Form C-141
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State of New Mexico
Oil Conservation Division

Incident ID	NAB 1908656592
District RP	1RP-5407
Facility ID	fAB 1908656217
Application ID	pAB 1908656303

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: Rob Kirk Title: General Manager, HSE & Compliance

Signature: RP Kirk Date: 03/27/2020

email: rob.kirk@solarismidstream.com Telephone: 432-203-9020

OCD Only

Received by: Cristina Eads Date: 03/30/2020

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: Cristina Eads Date: 05/05/2020

Printed Name: Cristina Eads Title: Environmental Specialist

Closure of Release Investigation and Remedial Action Plan

General Site Information:
Okeanos #1 SWD Flowback Line (NMOCD Reference #: 1RP-5407)

Site Contact:
Rob Kirk, Solaris Water Midstream
907 Tradewinds Blvd, Ste. B, Midland, Texas 79706
(432) 203-9020

Depth to Ground Water
Greater than 100 feet below grade surface

Distance to Nearest Surface Water
Laguna Gatuna (West-Central Lea County, NM), approximately 10.35 miles to the Northwest

Driving Directions
From Hwy 62, South on Lea Co. Rd. 27-A 7.8 mi, East on unimproved road 0.10 mi., North 0.20 mi. to Pipe location.

Legal Description
Unit M Section 36, T20S, R34E, Lea County, New Mexico

March 24, 2020
Terracon Project No. AR197105

Prepared for:
Solaris Water Midstream LLC
Midland, Texas

Prepared by:
Terracon Consultants, Inc.
Lubbock, Texas

March 24, 2020

Solaris Water Midstream LLC
907 Tradewinds Blvd., Suite B
Midland, Texas 79706

Attn: Mr. Rob Kirk
P: 432-203-9020
E: rob.kirk@solarismidstream.com

RE: **Closure of Release Investigation and Remedial Action Plan**
Okeanos #1 SWD Flowback Line (NMOCD Reference #: 1RP-5407)
Unit M Section 36, T20S, R32E, Lea County, New Mexico
Terracon Project No. AR197105

Dear Mr. Kirk,

Terracon Consultants, Inc. (Terracon) is pleased to submit our Closure of Release Investigation and Remedial Action Plan (RAP) for the site referenced above. The Release Investigation and RAP were 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. Based on the findigs of the release investigation assessment, Terracon recommended the following actions be taken to achieve protection of fresh water and the environment in accordance with NMOCD regulations. Terracon developed the Release Investigation and RAP in general accordance with our proposal (PAR197105) dated March 1, 2019.

- Based on the magnitude of chloride and hydrocarbon concentrations detected within the release margins to depths subject to NMOCD Reclamation requirements, approximately 2,000 cubic yards (cy) of chloride impacted material will be required to be excavated and disposed of at a permitted disposal facility under manifest.
- Following excavation to restrictive layer depths, vertical and horizontal delineation samples were collected from the base and walls of the excavation to confirm the remaining levels of soil contaminants are below the desired NMOCD remediation action level (RAL).
- During excavation of contaminated soils, restrictive features were encountered at 13 to 24 in. below grade surface (bgs). Terracon will hydro-vac the remaining residual soil sitting up on the restrictive rock layer and provide confirmation photos along with our closure report.
- Based on the anticipated depth to groundwater and pending the confirmed vertical delineation, it is anticipated that a remedial response will not be warranted within the soils at depths greater than 4 ft. bgs.

- Terracon will reseed following submittal of the closure report in accordance with *NMOCD Re-vegetation guidlines (19.15.29.13)*

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

Sincerely,
Terracon Consultants, Inc.

Joseph Guesnier	Erin Loyd, P.G. (TX)
Staff Scientist	Principal
Lubbock	Office Manager – Lubbock

Terracon

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Release Investigation and Remedial Action Plan
Okeanos #1 SWD Flowback Line Produced Water Release
Unit M Section 36, Township 20 South, Range 34 East, N.M.P.M.
Lea County, New Mexico
NMOCD Reference No. 1RP-5407
Terracon Project No. AR197105
March 24, 2020

1.0 SITE DESCRIPTION

The Site is comprised of an approximate 3-acre tract of land within the SW ¼ ,SW ¼ ,Section 36, Township 20 South, Range 34 East, N.M.P.M., Lea County, New Mexico (hereinafter, the site). The site consists primarily of undeveloped range land except for a pipeline utilized to transfer produced water to a saltwater disposal (SWD) facility operated by Solaris Water Midstream (Solaris) to the South. A Topographic Map illustrating the site location is included as Figure 1 and Chloride Concentration Maps are included as Figures 2 and 3 in Appendix A.

2.0 SCOPE OF SERVICES

Terracon's scope of services is to investigate the magnitude and extent of the documented release and develop a Remedial Action Plan (RAP) in accordance with the NMOCD requirements that detail site closure activities to be completed. This RAP addresses the February 23, 2019 release of approximately 20 barrels (bbls) of produced water which contained an estimated 5 bbls of crude originating from a malfunctioning flange on a pipeline connection of a Solaris flowback line.

