3126693

MB Sample Id: 7703800-1-BLK

Matrix: Solid

LCS Sample Id: 7703800-1-BKS

Prep Method: E300P

Date Prep: 05.21.2020

LCSD Sample Id: 7703800-1-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	105	105	106	106	80-120	1	20	mg/kg	05.21.2020 18:12	

Preliminary

Analytical Method: Chloride by EPA 300

Seq Number: 3126693

Parent Sample Id: 661927-001

Matrix: Soil

MS Sample Id: 661927-001 S

Prep Method: E300P

Date Prep: 05.21.2020

MSD Sample Id: 661927-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.4	100	112	97	111	96	80-120	1	20	mg/kg	05.21.2020 19:53	

Analytical Method: Chloride by EPA 300

Seq Number: 3126693

Parent Sample Id: 661929-009

Matrix: Soil

MS Sample Id: 661929-009 S

Prep Method: E300P

Date Prep: 05.21.2020

MSD Sample Id: 661929-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.6	99.8	105	95	105	94	80-120	0	20	mg/kg	05.21.2020 19:02	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3126757

MB Sample Id: 7703669-1-BLK

Matrix: Solid

LCS Sample Id: 7703669-1-BKS

Prep Method: SW5035A

Date Prep: 05.19.2020

LCSD Sample Id: 7703669-1-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	05.20.2020 00:30	
Toluene	<0.00468	2.00	1.99	100	1.99	100	77-120	0	20	mg/kg	05.20.2020 00:30	
Ethylbenzene	<0.00616	2.00	1.94	97	1.97	99	77-120	2	20	mg/kg	05.20.2020 00:30	
m,p-Xylenes	<0.00682	4.00	3.90	98	3.96	99	78-120	2	20	mg/kg	05.20.2020 00:30	
o-Xylene	<0.00682	2.00	1.95	98	1.98	99	78-120	2	20	mg/kg	05.20.2020 00:30	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	93		96		94		68-120	%	05.20.2020 00:30
a,a,a-Trifluorotoluene	102		100		100		71-121	%	05.20.2020 00:30

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

Tex Mack 118

Analytical Method: BTEX by EPA 8021B

Seq Number: 3126757

Parent Sample Id: 661901-001

Matrix: Soil

MS Sample Id: 661901-001 S

Prep Method: SW5035A

Date Prep: 05.19.2020

MSD Sample Id: 661901-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0445	1.97	1.97	100	1.92	102	54-120	3	25	mg/kg	05.20.2020 05:21	
Toluene	0.196	1.97	2.07	95	2.01	96	57-120	3	25	mg/kg	05.20.2020 05:21	
Ethylbenzene	<0.0303	1.97	1.79	91	1.75	93	58-131	2	25	mg/kg	05.20.2020 05:21	
m,p-Xylenes	0.128	3.94	3.51	86	3.44	88	62-124	2	25	mg/kg	05.20.2020 05:21	
o-Xylene	<0.0336	1.97	1.77	90	1.73	92	62-124	2	25	mg/kg	05.20.2020 05:21	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	86		85		68-120	%	05.20.2020 05:21
a,a,a-Trifluorotoluene	103		103		71-121	%	05.20.2020 05:21

Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3126759

MB Sample Id: 7703670-1-BLK

Matrix: Solid

LCS Sample Id: 7703670-1-BKS

Prep Method: SW5035A

Date Prep: 05.19.2020

LCSD Sample Id: 7703670-1-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	21.1	106	21.6	108	35-129	2	20	mg/kg	05.20.2020 01:18	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	103		142	**	146	**	76-123	%	05.20.2020 01:18
a,a,a-Trifluorotoluene	103		100		102		69-120	%	05.20.2020 01:18

Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3126759

Parent Sample Id: 661901-001

Matrix: Soil

MS Sample Id: 661901-001 S

Prep Method: SW5035A

Date Prep: 05.19.2020

MSD Sample Id: 661901-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	8.43	89.9	108	111	106	109	35-129	2	20	mg/kg	05.20.2020 06:09	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	101		93		76-123	%	05.20.2020 06:09
a,a,a-Trifluorotoluene	100		96		69-120	%	05.20.2020 06:09

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

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

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

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

6619412

Preliminary 1.000

Inter-Office Shipment

IOS Number : **63919**

Date/Time: 05.19.2020

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.: 770502983275

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
661942-001	S	HA-1 (0-0.5)	05.14.2020 12:45	E300_CL	Chloride by EPA 300	05.25.2020	06.11.2020	JKR	CL	
661942-001	S	HA-1 (0-0.5)	05.14.2020 12:45	SW8015DRO-ORO	TPH DRO-ORO by SW-846 8015	05.25.2020	05.28.2020	JKR	PHCD	
661942-003	S	HA-1 (1.5-2)	05.14.2020 12:55	E300_CL	Chloride by EPA 300	05.25.2020	06.11.2020	JKR	CL	
661942-003	S	HA-1 (1.5-2)	05.14.2020 12:55	SW8015DRO-ORO	TPH DRO-ORO by SW-846 8015	05.25.2020	05.28.2020	JKR	PHCD	
661942-005	S	HA-1 (4.5-.5)	05.14.2020 13:05	E300_CL	Chloride by EPA 300	05.25.2020	06.11.2020	JKR	CL	
661942-005	S	HA-1 (4.5-.5)	05.14.2020 13:05	SW8015DRO-ORO	TPH DRO-ORO by SW-846 8015	05.25.2020	05.28.2020	JKR	PHCD	

Inter Office Shipment or Sample Comments:

Relinquished By:



Brenda Ward

Date Relinquished: 05.19.2020

Received By:



Jhyrom Edralin

Date Received: 05.20.2020

Cooler Temperature: 3.5



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 63919

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : hiu-068

Sent By: Brenda Ward

Date Sent: 05.19.2020 11.16 AM

Received By: Jhyrom Edralin

Date Received: 05.20.2020 09.46 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 *Custody Seals Signed and dated for Containers/coolers	N/A
#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:

Jhyrom Edralin

Date: 05.20.2020

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 05.18.2020 02.10.00 PM

Work Order #: 661942

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)?	1.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes TPH & Chlorides 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: 05.19.2020

Checklist reviewed by:


Jessica Kramer

Date: 05.19.2020



Certificate of Analysis Summary 661942

Terracon-Lubbock, Lubbock, TX

Project Name: Western Federal #3 Release

Project Id: AR207082
Contact: Joseph Guesnier
Project Location: Client: Spur Energy Partners

Date Received in Lab: Mon 05.18.2020 14:10
Report Date: 06.01.2020 16:53
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	661942-001	661942-003	661942-005			
	Field Id:	HA-1 (0-0.5)	HA-1 (1.5-2)	HA-1 (4.5-.5)			
	Depth:	0-0.5 ft	1.5-2 ft	4.5-5 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	05.14.2020 12:45	05.14.2020 12:55	05.14.2020 13:05			
BTEX by EPA 8021B	Extracted:	05.19.2020 12:00	05.19.2020 12:00	05.19.2020 12:00			
	Analyzed:	05.20.2020 12:30	05.20.2020 12:54	05.20.2020 13:18			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		0.779 0.0194	2.06 0.0197	0.0451 0.0196			
Toluene		0.784 0.0194	2.09 0.0197	0.0608 0.0196			
Ethylbenzene		0.227 0.0194	0.553 0.0197	0.0294 0.0196			
m,p-Xylenes		0.223 0.0388	0.514 0.0394	0.0333 J 0.0392			
o-Xylene		0.0854 0.0194	0.201 0.0197	<0.00669 0.0196			
Total Xylenes		0.308 0.0194	0.715 0.0197	0.0333 0.0196			
Total BTEX		2.10 0.0194	5.42 0.0197	0.169 0.0196			
Chloride by EPA 300 SUB: T104704215-19-30	Extracted:	05.21.2020 09:12	05.21.2020 09:12	05.21.2020 09:12			
	Analyzed:	05.21.2020 22:41	05.21.2020 22:58	05.21.2020 23:15			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		5790 98.4	12900 101	9810 101			
TPH By SW8015 Mod SUB: T104704215-19-30	Extracted:	05.28.2020 13:06	05.28.2020 13:17	05.28.2020 13:26			
	Analyzed:	05.29.2020 17:39	05.29.2020 18:59	05.31.2020 20:04			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		19.3 J 49.6	21.5 J 49.9	<9.95 49.8			
Diesel Range Organics (DRO)		10.4 J 49.6	<9.98 49.9	<9.95 49.8			
Motor Oil Range Hydrocarbons (MRO)		<9.92 49.6	<9.98 49.9	<9.95 49.8			
Total TPH		29.7 J 49.6	21.5 J 49.9	<9.95 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.