3.0 INTRODUCTION AND NOTIFICATION

The following table provides detailed information regarding the February 23, 2019 produced water release at the Okeanos #1 SWD Flowback Line Site in Lea County, New Mexico:

Required Information	Site and Release information	
Responsible party Local contact	The facility is operated by Solaris Water Midstream	
	Contact: Mr. Rob Kirk	P: (469) 978-5620 E: rob.kirk@solarismidstream.com
NMOCD Notification	Notice of the release was provided to the NMOCD District 1 Hobbs Office by Rob Kirk (Solaris) on March 5, 2019.	
Facility description	The facility is Okeanos #1 SWD in Lea County, New Mexico. It is an approximate 3-acre SWD located within the SW ¼ SW ¼ Section 36, Township 20 South, Range 34 East, N.M.P.M.,	

Required Information	Site and Release information	
	approximately 22 miles northwest of Eunice, New Mexico. The site is developed as a SWD and water treatment/reuse facility.	
Time of incident	February 23, 2019, discovered at 11:00 a.m.	
Discharge event	Release of produced water containing crude oil originating from a malfunctioning flange on a pipeline connection of a Solaris transfer flowback line. The release origin occurred north of the facility pad, under development at the time of the release. The release area, near the origin of the release, was limited to an approximately 1-acre area; however, a portion of the release meandered along the surface for approximately 760 ft. to the northeast at a width ranging from approximately 35 ft. at the release point down to 8 ft. The release margins are illustrated on Figure 2 of Appendix A	
Type of discharge	The documented fluids release occurred at the surface and extends to depth identified.	
Quantity of spilled material	Total Fluids: 20 bbls	Produced Water: 20 bbls containing approximately 5 bbls of crude oil
Site characteristics	Relatively flat with drainage following the native ground surface; very gently sloping to the northeast.	
Immediate corrective actions	Pipeline was shut in, and M&J Oilfield Services scraped up and stockpiled affected materials proximate to the release origin.	

4.0 INITIAL RESPONSE ACTIONS

4.1 Source Elimination

Initial source elimination was accomplished by the Solaris foreman shutting in the leaking line and replacing the malfunctioning gasket. Solaris deployed M&J Oilfield Services (M&J), an on-site contractor, to secure the site and perform containment and site stabilization activities.

4.2 Containment and Site Stabilization

M&J scraped up and stockpiled affected soil proximate to the release origin, comprising an area measuring approximately 6,000 square feet (sf). From this area, M&J stockpiled affected materials totaling an estimated 10-cubic yards (cy). Following consolidation of these materials, M&J fenced off the area to deter inadvertent contact with the materials.

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 within 0.5 miles of the site. One registered well (CP-01334-POD1) was identified at 0.35 miles of the site with a stated depth of 733 ft. bgs. NMOSE registered wells within 1.25 miles of the site have a minimum depth to groundwater of 100 feet bgs, with a maximum reported depth of 1,025 feet bgs. Based on the review of NMOSE available documentation, the depth to groundwater at the site is anticipated to be deeper than 100 feet bgs.

5.2 Distance to Nearest Potable Water Well

Based on review of the NMOSE database, registered potable water wells were present within 0.5 miles of the site. One registered well (CP-01334-POD1) was identified at 0.35 miles of the site with a stated depth of 733 ft. bgs. Additionally, well CP-01335-POD1 was identified at 0.51 miles to the site with a stated depth of 735 ft. bgs.

5.3 Distance to Nearest Surface Water

The Laguna Gatuna (playa) is located approximately 10.4 miles northwest of the site.

5.4 Soil / Waste Characteristics

Soils at the site are mapped as Kimbrough gravely loam, dry, 0 to 3 percent slopes. This soil has a surface layer of fine- to coarse-grained sand. While the Kimbrough is comprised of fine- to coarse-grained sands at the surface restrictive, petrocalcic features, are present at 4 to 18 inches bgs, resulting in the formation being categorized with a high runoff classification.

5.5 Karst Characteristics

Terracon evaluated data from the NMOCD Public file sharepoint Site, Karst map designations in reference to the site location. The site appears to be within a low level Karst risk area. Based on site observations within the extent of the release margins the potential for Karst formations in this area are “low to no potential”. The site has a layer of solid competent rock from 18 to 80 inches bgs. The full extent of release quantities and excavation activities took place not greater than 18 inches bgs.

5.6 Groundwater Quality

Groundwater quality at the site is prodimently used for commercial oil and gas production and the nearest well (CP-01334-POD1) is being utilized for fracing operations.

6.0 REGULATORY FRAMEWORK AND RESPONSE ACTION LEVELS

Oil and gas exploration and production facilities in New Mexico are generally regulated by the New Mexico Oil Conservation Division (NMOCD). The NMOCD has issued the *Closure Criteria for Soils Impacted by a Release, June 21, 2018* and *Restoration, Reclamation, and Re-vegetation (19.15.29.13) NMAC – D (Reclamation of areas no longer in use)* as guidance documents for the remediation and reclamation of sites impacted by releases from oil and gas exploration and production activities. Following that release the NMOCD clarified the new rules with the rlease of Procedures for Implementation of the Spill Rule (19.15.29 NMAC), on September 6, 2019. Sections 6.1 and 6.2 below detail applicability of these guidance documents to the site-specific characteristics associated with the Okeanos #1 SWD Flowback Line release.

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:

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
	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*

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	20,000 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.
- Promptly ship sample to the lab for analysis following chain of custody procedures.
- All samples must be analyzed within the holding times for the laboratory analytical method specified by EPA.

Analytical Methods

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

- Chloride – EPA Method 300.0
- Total Petroleum Hydrocarbons – TPH (GRO+DRO+MRO) – EPA Method 8015M

- Benzene, toluene, ethylbenzene and total xylenes (BTEX) – EPA Method 8021B
- Benzene – EPA Method 8021B

8.0 RELEASE INVESTIGATION DATA EVALUATION

During Terracon's March 1, 2019 release investigation activities, a total of 26 soil samples were collected from the site and analyzed for BTEX, chloride, and/or TPH. Eighteen samples were collected from within the release margins; one sample was collected from the stockpile; and seven samples were collected outside of the impacted area to evaluate background concentrations.

8.1 Background Data Evaluation

Benzene was not detected above applicable laboratory SDLs in any of the soil samples analyzed outside of the release margins. No benzene concentrations exceeded the applicable NMOCD Reporting Action Limit (RAL) for benzene of 10 mg/kg, as summarized in Table 2.

Four of six background samples analyzed for Total BTEX exhibited concentrations above applicable laboratory sample detection limits (SDLs). These Total BTEX concentrations ranged from 0.00769 mg/kg in soil sample HA-9 (0.5 to 1 ft bgs) to 0.0257 mg/kg in soil sample HA-9 (Surface to 0.5 ft bgs).

Chloride was detected above applicable laboratory SDLs in each of the analyzed background samples. The chloride concentrations ranged from 34.3 mg/kg in soil sample HA-9 (Surface to 0.5 ft bgs) to 461 mg/kg in soil sample HA-9 (0.5 to 1 ft bgs).

Six of seven background samples analyzed for Total TPH exhibited concentrations above applicable SDLs. The Total TPH concentrations ranged from 17.1 mg/kg in soil sample HA-11 (Surface to 0.5 ft bgs) to 24.7 mg/kg in soil sample HA-9 (Surface to 0.5 ft bgs).

Detected concentrations for BTEX, chloride, and TPH in background samples did not exceed NMOCD Action Levels based on the criteria ranking parameters. Based on the analytical results of the background samples, NMOCD Action Levels will continue to be utilized as the applicable RALs for the site.

8.2 Release Margins Data Evaluation

8.2.1 Reclamation Assessment Data Evaluation

Benzene was detected above applicable laboratory SDLs in 7 of the 18 soil samples analyzed within the release margins. The benzene concentrations ranged from 0.00867 mg/kg in soil sample HA-1 (Surface to 0.5 ft bgs) to 0.344 mg/kg in soil sample HA-8 (Surface to 0.5 ft bgs).

The detected 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 16 of the 18 soil samples analyzed within the release margins. The Total BTEX concentrations ranged from 0.0218 mg/kg in soil sample HA-2 (0.5 to 1.0 ft bgs) to 117 mg/kg in soil sample HA-8 (Surface to 0.5 ft bgs). Two samples collected within the release margins exhibited Total BTEX concentrations above the applicable NMOCD RAL for Total BTEX of 50 mg/kg, as summarized in Table 2.

Chloride was detected above applicable laboratory SDLs in 16 of the 18 soil samples analyzed within the release margins. The chloride concentrations ranged from 271 mg/kg in soil sample HA-8 (Surface to 0.5 ft bgs) to 24,700 mg/kg in soil sample HA-1 (Surface to 0.5 ft bgs). Except for soil sample HA-3 (1.5 to 2.0 ft bgs), HA-6 (1.0 to 1.5 ft bgs) that weren't analyzed for chloride, and 271 mg/kg in soil sample HA-8 (surface to 0.5 ft bgs), the remaining soil samples analyzed within the release margins did exhibit chloride concentrations exceeding the applicable NMOCD RAL for chloride of 600 mg/kg, as summarized in Table 2.