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

Jessica Kramer

Jessica Kramer
Project Manager



Analytical Report 661942

for

Terracon-Lubbock

Project Manager: Bryant McBrayer

Western Federal #3 Release

AR207082

06.01.2020

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-23), Arizona (AZ0809)

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

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)

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

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-6)

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

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



06.01.2020

Project Manager: **Joseph Guesnier**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: XENCO Report No(s): **661942**

Western Federal #3 Release

Project Address: Client: Spur Energy Partners

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 XENCO Report Number(s) 661942. 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. 661942 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'. The signature is written in a cursive, flowing style.

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 661942****Terracon-Lubbock, Lubbock, TX**

Tex Mack 118

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HA-1 (0-0.5)	S	05.14.2020 12:45	0 - 0.5 ft	661942-001
HA-1 (1.5-2)	S	05.14.2020 12:55	1.5 - 2 ft	661942-003
HA-1 (4.5-.5)	S	05.14.2020 13:05	4.5 - 5 ft	661942-005
HA-1 (0.5-1)	S	05.14.2020 12:50	0.5 - 1 ft	Not Analyzed
HA-1 (3-3.5)	S	05.14.2020 13:00	3 - 3.5 ft	Not Analyzed

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Western Federal #3 Release**Project ID: AR207082
Work Order Number(s): 661942Report Date: 06.01.2020
Date Received: 05.18.2020

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:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 661942

Terracon-Lubbock, Lubbock, TX

Western Federal #3 Release

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

Matrix: Soil

Date Received: 05.18.2020 14:10

Lab Sample Id: 661942-001

Date Collected: 05.14.2020 12:45

Sample Depth: 0 - 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 05.21.2020 09:12

Basis: Wet Weight

Seq Number: 3126693

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5790	98.4	3.48	mg/kg	05.21.2020 22:41		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DRU

% Moisture:

Analyst: ISU

Date Prep: 05.28.2020 13:06

Basis: Wet Weight

Seq Number: 3127457

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	19.3	49.6	9.92	mg/kg	05.29.2020 17:39	J	1
Diesel Range Organics (DRO)	C10C28DRO	10.4	49.6	9.92	mg/kg	05.29.2020 17:39	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.92	49.6	9.92	mg/kg	05.29.2020 17:39	U	1
Total TPH	PHC635	29.7	49.6	9.92	mg/kg	05.29.2020 17:39	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	05.29.2020 17:39	
o-Terphenyl	84-15-1	110	%	70-135	05.29.2020 17:39	



Certificate of Analytical Results 661942

Terracon-Lubbock, Lubbock, TX

Western Federal #3 Release

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

Matrix: Soil

Date Received: 05.18.2020 14:10

Lab Sample Id: 661942-001

Date Collected: 05.14.2020 12:45

Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 05.19.2020 12:00

Basis: Wet Weight

Seq Number: 3126757

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.779	0.0194	0.00878	mg/kg	05.20.2020 12:30		1
Toluene	108-88-3	0.784	0.0194	0.00454	mg/kg	05.20.2020 12:30		1
Ethylbenzene	100-41-4	0.227	0.0194	0.00598	mg/kg	05.20.2020 12:30		1
m,p-Xylenes	179601-23-1	0.223	0.0388	0.00662	mg/kg	05.20.2020 12:30		1
o-Xylene	95-47-6	0.0854	0.0194	0.00662	mg/kg	05.20.2020 12:30		1
Total Xylenes	1330-20-7	0.308	0.0194	0.00662	mg/kg	05.20.2020 12:30		1
Total BTEX		2.10	0.0194	0.00454	mg/kg	05.20.2020 12:30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	83	%	68-120	05.20.2020 12:30	
a,a,a-Trifluorotoluene	98-08-8	96	%	71-121	05.20.2020 12:30	



Certificate of Analytical Results 661942

Terracon-Lubbock, Lubbock, TX

Western Federal #3 Release

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

Matrix: Soil

Date Received: 05.18.2020 14:10

Lab Sample Id: 661942-003

Date Collected: 05.14.2020 12:55

Sample Depth: 1.5 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 05.21.2020 09:12

Basis: Wet Weight

Seq Number: 3126693

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12900	101	3.58	mg/kg	05.21.2020 22:58		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DRU

% Moisture:

Analyst: ISU

Date Prep: 05.28.2020 13:17

Basis: Wet Weight

Seq Number: 3127458

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	21.5	49.9	9.98	mg/kg	05.29.2020 18:59	J	1
Diesel Range Organics (DRO)	C10C28DRO	<9.98	49.9	9.98	mg/kg	05.29.2020 18:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.98	49.9	9.98	mg/kg	05.29.2020 18:59	U	1
Total TPH	PHC635	21.5	49.9	9.98	mg/kg	05.29.2020 18:59	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.29.2020 18:59	
o-Terphenyl	84-15-1	100	%	70-135	05.29.2020 18:59	



Certificate of Analytical Results 661942

Terracon-Lubbock, Lubbock, TX

Western Federal #3 Release

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

Matrix: Soil

Date Received: 05.18.2020 14:10

Lab Sample Id: 661942-003

Date Collected: 05.14.2020 12:55

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 05.19.2020 12:00

Basis: Wet Weight

Seq Number: 3126757

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	2.06	0.0197	0.00890	mg/kg	05.20.2020 12:54		1
Toluene	108-88-3	2.09	0.0197	0.00461	mg/kg	05.20.2020 12:54		1
Ethylbenzene	100-41-4	0.553	0.0197	0.00606	mg/kg	05.20.2020 12:54		1
m,p-Xylenes	179601-23-1	0.514	0.0394	0.00671	mg/kg	05.20.2020 12:54		1
o-Xylene	95-47-6	0.201	0.0197	0.00671	mg/kg	05.20.2020 12:54		1
Total Xylenes	1330-20-7	0.715	0.0197	0.00671	mg/kg	05.20.2020 12:54		1
Total BTEX		5.42	0.0197	0.00461	mg/kg	05.20.2020 12:54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	83	%	68-120	05.20.2020 12:54	
a,a,a-Trifluorotoluene	98-08-8	97	%	71-121	05.20.2020 12:54	



Certificate of Analytical Results 661942

Terracon-Lubbock, Lubbock, TX

Western Federal #3 Release

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

Matrix: Soil

Date Received: 05.18.2020 14:10

Lab Sample Id: 661942-005

Date Collected: 05.14.2020 13:05

Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 05.21.2020 09:12

Basis: Wet Weight

Seq Number: 3126693

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9810	101	3.57	mg/kg	05.21.2020 23:15		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DRU

% Moisture:

Analyst: ISU

Date Prep: 05.28.2020 13:26

Basis: Wet Weight

Seq Number: 3127458

SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.95	49.8	9.95	mg/kg	05.31.2020 20:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.95	49.8	9.95	mg/kg	05.31.2020 20:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.95	49.8	9.95	mg/kg	05.31.2020 20:04	U	1
Total TPH	PHC635	<9.95	49.8	9.95	mg/kg	05.31.2020 20:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	05.31.2020 20:04	
o-Terphenyl	84-15-1	97	%	70-135	05.31.2020 20:04	



Certificate of Analytical Results 661942

Terracon-Lubbock, Lubbock, TX

Western Federal #3 Release

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

Matrix: Soil

Date Received: 05.18.2020 14:10

Lab Sample Id: 661942-005

Date Collected: 05.14.2020 13:05

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 05.19.2020 12:00

Basis: Wet Weight

Seq Number: 3126757

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0451	0.0196	0.00886	mg/kg	05.20.2020 13:18		1
Toluene	108-88-3	0.0608	0.0196	0.00459	mg/kg	05.20.2020 13:18		1
Ethylbenzene	100-41-4	0.0294	0.0196	0.00604	mg/kg	05.20.2020 13:18		1
m,p-Xylenes	179601-23-1	0.0333	0.0392	0.00669	mg/kg	05.20.2020 13:18	J	1
o-Xylene	95-47-6	<0.00669	0.0196	0.00669	mg/kg	05.20.2020 13:18	U	1
Total Xylenes	1330-20-7	0.0333	0.0196	0.00669	mg/kg	05.20.2020 13:18		1
Total BTEX		0.169	0.0196	0.00459	mg/kg	05.20.2020 13:18		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	85	%	68-120	05.20.2020 13:18			
a,a,a-Trifluorotoluene	98-08-8	105	%	71-121	05.20.2020 13:18			