Total TPH was detected above applicable laboratory SDLs in each of the 18 soil samples analyzed within the release margins. The Total TPH concentrations ranged from 20 mg/kg in soil sample HA-1 (0.5 to 1.0 ft bgs) to 25,100 mg/kg in soil sample HA-8 (Surface to 0.5 ft bgs). Eight samples collected within the release margins exhibited Total TPH concentrations above the applicable NMOCD RAL of 100 mg/kg for Total TPH, as summarized in Table 2.

8.2.2 Remediation Assessment Data Evaluation

At each of the soil boring locations, a soil sample at depths greater than 4 ft. bgs. were not possible due to the presence of a restrictive barrier present at 2 ft. bgs. It is not anticipated that the released fluids extended beyond this restrictive layer. The restrictive barrier at 2 ft. bgs. was subject to hydro-excavation and all present soil was removed and disposed of into the stockpiled material, as summarized in the photo log in Appendix B.

8.3 Stockpile Data Evaluation

Benzene was detected above the applicable laboratory SDL at a concentration of 0.177 mg/kg in the stockpile sample SP-1. The detected benzene concentration did not exceed the applicable NMOCD RAL for benzene of 10 mg/kg, as summarized in Table 2.

Total BTEX was detected above the applicable laboratory SDL at a concentration of 6.97 mg/kg. in the stockpile sample SP-1. The detected Total BTEX concentration did not exceed the applicable NMOCD RAL for BTEX of 50 mg/kg, as summarized in Table 2.

Chloride was detected above applicable laboratory SDL at a concentration of 24,300 mg/kg. The detected chloride concentration exceeded the applicable NMOCD RAL for chloride of 600 mg/kg, as summarized in Table 2.

Total TPH was detected above applicable laboratory SDL at a concentration of 2,710 mg/kg which exceeds the applicable NMOCD RAL for Total TPH of 100 mg/kg, as summarized in Table 1.

8.4 Release Investigation Data Summary

Based on the review of the above release investigation analytical results, the areas within the release margins exhibited concentrations of benzene, Total BTEX, chloride and Total TPH in multiple locations including the stockpiled materials generated during release response activities. Based on these exceedances above NMOCD RALs, Sections 9.0 and subsequent detail recommended remedial response actions will be implemented at the site.

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

8.5 Confirmation Margins Data Evaluation

During Terracon's confirmation sampling on June 10, 2019, July 23, 2009, September 11, 2019 and September 18, 2019, soil samples were collected around the perimeter of the open excavation post reclamation activities, and during the first two confirmation sampling events interior samples were collected from the base of the excavation. Confirmation composite samples were collected every 200 linear ft, resulting in 47 total soil samples were collected from the site and analyzed for BTEX, chloride, and/or TPH.

8.5.1 Confirmation Assessment Data Evaluation

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

Total BTEX was detected above applicable laboratory SDLs in 10 of the 47 soil samples analyzed within the release margins. The Total BTEX concentrations ranged from 0.01 mg/kg in soil sample CS-16 (surface to 0.5 ft bgs) to 0.82 mg/kg in soil sample CS-11 (surface to 0.5 ft bgs). The detected Total BTEX concentrations did not exceed the applicable NMOCD RAL for BTEX of 50 mg/kg, as summarized in Table 2.

Chloride was detected above applicable laboratory SDLs in each of the analyzed confirmation samples. The chloride concentrations ranged from 5.69 mg/kg in soil sample HS-8 (Surface to 0.5 ft bgs) to 22,900 mg/kg in soil sample CS-15 (surface to 0.5 ft bgs). Most of the detected chloride concentrations did exceed the applicable NMOCD RAL of 600 mg/kg for chloride, with the exception being the September 11, 2019 and September 18, 2019 sampling events. The initial soil samples at HS-2 (0.5 ft bgs to 1.0 ft bgs) on September 11, 2019 was the single soil sample over NMOCD RAL of 600 mg/kg, but subsequent sampling post additional remedial efforts resulted in a concentration of 110 mg/kg in HS-2.1 (0.5 ft bgs to 1.0 ft bgs) on September 18, 2019, as summarized in Table 2.

Total TPH was detected above applicable laboratory SDLs in 34 of the 47 soil samples analyzed within the confirmation soil samples. The Total TPH concentrations ranged from 0.278 mg/kg in soil sample HS-1 (0.5 to 1.0 ft bgs) to 4,290 mg/kg in soil sample CS-11 (surface to 0.5 ft bgs). Some of the detected Total TPH concentrations did exceed the applicable NMOCD RAL of 100 mg/kg for Total TPH, with the exceptions being both of the sampling events in September, as summarized in Table 2.

8.5.2 Confirmation Data Summary

Based on the review of the above confirmation analytical results, the areas surrounding the remediation margins do not exhibit concentrations above NMOCD RAL for benzene, Total BTEX, chloride and Total TPH. Based on these results below NMOCD RALs, Sections 9.0 and subsequent detail recommended closure of response actions to be implemented at the site. Terracon recommend the restoration of the above mentioned site on September 23, 2019.