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, Lubbock, TX

Western Federal #3 Release

Analytical Method: Chloride by EPA 300

Seq Number: 3126693

MB Sample Id: 7703800-1-BLK

Matrix: Solid

LCS Sample Id: 7703800-1-BKS

Prep Method: E300P

Date Prep: 05.21.2020

LCSD Sample Id: 7703800-1-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	105	105	106	106	80-120	1	20	mg/kg	05.21.2020 18:12	

Analytical Method: Chloride by EPA 300

Seq Number: 3126693

Parent Sample Id: 661927-001

Matrix: Soil

MS Sample Id: 661927-001 S

Prep Method: E300P

Date Prep: 05.21.2020

MSD Sample Id: 661927-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.4	100	112	97	111	96	80-120	1	20	mg/kg	05.21.2020 19:53	

Analytical Method: Chloride by EPA 300

Seq Number: 3126693

Parent Sample Id: 661929-009

Matrix: Soil

MS Sample Id: 661929-009 S

Prep Method: E300P

Date Prep: 05.21.2020

MSD Sample Id: 661929-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.6	99.8	105	95	105	94	80-120	0	20	mg/kg	05.21.2020 19:02	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3127457

MB Sample Id: 7704261-1-BLK

Matrix: Solid

LCS Sample Id: 7704261-1-BKS

Prep Method: SW8015P

Date Prep: 05.28.2020

LCSD Sample Id: 7704261-1-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	909	91	997	100	70-135	9	35	mg/kg	05.28.2020 18:14	
Diesel Range Organics (DRO)	<10.0	1000	1090	109	1070	107	70-135	2	35	mg/kg	05.28.2020 18:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		109		108		70-135	%	05.28.2020 18:14
o-Terphenyl	98		111		109		70-135	%	05.28.2020 18:14

Analytical Method: TPH By SW8015 Mod

Seq Number: 3127458

MB Sample Id: 7704262-1-BLK

Matrix: Solid

LCS Sample Id: 7704262-1-BKS

Prep Method: SW8015P

Date Prep: 05.28.2020

LCSD Sample Id: 7704262-1-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	848	85	865	87	70-135	2	35	mg/kg	05.29.2020 18:19	
Diesel Range Organics (DRO)	<10.0	1000	1010	101	978	98	70-135	3	35	mg/kg	05.29.2020 18:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		110		106		70-135	%	05.29.2020 18:19
o-Terphenyl	105		103		100		70-135	%	05.29.2020 18:19

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



QC Summary 661942
Terracon-Lubbock, Lubbock, TX
 Western Federal #3 Release

Analytical Method: TPH By SW8015 Mod

Seq Number: 3127457

Matrix: Solid

Prep Method: SW8015P

Date Prep: 05.28.2020

MB Sample Id: 7704261-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<10.0	mg/kg	05.28.2020 17:54	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3127458

Matrix: Solid

Prep Method: SW8015P

Date Prep: 05.28.2020

MB Sample Id: 7704262-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<10.0	mg/kg	05.31.2020 14:20	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3127457

Matrix: Soil

Prep Method: SW8015P

Date Prep: 05.28.2020

Parent Sample Id: 661901-003

MS Sample Id: 661901-003 S

MSD Sample Id: 661901-003 SD

Parameter

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)	<10.0	1000	854	85	855	86	70-135	0	35	mg/kg	05.28.2020 19:34	
Diesel Range Organics (DRO)	15.5	1000	1010	99	997	98	70-135	1	35	mg/kg	05.28.2020 19:34	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		106		70-135	%	05.28.2020 19:34
o-Terphenyl	104		103		70-135	%	05.28.2020 19:34

Analytical Method: TPH By SW8015 Mod

Seq Number: 3127458

Matrix: Soil

Prep Method: SW8015P

Date Prep: 05.28.2020

Parent Sample Id: 661942-003

MS Sample Id: 661942-003 S

MSD Sample Id: 661942-003 SD

Parameter

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)	21.5	999	866	85	926	90	70-135	7	35	mg/kg	05.29.2020 19:19	
Diesel Range Organics (DRO)	<9.99	999	1010	101	1100	110	70-135	9	35	mg/kg	05.29.2020 19:19	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		115		70-135	%	05.29.2020 19:19
o-Terphenyl	103		116		70-135	%	05.29.2020 19:19

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, Lubbock, TX

Western Federal #3 Release

Analytical Method: BTEX by EPA 8021B

Seq Number: 3126757

MB Sample Id: 7703669-1-BLK

Matrix: Solid

LCS Sample Id: 7703669-1-BKS

Prep Method: SW5035A

Date Prep: 05.19.2020

LCSD Sample Id: 7703669-1-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	05.20.2020 00:30	
Toluene	<0.00468	2.00	1.99	100	1.99	100	77-120	0	20	mg/kg	05.20.2020 00:30	
Ethylbenzene	<0.00616	2.00	1.94	97	1.97	99	77-120	2	20	mg/kg	05.20.2020 00:30	
m,p-Xylenes	<0.00682	4.00	3.90	98	3.96	99	78-120	2	20	mg/kg	05.20.2020 00:30	
o-Xylene	<0.00682	2.00	1.95	98	1.98	99	78-120	2	20	mg/kg	05.20.2020 00:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	93		96		94		68-120	%	05.20.2020 00:30
a,a,a-Trifluorotoluene	102		100		100		71-121	%	05.20.2020 00:30

Analytical Method: BTEX by EPA 8021B

Seq Number: 3126757

Parent Sample Id: 661901-001

Matrix: Soil

MS Sample Id: 661901-001 S

Prep Method: SW5035A

Date Prep: 05.19.2020

MSD Sample Id: 661901-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0445	1.97	1.97	100	1.92	102	54-120	3	25	mg/kg	05.20.2020 05:21	
Toluene	0.196	1.97	2.07	95	2.01	96	57-120	3	25	mg/kg	05.20.2020 05:21	
Ethylbenzene	<0.0303	1.97	1.79	91	1.75	93	58-131	2	25	mg/kg	05.20.2020 05:21	
m,p-Xylenes	0.128	3.94	3.51	86	3.44	88	62-124	2	25	mg/kg	05.20.2020 05:21	
o-Xylene	<0.0336	1.97	1.77	90	1.73	92	62-124	2	25	mg/kg	05.20.2020 05:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	86		85		68-120	%	05.20.2020 05:21
a,a,a-Trifluorotoluene	103		103		71-121	%	05.20.2020 05:21

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

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

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

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

6619412

Final 1.000

Inter-Office Shipment

IOS Number : **63919**

Date/Time: 05.19.2020

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.: 770502983275

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
661942-001	S	HA-1 (0-0.5)	05.14.2020 12:45	E300_CL	Chloride by EPA 300	05.25.2020	06.11.2020	JKR	CL	
661942-001	S	HA-1 (0-0.5)	05.14.2020 12:45	SW8015DRO-ORO	TPH DRO-ORO by SW-846 8015	05.25.2020	05.28.2020	JKR	PHCD	
661942-003	S	HA-1 (1.5-2)	05.14.2020 12:55	E300_CL	Chloride by EPA 300	05.25.2020	06.11.2020	JKR	CL	
661942-003	S	HA-1 (1.5-2)	05.14.2020 12:55	SW8015DRO-ORO	TPH DRO-ORO by SW-846 8015	05.25.2020	05.28.2020	JKR	PHCD	
661942-005	S	HA-1 (4.5-.5)	05.14.2020 13:05	E300_CL	Chloride by EPA 300	05.25.2020	06.11.2020	JKR	CL	
661942-005	S	HA-1 (4.5-.5)	05.14.2020 13:05	SW8015DRO-ORO	TPH DRO-ORO by SW-846 8015	05.25.2020	05.28.2020	JKR	PHCD	

Inter Office Shipment or Sample Comments:

Relinquished By:



Brenda Ward

Date Relinquished: 05.19.2020

Received By:



Jhyrom Edralin

Date Received: 05.20.2020

Cooler Temperature: 3.5



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 63919

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : hiu-068

Sent By: Brenda Ward

Date Sent: 05.19.2020 11.16 AM

Received By: Jhyrom Edralin

Date Received: 05.20.2020 09.46 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 *Custody Seals Signed and dated for Containers/coolers	N/A
#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:

Jhyrom Edralin

Date: 05.20.2020

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 05.18.2020 02.10.00 PM

Work Order #: 661942

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)?	1.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes TPH & Chlorides 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: 05.19.2020

Checklist reviewed by:


Jessica Kramer

Date: 05.19.2020

Certificate of Analysis Summary 671085

Terracon-Lubbock, Lubbock, TX

Project Name: Western Federal #3 Release

Project Id: AR207082
 Contact: Joseph Guesnier
 Project Location:

Date Received in Lab: Wed 08.26.2020 15:26
 Report Date: 08.28.2020 15:37
 Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	671085-001	671085-002				
	Field Id:	F-(3.5-4)	W-(1.5-2)				
	Depth:	3.5-4	1.5-2				
	Matrix:	SOIL	SOIL				
	Sampled:	08.23.2020 14:00	08.23.2020 14:05				
BTEX by EPA 8021B SUB: T104704400-20-21	Extracted:	08.27.2020 16:45	08.27.2020 16:45				
	Analyzed:	08.27.2020 23:19	08.27.2020 23:40				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00199 0.00199	<0.00198 0.00198				
Toluene		<0.00199 0.00199	<0.00198 0.00198				
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198				
m,p-Xylenes		<0.00398 0.00398	<0.00396 0.00396				
o-Xylene		<0.00199 0.00199	<0.00198 0.00198				
Xylenes, Total		<0.00199 0.00199	<0.00198 0.00198				
Total BTEX		<0.00199 0.00199	<0.00198 0.00198				
Chloride by EPA 300 SUB: T104704400-20-21	Extracted:	08.27.2020 15:00	08.27.2020 15:00				
	Analyzed:	08.27.2020 16:35	08.27.2020 16:41				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		423 4.98	150 4.96				
TPH by SW8015 Mod SUB: T104704400-20-21	Extracted:	08.27.2020 17:00	08.27.2020 17:00				
	Analyzed:	08.28.2020 07:29	08.28.2020 07:49				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9				
Diesel Range Organics (DRO)		<50.0 50.0	83.9 49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9				
Total TPH		<50.0 50.0	83.9 49.9				

BRL - Below Reporting Limit

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



Analytical Report 671085

for

Terracon-Lubbock

Project Manager: Bryant McBrayer

Western Federal #3 Release

AR207082

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): **671085**

Western Federal #3 Release

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) 671085. 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. 671085 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 671085

Terracon-Lubbock, Lubbock, TX

Western Federal #3 Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
F-(3.5-4)	S	08.23.2020 14:00	3.5 - 4	671085-001
W-(1.5-2)	S	08.23.2020 14:05	1.5 - 2	671085-002

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Western Federal #3 Release**Project ID: AR207085
Work Order Number(s): 671085Report Date: 08.28.2020
Date Received: 08.26.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3135780 BTEX by EPA 8021B

Lab Sample ID 671085-001 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: 671085-001, -002.

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



Certificate of Analytical Results 671085

Terracon-Lubbock, Lubbock, TX

Western Federal #3 Release

Sample Id: **F-(3.5-4)**
Lab Sample Id: 671085-001

Matrix: Soil
Date Collected: 08.23.2020 14:00

Date Received: 08.26.2020 15:26
Sample Depth: 3.5 - 4

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3135772

Date Prep: 08.27.2020 15:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	423	4.98	mg/kg	08.27.2020 16:35		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3135833

Date Prep: 08.27.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.28.2020 07:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.28.2020 07:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.28.2020 07:29	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.28.2020 07:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-130	08.28.2020 07:29	
o-Terphenyl	84-15-1	104	%	70-130	08.28.2020 07:29	



Certificate of Analytical Results 671085

Terracon-Lubbock, Lubbock, TX

Western Federal #3 Release

Sample Id: **F-(3.5-4)**
 Lab Sample Id: 671085-001

Matrix: Soil
 Date Collected: 08.23.2020 14:00

Date Received: 08.26.2020 15:26
 Sample Depth: 3.5 - 4

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3135780

Prep Method: SW5035A

% Moisture:

Date Prep: 08.27.2020 16:45

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.27.2020 23:19	UX	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.27.2020 23:19	UX	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.27.2020 23:19	UX	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.27.2020 23:19	UX	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.27.2020 23:19	UX	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	08.27.2020 23:19	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.27.2020 23:19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	08.27.2020 23:19		
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.27.2020 23:19		



Certificate of Analytical Results 671085

Terracon-Lubbock, Lubbock, TX

Western Federal #3 Release

Sample Id: **W-(1.5-2)**
Lab Sample Id: 671085-002

Matrix: Soil
Date Collected: 08.23.2020 14:05

Date Received: 08.26.2020 15:26
Sample Depth: 1.5 - 2

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3135772

Date Prep: 08.27.2020 15:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	150	4.96	mg/kg	08.27.2020 16:41		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3135833

Date Prep: 08.27.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

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 07:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	83.9	49.9	mg/kg	08.28.2020 07:49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.28.2020 07:49	U	1
Total TPH	PHC635	83.9	49.9	mg/kg	08.28.2020 07:49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-130	08.28.2020 07:49	
o-Terphenyl	84-15-1	105	%	70-130	08.28.2020 07:49	



Certificate of Analytical Results 671085

Terracon-Lubbock, Lubbock, TX

Western Federal #3 Release

Sample Id: **W-(1.5-2)**
 Lab Sample Id: 671085-002

Matrix: Soil
 Date Collected: 08.23.2020 14:05

Date Received: 08.26.2020 15:26
 Sample Depth: 1.5 - 2

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3135780

Prep Method: SW5035A

% Moisture:

Date Prep: 08.27.2020 16:45

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.27.2020 23:40	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.27.2020 23:40	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.27.2020 23:40	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.27.2020 23:40	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.27.2020 23:40	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	08.27.2020 23:40	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.27.2020 23:40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.27.2020 23:40		
4-Bromofluorobenzene	460-00-4	107	%	70-130	08.27.2020 23:40		

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

Western Federal #3 Release

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

Western Federal #3 Release

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

580169

Final 1.000

Inter-Office Shipment

IOS Number : **69463**

Date/Time: 08.26.2020

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.: 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
671085-001	S	F-(3.5-4)	08.23.2020 14:00	SW8015MOD_NM	TPH by SW8015 Mod	08.28.2020	09.06.2020	JKR	PHCC10C28 PHCC28C3:	
671085-001	S	F-(3.5-4)	08.23.2020 14:00	SW8021B	BTEX by EPA 8021B	08.28.2020	09.06.2020	JKR	BR4FBZ BZ BZME EBZ	
671085-001	S	F-(3.5-4)	08.23.2020 14:00	E300_CL	Chloride by EPA 300	08.28.2020	09.20.2020	JKR	CL	
671085-002	S	W-(1.5-2)	08.23.2020 14:05	SW8021B	BTEX by EPA 8021B	08.28.2020	09.06.2020	JKR	BR4FBZ BZ BZME EBZ	
671085-002	S	W-(1.5-2)	08.23.2020 14:05	E300_CL	Chloride by EPA 300	08.28.2020	09.20.2020	JKR	CL	
671085-002	S	W-(1.5-2)	08.23.2020 14:05	SW8015MOD_NM	TPH by SW8015 Mod	08.28.2020	09.06.2020	JKR	PHCC10C28 PHCC28C3:	

Inter Office Shipment or Sample Comments:

Relinquished By:



Michael J Turner

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 #: 69463

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: 08.26.2020 03.45 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 #: 671085

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?	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: 08.26.2020

Checklist reviewed by:


 Jessica Kramer

Date: 08.28.2020



Environment Testing America

ANALYTICAL REPORT

Eurofins Xenco, Lubbock
6701 Aberdeen Ave.
Suite 8
Lubbock, TX 79424
Tel: (806)794-1296

Laboratory Job ID: 820-916-1

Laboratory Sample Delivery Group: Spur Energy Partners
Client Project/Site: Western Federal 3-AR207082-Terracon

For:

Terracon Consulting Eng & Scientists
5827 50th St
Suite 1
Lubbock, Texas 79424

Attn: Joseph Guesnier

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

Authorized for release by:
6/10/2021 11:19:30 AM

Jessica Kramer, Project Manager
(432)704-5440
jessica.kramer@eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Laboratory Job ID: 820-916-1
SDG: Spur Energy Partners

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Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments. QC data that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result. Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Coliform MCLs

· Based on the EPA primary drinking water standard MCL for total coliforms, a water supply is considered bacteriologically "SAFE" if no coliform bacteria are detected. To be considered "SAFE" your report should indicate "<1 cfu/100mL" or "NEG" for the coliform test. If you report indicates a positive result "POS" or a value greater than or equal to one, then your supply is "UNSAFE FOR DRINKING" contact your local health department.