9.0 SOIL RECLAMATION AND REMEDIATION

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

9.1 Reclamation Response Objectives

Based on the magnitude of chloride concentrations detected within the release margins to depths subject to NMOCD Reclamation requirements, approximately 2,000 cy of chloride-impacted material was excavated and disposed at a permitted disposal facility under manifest.

9.2 Remediation Response Objectives

Following excavation to recommended Reclamation depths, horizontal delineation samples were collected from the base and walls of the excavation to confirm the remaining levels of soil

contaminants are below the desired NMOCD RALs. Based on the proximity of the analyzed samples to this restrictive layer and the magnitude of the concentrations being elevated above 600 mg/kg but below 20,000 mg/kg, On the recommendation from Mike Bratcher with the NMOCD District 2 office in Artesia, NM, Terracon hydro-excavated the base of the excavation, hydro-vacing the restrictive feature to wash out the residual presence of chlorides at this restrictive zone to ensure that concentrations are not elevated at this restrictive interphase. Terracon included photo logs of the hydro-vacing activities with this closure report.

Based on the anticipated depth to groundwater, it was anticipated that a remedial response would not be warranted within the soils at depths greater than 2 ft. bgs.

9.3 Soil Management

The selected method of soil management was removal and disposal at a NMOCD-approved facility. Excavated soils were transported by truck (20 cubic yard capacity) and disposed at either the R360 Disposal Facility located in Halfway, New Mexico based on landfill approvals.

10.0 TERMINATION OF REMEDIAL ACTIONS, FINAL CLOSURE AND REPORTING

10.1 Termination of Reclamation and Remedial Actions

Reclamation and remedial actions at the Okeanos #1 SWD were terminated when the confirmation samples indicated that the above objectives had been completed within the reclamation and remedial depth designations. The intent of the reclamation and remedial approaches were to achieve compliance with NMOCD regulatory objectives in ensuring that any remaining contaminants would not pose a threat to present or foreseeable beneficial use of fresh water, the public health and the environment.

10.2 Final Closure

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

10.3 Final Report

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

APPENDIX A – FIGURES AND TABLES

Figure 1 – Topographic Map

Figure 2 – Site Diagram

Figure 3 – Contamination Concentration Map

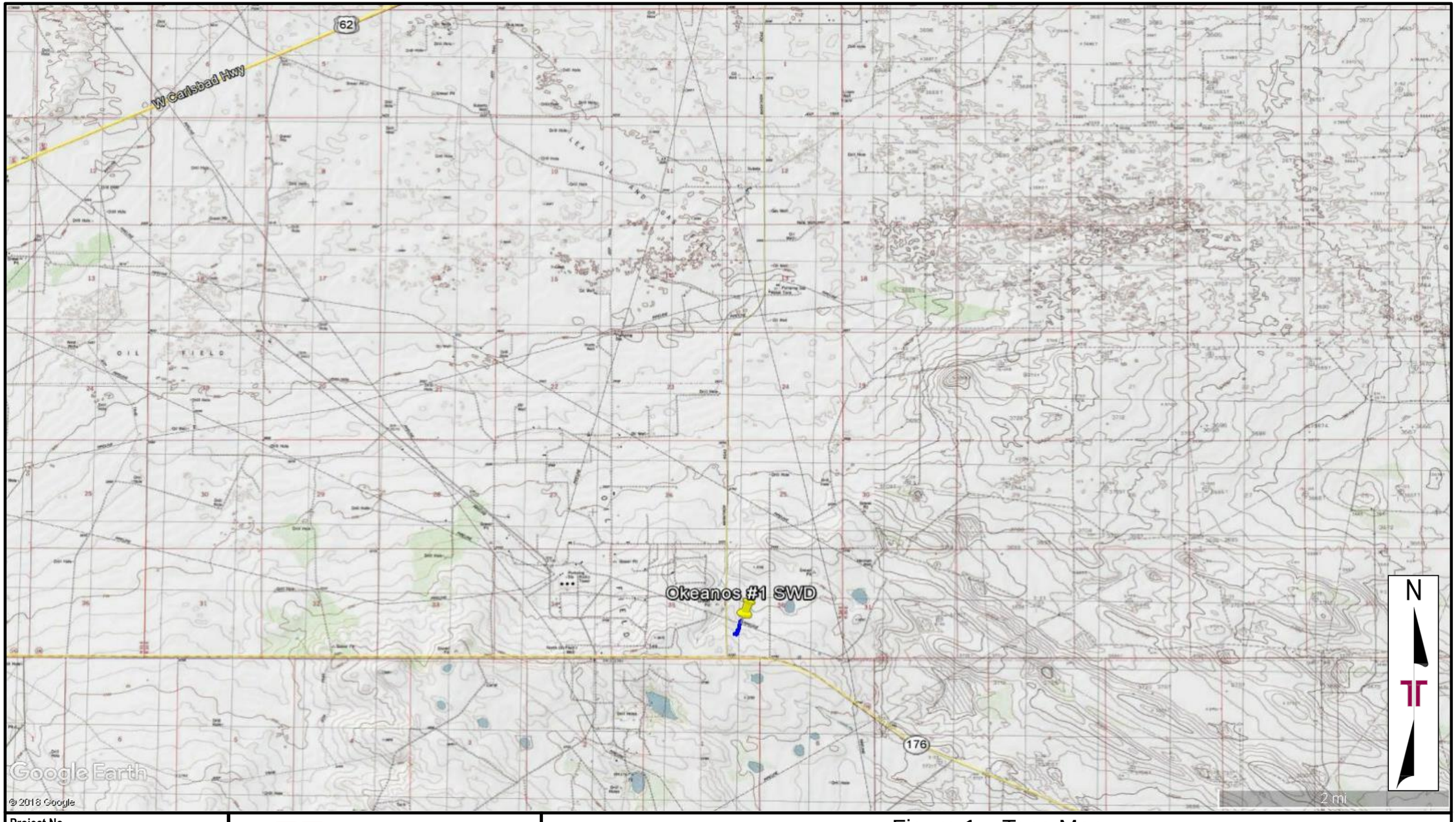
Figure 4 – Initial Remediation Concentration Map