Warranties, Terms, and Conditions

· Analyses for Field Parameters are performed by EQC field staff. Locations and certifications are identified on the Chain of Custody as follows:

ERF = field staff performs tests under NJ State certification #02015

VL = field staff performs tests under NJ State certification #06005

WG = field staff performs tests under NJ State certification #PA001

H = field staff performs tests under NJ NELAP certification #PA093, PA NELAP certification # 46-

05499

· Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.

· The report shall not be reproduced, except in full, without the written consent of the laboratory

· All samples are collected as "grab" samples unless otherwise identified.

· Reported results related only to the samples as tested. EQC is not responsible for sample integrity unless sampling has been performed by a member of our staff.

· EQC is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance.

· Eurofins' online data portal "TotalAccess" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.

· The following personnel or their deputies have approved the results of the tests performed by EQC: Nicki Smith (Environmental Chemistry) and Zachary Smith (Water Microbiology).



Jessica Kramer
Project Manager
6/10/2021 11:19:30 AM

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Laboratory Job ID: 820-916-1
SDG: Spur Energy Partners

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Definitions/Glossary

Client: Terracon Consulting Eng & Scientists
 Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
 SDG: Spur Energy Partners

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

Job ID: 820-916-1**Laboratory: Eurofins Xenco, Lubbock****Narrative****Job Narrative
820-916-1****Receipt**

The samples were received on 6/4/2021 3:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

GC VOA

Method 8021B: Internal standard responses were outside of acceptance limits for the following samples: BG-2 (0-0.5) (820-916-4) and WW (1.5-2) (820-916-7). The sample(s) shows evidence of matrix interference.

Method 8021B: Surrogate recovery for the following sample was outside control limits: WW (1.5-2) (820-916-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA

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

HPLC/IC

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

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

Client Sample ID: BG-1 (0-0.5)

Lab Sample ID: 820-916-1

Date Collected: 06/02/21 12:00

Matrix: Solid

Date Received: 06/04/21 15:30

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 18:50	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 18:50	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 18:50	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		06/07/21 08:42	06/07/21 18:50	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 18:50	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		06/07/21 08:42	06/07/21 18:50	1
Total BTEX	<0.00399	U	0.00399		mg/Kg		06/07/21 08:42	06/07/21 18:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		70 - 130	06/07/21 08:42	06/07/21 18:50	1
1,4-Difluorobenzene (Surr)	102		70 - 130	06/07/21 08:42	06/07/21 18:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		06/07/21 09:51	06/07/21 16:05	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		06/07/21 09:51	06/07/21 16:05	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		06/07/21 09:51	06/07/21 16:05	1
Total TPH	<49.8	U	49.8		mg/Kg		06/07/21 09:51	06/07/21 16:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	103		70 - 130	06/07/21 09:51	06/07/21 16:05	1
o-Terphenyl	102		70 - 130	06/07/21 09:51	06/07/21 16:05	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.33		5.04		mg/Kg			06/08/21 19:18	1

Client Sample ID: BG-1 (1.5-2)

Lab Sample ID: 820-916-2

Date Collected: 06/02/21 12:05

Matrix: Solid

Date Received: 06/04/21 15:30

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		06/07/21 08:42	06/07/21 19:10	1
Toluene	<0.00199	U	0.00199		mg/Kg		06/07/21 08:42	06/07/21 19:10	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		06/07/21 08:42	06/07/21 19:10	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/07/21 08:42	06/07/21 19:10	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		06/07/21 08:42	06/07/21 19:10	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/07/21 08:42	06/07/21 19:10	1
Total BTEX	<0.00398	U	0.00398		mg/Kg		06/07/21 08:42	06/07/21 19:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130	06/07/21 08:42	06/07/21 19:10	1
1,4-Difluorobenzene (Surr)	101		70 - 130	06/07/21 08:42	06/07/21 19:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 16:26	1

Eurofins Xenco, Lubbock

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

Client Sample ID: BG-1 (1.5-2)

Lab Sample ID: 820-916-2

Date Collected: 06/02/21 12:05

Matrix: Solid

Date Received: 06/04/21 15:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 16:26	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 16:26	1
Total TPH	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 16:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	114		70 - 130				06/07/21 09:51	06/07/21 16:26	1
o-Terphenyl	107		70 - 130				06/07/21 09:51	06/07/21 16:26	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.82		4.97		mg/Kg			06/08/21 19:23	1

Client Sample ID: BG-1 (3.5-4)

Lab Sample ID: 820-916-3

Date Collected: 06/02/21 12:10

Matrix: Solid

Date Received: 06/04/21 15:30

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		06/07/21 08:42	06/07/21 19:31	1
Toluene	<0.00199	U	0.00199		mg/Kg		06/07/21 08:42	06/07/21 19:31	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		06/07/21 08:42	06/07/21 19:31	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/07/21 08:42	06/07/21 19:31	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		06/07/21 08:42	06/07/21 19:31	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/07/21 08:42	06/07/21 19:31	1
Total BTEX	<0.00398	U	0.00398		mg/Kg		06/07/21 08:42	06/07/21 19:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130				06/07/21 08:42	06/07/21 19:31	1
1,4-Difluorobenzene (Surr)	102		70 - 130				06/07/21 08:42	06/07/21 19:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 16:47	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 16:47	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 16:47	1
Total TPH	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 16:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130				06/07/21 09:51	06/07/21 16:47	1
o-Terphenyl	97		70 - 130				06/07/21 09:51	06/07/21 16:47	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16.2		4.95		mg/Kg			06/08/21 19:38	1

Eurofins Xenco, Lubbock

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

Client Sample ID: BG-2 (0-0.5)

Lab Sample ID: 820-916-4

Date Collected: 06/02/21 12:15

Matrix: Solid

Date Received: 06/04/21 15:30

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 19:51	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 19:51	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 19:51	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		06/07/21 08:42	06/07/21 19:51	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 19:51	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		06/07/21 08:42	06/07/21 19:51	1
Total BTEX	<0.00401	U	0.00401		mg/Kg		06/07/21 08:42	06/07/21 19:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	132	S1+	70 - 130	06/07/21 08:42	06/07/21 19:51	1
1,4-Difluorobenzene (Surr)	93		70 - 130	06/07/21 08:42	06/07/21 19:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 17:08	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 17:08	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 17:08	1
Total TPH	<49.9	U	49.9		mg/Kg		06/07/21 09:51	06/07/21 17:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	119		70 - 130	06/07/21 09:51	06/07/21 17:08	1
o-Terphenyl	114		70 - 130	06/07/21 09:51	06/07/21 17:08	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.85		5.05		mg/Kg			06/08/21 19:43	1

Client Sample ID: BG-2 (1.5-2)

Lab Sample ID: 820-916-5

Date Collected: 06/02/21 12:20

Matrix: Solid

Date Received: 06/04/21 15:30

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 20:11	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 20:11	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 20:11	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		06/07/21 08:42	06/07/21 20:11	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 20:11	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		06/07/21 08:42	06/07/21 20:11	1
Total BTEX	<0.00399	U	0.00399		mg/Kg		06/07/21 08:42	06/07/21 20:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130	06/07/21 08:42	06/07/21 20:11	1
1,4-Difluorobenzene (Surr)	102		70 - 130	06/07/21 08:42	06/07/21 20:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		06/07/21 09:51	06/07/21 17:50	1

Eurofins Xenco, Lubbock

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

Client Sample ID: BG-2 (1.5-2)

Lab Sample ID: 820-916-5

Date Collected: 06/02/21 12:20

Matrix: Solid

Date Received: 06/04/21 15:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		06/07/21 09:51	06/07/21 17:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		06/07/21 09:51	06/07/21 17:50	1
Total TPH	<50.0	U	50.0		mg/Kg		06/07/21 09:51	06/07/21 17:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	105		70 - 130				06/07/21 09:51	06/07/21 17:50	1
o-Terphenyl	101		70 - 130				06/07/21 09:51	06/07/21 17:50	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.72		5.05		mg/Kg			06/08/21 19:48	1

Client Sample ID: BG-2 (3.5-4)

Lab Sample ID: 820-916-6

Date Collected: 06/02/21 12:25

Matrix: Solid

Date Received: 06/04/21 15:30

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		06/07/21 08:42	06/07/21 20:32	1
Toluene	<0.00201	U	0.00201		mg/Kg		06/07/21 08:42	06/07/21 20:32	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		06/07/21 08:42	06/07/21 20:32	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		06/07/21 08:42	06/07/21 20:32	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		06/07/21 08:42	06/07/21 20:32	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		06/07/21 08:42	06/07/21 20:32	1
Total BTEX	<0.00402	U	0.00402		mg/Kg		06/07/21 08:42	06/07/21 20:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130				06/07/21 08:42	06/07/21 20:32	1
1,4-Difluorobenzene (Surr)	100		70 - 130				06/07/21 08:42	06/07/21 20:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7		mg/Kg		06/07/21 09:51	06/07/21 18:10	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		06/07/21 09:51	06/07/21 18:10	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		06/07/21 09:51	06/07/21 18:10	1
Total TPH	<49.7	U	49.7		mg/Kg		06/07/21 09:51	06/07/21 18:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	116		70 - 130				06/07/21 09:51	06/07/21 18:10	1
o-Terphenyl	109		70 - 130				06/07/21 09:51	06/07/21 18:10	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.61		4.98		mg/Kg			06/08/21 19:53	1

Eurofins Xenco, Lubbock

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

Client Sample ID: WW (1.5-2)

Lab Sample ID: 820-916-7

Date Collected: 06/02/21 12:30

Matrix: Solid

Date Received: 06/04/21 15:30

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		06/07/21 08:42	06/07/21 20:52	1
Toluene	<0.00202	U	0.00202		mg/Kg		06/07/21 08:42	06/07/21 20:52	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		06/07/21 08:42	06/07/21 20:52	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		06/07/21 08:42	06/07/21 20:52	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		06/07/21 08:42	06/07/21 20:52	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		06/07/21 08:42	06/07/21 20:52	1
Total BTEX	<0.00403	U	0.00403		mg/Kg		06/07/21 08:42	06/07/21 20:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	130		70 - 130	06/07/21 08:42	06/07/21 20:52	1
1,4-Difluorobenzene (Surr)	93		70 - 130	06/07/21 08:42	06/07/21 20:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		06/07/21 09:51	06/07/21 18:31	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		06/07/21 09:51	06/07/21 18:31	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		06/07/21 09:51	06/07/21 18:31	1
Total TPH	<49.8	U	49.8		mg/Kg		06/07/21 09:51	06/07/21 18:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130	06/07/21 09:51	06/07/21 18:31	1
o-Terphenyl	99		70 - 130	06/07/21 09:51	06/07/21 18:31	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	196		4.99		mg/Kg			06/08/21 20:46	1

Surrogate Summary

Client: Terracon Consulting Eng & Scientists
 Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
 SDG: Spur Energy Partners

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
820-916-1	BG-1 (0-0.5)	116	102
820-916-2	BG-1 (1.5-2)	115	101
820-916-3	BG-1 (3.5-4)	117	102
820-916-4	BG-2 (0-0.5)	132 S1+	93
820-916-5	BG-2 (1.5-2)	117	102
820-916-6	BG-2 (3.5-4)	115	100
820-916-7	WW (1.5-2)	130	93
LCS 880-3823/1-A	Lab Control Sample	108	95
LCS 880-3849/1-A	Lab Control Sample	106	97
LCSD 880-3823/2-A	Lab Control Sample Dup	107	94
LCSD 880-3849/2-A	Lab Control Sample Dup	105	97
MB 880-3823/5-A	Method Blank	109	92
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
820-916-1	BG-1 (0-0.5)	103	102
820-916-2	BG-1 (1.5-2)	114	107
820-916-3	BG-1 (3.5-4)	100	97
820-916-4	BG-2 (0-0.5)	119	114
820-916-5	BG-2 (1.5-2)	105	101
820-916-6	BG-2 (3.5-4)	116	109
820-916-7	WW (1.5-2)	102	99
LCS 880-3837/2-A	Lab Control Sample	107	95
LCSD 880-3837/3-A	Lab Control Sample Dup	102	93
MB 880-3837/1-A	Method Blank	109	109
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

Eurofins Xenco, Lubbock

QC Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-3823/5-A

Matrix: Solid

Analysis Batch: 3829

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3823

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 12:25	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 12:25	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 12:25	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		06/07/21 08:42	06/07/21 12:25	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/07/21 08:42	06/07/21 12:25	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		06/07/21 08:42	06/07/21 12:25	1
Total BTEX	<0.00400	U	0.00400		mg/Kg		06/07/21 08:42	06/07/21 12:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	06/07/21 08:42	06/07/21 12:25	1
1,4-Difluorobenzene (Surr)	92		70 - 130	06/07/21 08:42	06/07/21 12:25	1

Lab Sample ID: LCS 880-3823/1-A

Matrix: Solid

Analysis Batch: 3829

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3823

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.07985		mg/Kg		80	70 - 130
Toluene	0.100	0.09903		mg/Kg		99	70 - 130
Ethylbenzene	0.100	0.1032		mg/Kg		103	70 - 130
m-Xylene & p-Xylene	0.200	0.2134		mg/Kg		107	70 - 130
o-Xylene	0.100	0.1065		mg/Kg		107	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-3823/2-A

Matrix: Solid

Analysis Batch: 3829

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3823

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.08619		mg/Kg		86	70 - 130	8	35
Toluene	0.100	0.1035		mg/Kg		104	70 - 130	4	35
Ethylbenzene	0.100	0.1091		mg/Kg		109	70 - 130	6	35
m-Xylene & p-Xylene	0.200	0.2254		mg/Kg		113	70 - 130	5	35
o-Xylene	0.100	0.1132		mg/Kg		113	70 - 130	6	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: LCS 880-3849/1-A

Matrix: Solid

Analysis Batch: 3829

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3849

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.08550		mg/Kg		86	70 - 130

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QC Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

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

Lab Sample ID: LCS 880-3849/1-A

Matrix: Solid

Analysis Batch: 3829

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3849

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	0.100	0.09552		mg/Kg		96	70 - 130
Ethylbenzene	0.100	0.09967		mg/Kg		100	70 - 130
m-Xylene & p-Xylene	0.200	0.2043		mg/Kg		102	70 - 130
o-Xylene	0.100	0.1050		mg/Kg		105	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 880-3849/2-A

Matrix: Solid

Analysis Batch: 3829

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3849

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.08437		mg/Kg		84	70 - 130	1	35
Toluene	0.100	0.09781		mg/Kg		98	70 - 130	2	35
Ethylbenzene	0.100	0.1024		mg/Kg		102	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.2101		mg/Kg		105	70 - 130	3	35
o-Xylene	0.100	0.1070		mg/Kg		107	70 - 130	2	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

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

Lab Sample ID: MB 880-3837/1-A

Matrix: Solid

Analysis Batch: 3855

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3837

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		06/07/21 09:51	06/07/21 12:16	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		06/07/21 09:51	06/07/21 12:16	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		06/07/21 09:51	06/07/21 12:16	1
Total TPH	<50.0	U	50.0		mg/Kg		06/07/21 09:51	06/07/21 12:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	109		70 - 130	06/07/21 09:51	06/07/21 12:16	1
o-Terphenyl	109		70 - 130	06/07/21 09:51	06/07/21 12:16	1