Figure 5 – Confirmation Concentration Map

Figure 6 – NMOSE POD Location Map

Figure 7 – Cave Karst Public UCP

Table 2 – Soil Sample Analytical Results



Project No.	AR197105
Scale:	As Shown
Source:	USGS
Date:	2014

Terracon
Consulting Engineers & Scientists
5827 50th St. Suite 1 Lubbock, Texas 79424
PH. (806) 300-0104 FAX. (806) 797 0947

Figure 1 – Topo Map

Okeanos #1 SWD
32.525430°, -103.521001°
Lea County, New Mexico

Project No.	AR197105
Scale:	As Shown
Source:	Google Earth
Date:	11/2/2017

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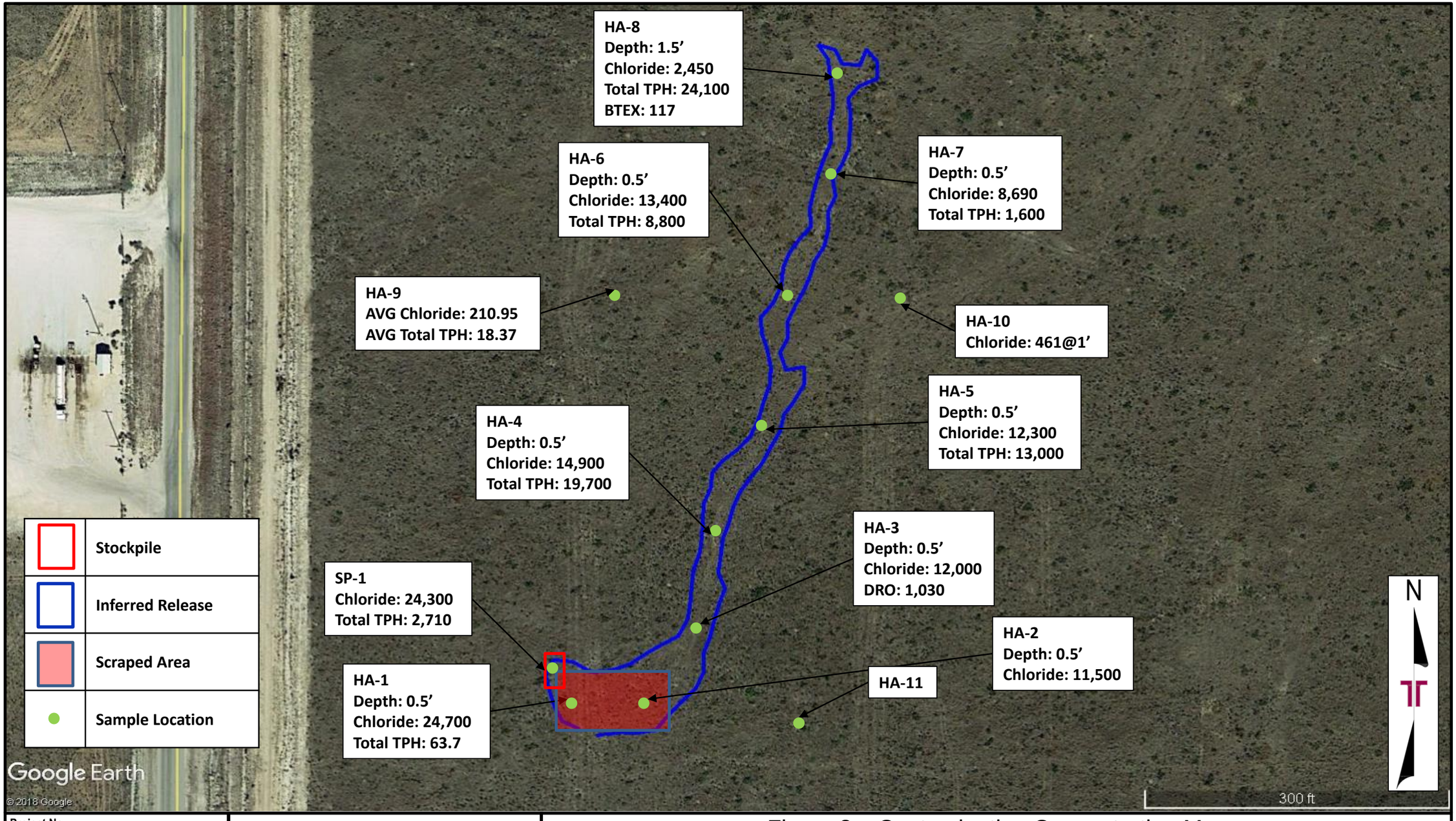
5827 50th St. Suite 1 Lubbock, Texas 79424
PH. (806) 300-0104 FAX. (806) 797 0947