Lab Sample ID: LCS 880-3837/2-A

Matrix: Solid

Analysis Batch: 3855

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3837

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	937.4		mg/Kg		94	70 - 130

Eurofins Xenco, Lubbock

QC Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

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

Lab Sample ID: LCS 880-3837/2-A

Matrix: Solid

Analysis Batch: 3855

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3837

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (Over C10-C28)	1000	1131		mg/Kg		113	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	107		70 - 130
o-Terphenyl	95		70 - 130

Lab Sample ID: LCSD 880-3837/3-A

Matrix: Solid

Analysis Batch: 3855

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3837

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	957.9		mg/Kg		96	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	1072		mg/Kg		107	70 - 130	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	102		70 - 130
o-Terphenyl	93		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-3839/1-A

Matrix: Solid

Analysis Batch: 3888

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			06/08/21 17:41	1

Lab Sample ID: LCS 880-3839/2-A

Matrix: Solid

Analysis Batch: 3888

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	254.9		mg/Kg		102	90 - 110

Lab Sample ID: LCSD 880-3839/3-A

Matrix: Solid

Analysis Batch: 3888

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	254.9		mg/Kg		102	90 - 110	0	20

Lab Sample ID: MB 880-3840/1-A

Matrix: Solid

Analysis Batch: 3889

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			06/08/21 20:32	1

Eurofins Xenco, Lubbock

QC Sample Results

Client: Terracon Consulting Eng & Scientists
 Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
 SDG: Spur Energy Partners

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCS 880-3840/2-A

Matrix: Solid

Analysis Batch: 3889

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			250	256.5		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-3840/3-A

Matrix: Solid

Analysis Batch: 3889

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			250	256.8		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 820-916-7 MS

Matrix: Solid

Analysis Batch: 3889

Client Sample ID: WW (1.5-2)

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	196		250	432.9		mg/Kg		95	90 - 110		

Lab Sample ID: 820-916-7 MSD

Matrix: Solid

Analysis Batch: 3889

Client Sample ID: WW (1.5-2)

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	196		250	432.4		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Terracon Consulting Eng & Scientists
 Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
 SDG: Spur Energy Partners

GC VOA

Prep Batch: 3823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-916-1	BG-1 (0-0.5)	Total/NA	Solid	5035	
820-916-2	BG-1 (1.5-2)	Total/NA	Solid	5035	
820-916-3	BG-1 (3.5-4)	Total/NA	Solid	5035	
820-916-4	BG-2 (0-0.5)	Total/NA	Solid	5035	
820-916-5	BG-2 (1.5-2)	Total/NA	Solid	5035	
820-916-6	BG-2 (3.5-4)	Total/NA	Solid	5035	
820-916-7	WW (1.5-2)	Total/NA	Solid	5035	
MB 880-3823/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-3823/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-3823/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 3829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-916-1	BG-1 (0-0.5)	Total/NA	Solid	8021B	3823
820-916-2	BG-1 (1.5-2)	Total/NA	Solid	8021B	3823
820-916-3	BG-1 (3.5-4)	Total/NA	Solid	8021B	3823
820-916-4	BG-2 (0-0.5)	Total/NA	Solid	8021B	3823
820-916-5	BG-2 (1.5-2)	Total/NA	Solid	8021B	3823
820-916-6	BG-2 (3.5-4)	Total/NA	Solid	8021B	3823
820-916-7	WW (1.5-2)	Total/NA	Solid	8021B	3823
MB 880-3823/5-A	Method Blank	Total/NA	Solid	8021B	3823
LCS 880-3823/1-A	Lab Control Sample	Total/NA	Solid	8021B	3823
LCS 880-3849/1-A	Lab Control Sample	Total/NA	Solid	8021B	3849
LCSD 880-3823/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	3823
LCSD 880-3849/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	3849

Prep Batch: 3849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-3849/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-3849/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 3837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-916-1	BG-1 (0-0.5)	Total/NA	Solid	8015NM Prep	
820-916-2	BG-1 (1.5-2)	Total/NA	Solid	8015NM Prep	
820-916-3	BG-1 (3.5-4)	Total/NA	Solid	8015NM Prep	
820-916-4	BG-2 (0-0.5)	Total/NA	Solid	8015NM Prep	
820-916-5	BG-2 (1.5-2)	Total/NA	Solid	8015NM Prep	
820-916-6	BG-2 (3.5-4)	Total/NA	Solid	8015NM Prep	
820-916-7	WW (1.5-2)	Total/NA	Solid	8015NM Prep	
MB 880-3837/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-3837/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-3837/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 3855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-916-1	BG-1 (0-0.5)	Total/NA	Solid	8015B NM	3837
820-916-2	BG-1 (1.5-2)	Total/NA	Solid	8015B NM	3837
820-916-3	BG-1 (3.5-4)	Total/NA	Solid	8015B NM	3837

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QC Association Summary

Client: Terracon Consulting Eng & Scientists
 Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
 SDG: Spur Energy Partners

GC Semi VOA (Continued)

Analysis Batch: 3855 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-916-4	BG-2 (0-0.5)	Total/NA	Solid	8015B NM	3837
820-916-5	BG-2 (1.5-2)	Total/NA	Solid	8015B NM	3837
820-916-6	BG-2 (3.5-4)	Total/NA	Solid	8015B NM	3837
820-916-7	WW (1.5-2)	Total/NA	Solid	8015B NM	3837
MB 880-3837/1-A	Method Blank	Total/NA	Solid	8015B NM	3837
LCS 880-3837/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	3837
LCSD 880-3837/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	3837

HPLC/IC

Leach Batch: 3839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-916-1	BG-1 (0-0.5)	Soluble	Solid	DI Leach	
820-916-2	BG-1 (1.5-2)	Soluble	Solid	DI Leach	
820-916-3	BG-1 (3.5-4)	Soluble	Solid	DI Leach	
820-916-4	BG-2 (0-0.5)	Soluble	Solid	DI Leach	
820-916-5	BG-2 (1.5-2)	Soluble	Solid	DI Leach	
820-916-6	BG-2 (3.5-4)	Soluble	Solid	DI Leach	
MB 880-3839/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-3839/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-3839/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Leach Batch: 3840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-916-7	WW (1.5-2)	Soluble	Solid	DI Leach	
MB 880-3840/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-3840/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-3840/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
820-916-7 MS	WW (1.5-2)	Soluble	Solid	DI Leach	
820-916-7 MSD	WW (1.5-2)	Soluble	Solid	DI Leach	

Analysis Batch: 3888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-916-1	BG-1 (0-0.5)	Soluble	Solid	300.0	3839
820-916-2	BG-1 (1.5-2)	Soluble	Solid	300.0	3839
820-916-3	BG-1 (3.5-4)	Soluble	Solid	300.0	3839
820-916-4	BG-2 (0-0.5)	Soluble	Solid	300.0	3839
820-916-5	BG-2 (1.5-2)	Soluble	Solid	300.0	3839
820-916-6	BG-2 (3.5-4)	Soluble	Solid	300.0	3839
MB 880-3839/1-A	Method Blank	Soluble	Solid	300.0	3839
LCS 880-3839/2-A	Lab Control Sample	Soluble	Solid	300.0	3839
LCSD 880-3839/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	3839

Analysis Batch: 3889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-916-7	WW (1.5-2)	Soluble	Solid	300.0	3840
MB 880-3840/1-A	Method Blank	Soluble	Solid	300.0	3840
LCS 880-3840/2-A	Lab Control Sample	Soluble	Solid	300.0	3840
LCSD 880-3840/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	3840
820-916-7 MS	WW (1.5-2)	Soluble	Solid	300.0	3840
820-916-7 MSD	WW (1.5-2)	Soluble	Solid	300.0	3840

Eurofins Xenco, Lubbock

Lab Chronicle

Client: Terracon Consulting Eng & Scientists
 Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
 SDG: Spur Energy Partners

Client Sample ID: BG-1 (0-0.5)

Lab Sample ID: 820-916-1

Date Collected: 06/02/21 12:00

Matrix: Solid

Date Received: 06/04/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	3823	06/07/21 08:42	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3829	06/07/21 18:50	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	3837	06/07/21 09:51	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3855	06/07/21 16:05	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	3839	06/07/21 10:20	CH	XEN MID
Soluble	Analysis	300.0		1			3888	06/08/21 19:18	CH	XEN MID