Figure 2 – Site Map

Okeanos #1 SWD
32.525430°, -103.521001°
Lea County, New Mexico



Project No.	AR197105
Scale:	As Shown
Source:	Google Earth
Date:	11/2/2017

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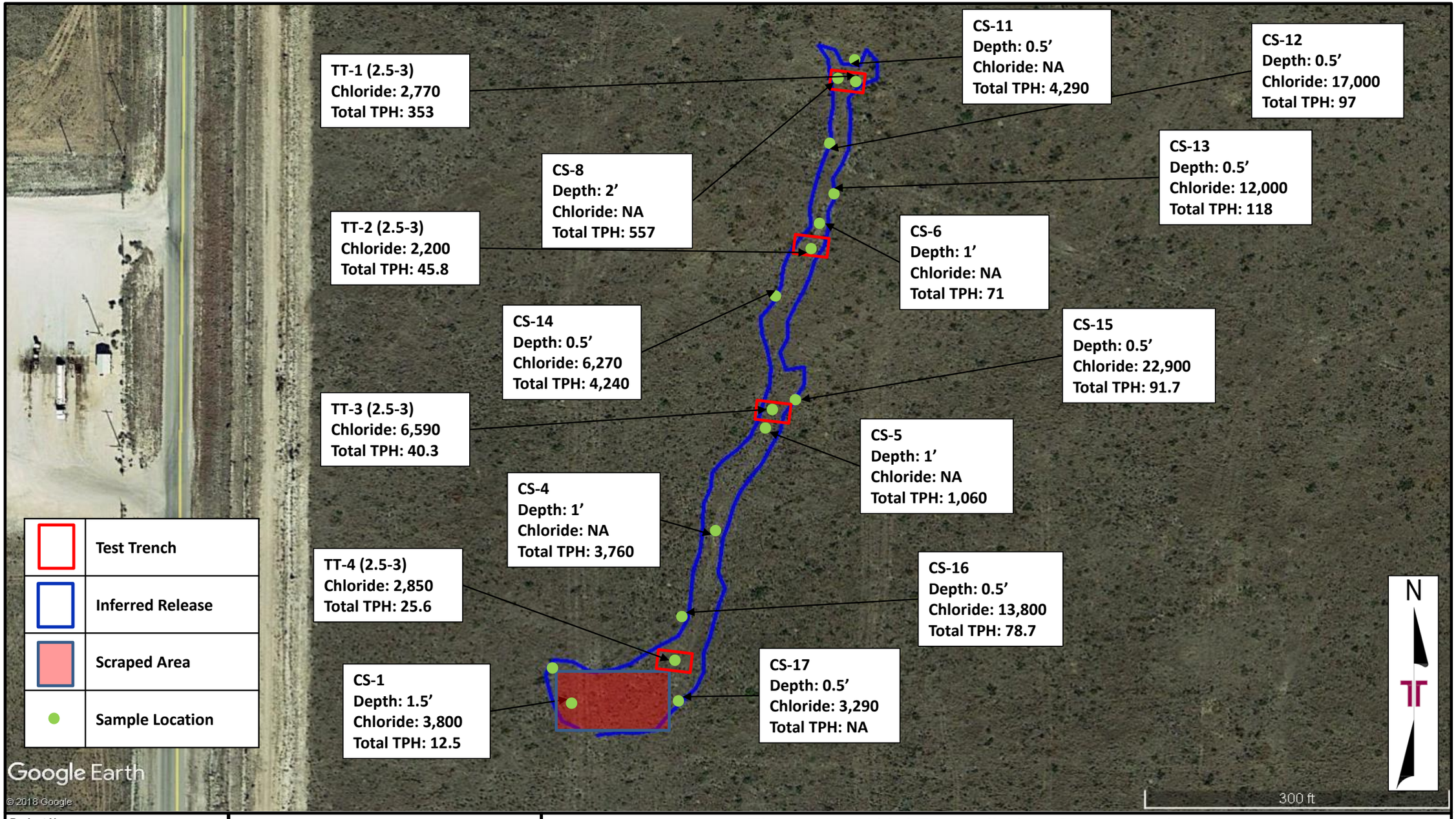
Figure 3 – Contamination Concentration Map