Client Sample ID: BG-1 (1.5-2)

Lab Sample ID: 820-916-2

Date Collected: 06/02/21 12:05

Matrix: Solid

Date Received: 06/04/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	3823	06/07/21 08:42	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3829	06/07/21 19:10	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	3837	06/07/21 09:51	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3855	06/07/21 16:26	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	3839	06/07/21 10:20	CH	XEN MID
Soluble	Analysis	300.0		1			3888	06/08/21 19:23	CH	XEN MID

Client Sample ID: BG-1 (3.5-4)

Lab Sample ID: 820-916-3

Date Collected: 06/02/21 12:10

Matrix: Solid

Date Received: 06/04/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	3823	06/07/21 08:42	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3829	06/07/21 19:31	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	3837	06/07/21 09:51	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3855	06/07/21 16:47	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	3839	06/07/21 10:20	CH	XEN MID
Soluble	Analysis	300.0		1			3888	06/08/21 19:38	CH	XEN MID

Client Sample ID: BG-2 (0-0.5)

Lab Sample ID: 820-916-4

Date Collected: 06/02/21 12:15

Matrix: Solid

Date Received: 06/04/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	3823	06/07/21 08:42	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3829	06/07/21 19:51	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	3837	06/07/21 09:51	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3855	06/07/21 17:08	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	3839	06/07/21 10:20	CH	XEN MID
Soluble	Analysis	300.0		1			3888	06/08/21 19:43	CH	XEN MID

Eurofins Xenco, Lubbock

Lab Chronicle

Client: Terracon Consulting Eng & Scientists
 Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
 SDG: Spur Energy Partners

Client Sample ID: BG-2 (1.5-2)

Lab Sample ID: 820-916-5

Date Collected: 06/02/21 12:20

Matrix: Solid

Date Received: 06/04/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	3823	06/07/21 08:42	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3829	06/07/21 20:11	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	3837	06/07/21 09:51	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3855	06/07/21 17:50	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	3839	06/07/21 10:20	CH	XEN MID
Soluble	Analysis	300.0		1			3888	06/08/21 19:48	CH	XEN MID

Client Sample ID: BG-2 (3.5-4)

Lab Sample ID: 820-916-6

Date Collected: 06/02/21 12:25

Matrix: Solid

Date Received: 06/04/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	3823	06/07/21 08:42	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3829	06/07/21 20:32	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	3837	06/07/21 09:51	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3855	06/07/21 18:10	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	3839	06/07/21 10:20	CH	XEN MID
Soluble	Analysis	300.0		1			3888	06/08/21 19:53	CH	XEN MID

Client Sample ID: WW (1.5-2)

Lab Sample ID: 820-916-7

Date Collected: 06/02/21 12:30

Matrix: Solid

Date Received: 06/04/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	3823	06/07/21 08:42	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	3829	06/07/21 20:52	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	3837	06/07/21 09:51	DM	XEN MID
Total/NA	Analysis	8015B NM		1			3855	06/07/21 18:31	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	3840	06/07/21 10:22	CH	XEN MID
Soluble	Analysis	300.0		1			3889	06/08/21 20:46	CH	XEN MID

Laboratory References:

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

Eurofins Xenco, Lubbock

Accreditation/Certification Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

Laboratory: Eurofins Xenco, Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-20-21	06-30-21

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

Analysis Method	Prep Method	Matrix	Analyte
8015B NM	8015NM Prep	Solid	Total TPH
8021B	5035	Solid	Total BTEX

Method Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

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

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

Laboratory References:

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

Sample Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Western Federal 3-AR207082-Terracon

Job ID: 820-916-1
SDG: Spur Energy Partners

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
820-916-1	BG-1 (0-0.5)	Solid	06/02/21 12:00	06/04/21 15:30	
820-916-2	BG-1 (1.5-2)	Solid	06/02/21 12:05	06/04/21 15:30	
820-916-3	BG-1 (3.5-4)	Solid	06/02/21 12:10	06/04/21 15:30	
820-916-4	BG-2 (0-0.5)	Solid	06/02/21 12:15	06/04/21 15:30	
820-916-5	BG-2 (1.5-2)	Solid	06/02/21 12:20	06/04/21 15:30	
820-916-6	BG-2 (3.5-4)	Solid	06/02/21 12:25	06/04/21 15:30	
820-916-7	WW (1.5-2)	Solid	06/02/21 12:30	06/04/21 15:30	

[illegible]

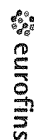
Loc: 820
916

820-916 Chain of Custody

Eurofins Xenco, Lubbock

6701 Aberdeen Ave Suite 8
Lubbock, TX 79424
Phone 806-794-1296

Chain of Custody Record



**Environment Testing
America**

Client Information (Sub Contract Lab)						Sampler	Lab P/N	Carrier Tracking No(s)	COC No.			
Client Contact:		Shipping/Receiving		Company:		Eurofins XenoCo	Kramer, Jessica		820-1271 1			
Address:		Phone:				Jessica.kramer@eurofinsllc.com	State of Origin:		Page: 1 of 1			
City:		Due Date Requested				Accreditations Required (See note):	New Mexico		Job #:			
Midland		6/10/2021				NELAP - Texas			820-916-1			
State Zip:		TAT Requested (days)				Analysis Requested						
TX, 79701												
Phone:		PO #:										
432-704-5440(Tel)		WO #:										
Email:		Project #:										
		82000268										
Project Name:		Site:										
Western Federal 3-AR207082-Terracon		SSOW#:										
Sample Identification - Client ID (Lab ID)						Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)			Total Number of containers	Special Instructions/Note:	
BG-1 (0-0-5) (820-916-1)	6/2/21	12 00	Mountain	Solid	X	X	X					
BG-1 (1 5-2) (820-916-2)	6/2/21	12 05	Mountain	Solid	X	X	X					
BG-1 (3 5-4) (820-916-3)	6/2/21	12 10	Mountain	Solid	X	X	X					
BG-2 (0-0-5) (820-916-4)	6/2/21	12 15	Mountain	Solid	X	X	X					
BG-2 (1 5-2) (820-916-5)	6/2/21	12 20	Mountain	Solid	X	X	X					
BG-2 (3 5-4) (820-916-6)	6/2/21	12 25	Mountain	Solid	X	X	X					
VWV (1 5-2) (820-916-7)	6/2/21	12 30	Mountain	Solid	X	X	X					
Note: Since laboratory accreditations are subject to change, Eurofins XenoCo LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/testing, the samples must be shipped back to the Eurofins XenoCo LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins XenoCo LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins XenoCo LLC.												
Possible Hazard Identification												
Unconfirmed												
Deliverable Requested: I, II, III, IV, Other (Specify)												
Primary Deliverable Rank: 2												
Empty Kit Relinquished by:						Date	Time	Method of Shipment	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
Relinquished by:						6/2/21	6:10	Company	<input type="checkbox"/> Return To Client	<input type="checkbox"/> Disposal By Lab	<input type="checkbox"/> Archive For	Months
Relinquished by:						Date/Time:	Received by:	Company				
Relinquished by:						Date/Time:	Received by:	Company				
Custody Seals Intact:						Cooler Temperature(s) °C and Other Remarks:						
Δ Yes Δ No												

Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Job Number: 820-916-1

SDG Number: Spur Energy Partners

Login Number: 916

List Number: 1

Creator: Turner, Michael

List Source: Eurofins Xenco, Lubbock

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

Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Job Number: 820-916-1

SDG Number: Spur Energy Partners

Login Number: 916

List Number: 2

Creator: Copeland, Tatiana

List Source: Eurofins Xenco, Midland

List Creation: 06/07/21 08:51 AM

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

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, as reflected in our proposal (PAR207082).

Additional Scope Limitations

The development of this RAP 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, 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 and Terracon. Any unauthorized distribution or reuse is at Spur Energy Partners' 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 Energy Partners and all relying parties unless otherwise agreed in writing.

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District IV

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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

COMMENTS

Action 47046

COMMENTS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 47046
	Action Type: [C-141] Release Corrective Action (C-141)

COMMENTS

Created By	Comment	Comment Date
chensley	Report is closable with a signed C-141	10/5/2021

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CONDITIONS

Action 47046

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CONDITIONS

Created By	Condition	Condition Date
chensley	None	10/5/2021