Okeanos #1 SWD
32.525430°, -103.521001°
Lea County, New Mexico



Project No.	AR197105
Scale:	As Shown
Source:	Google Earth
Date:	11/2/2017

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Consulting Engineers & Scientists
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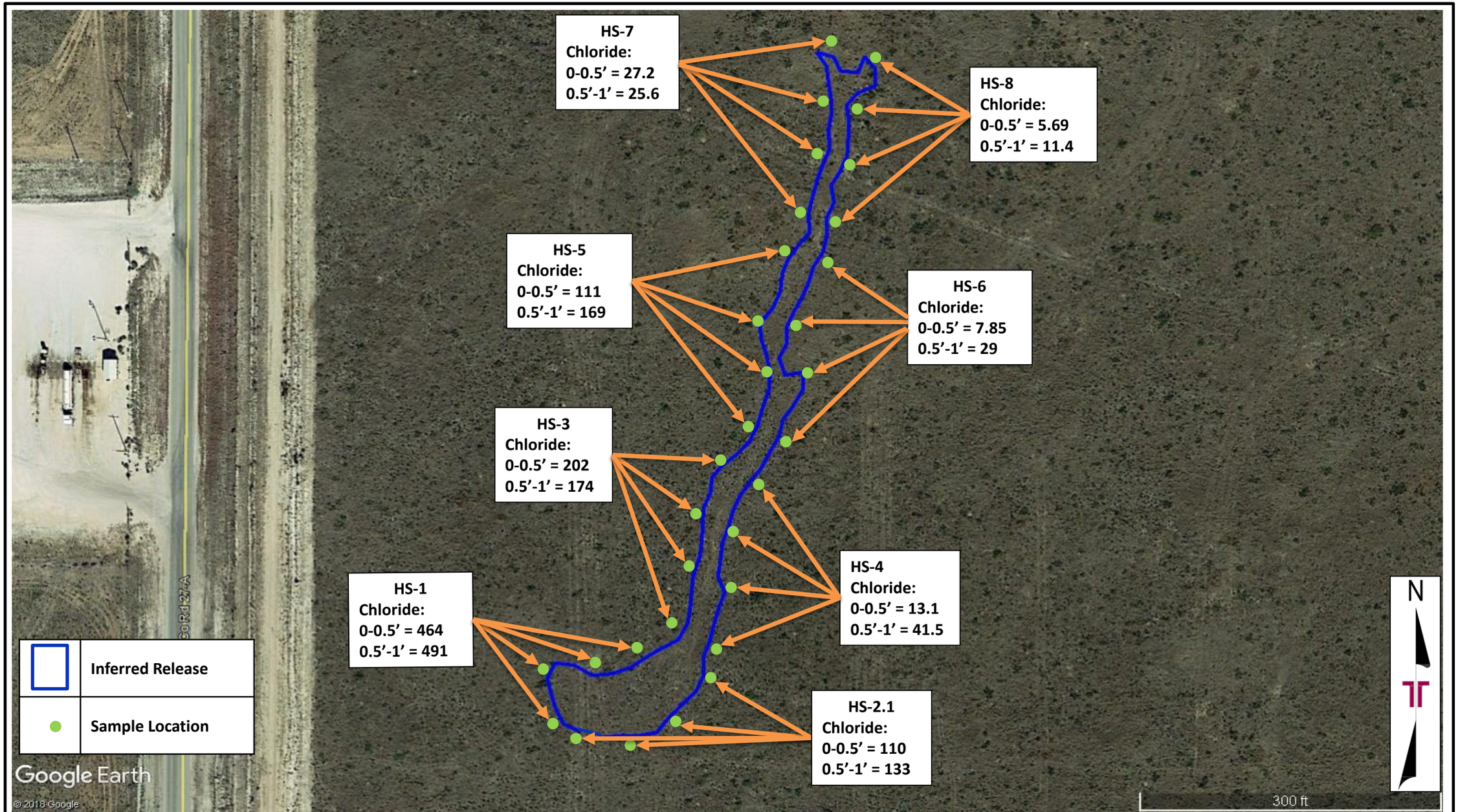
PH. (806) 300-0104 FAX. (806) 797 0947

Figure 4 – Initial Remediation Concentration Map

Okeanos #1 SWD
32.525430°, -103.521001°
Lea County, New Mexico



Project No.	AR197105
Scale:	As Shown
Source:	Google Earth
Date:	11/2/2017

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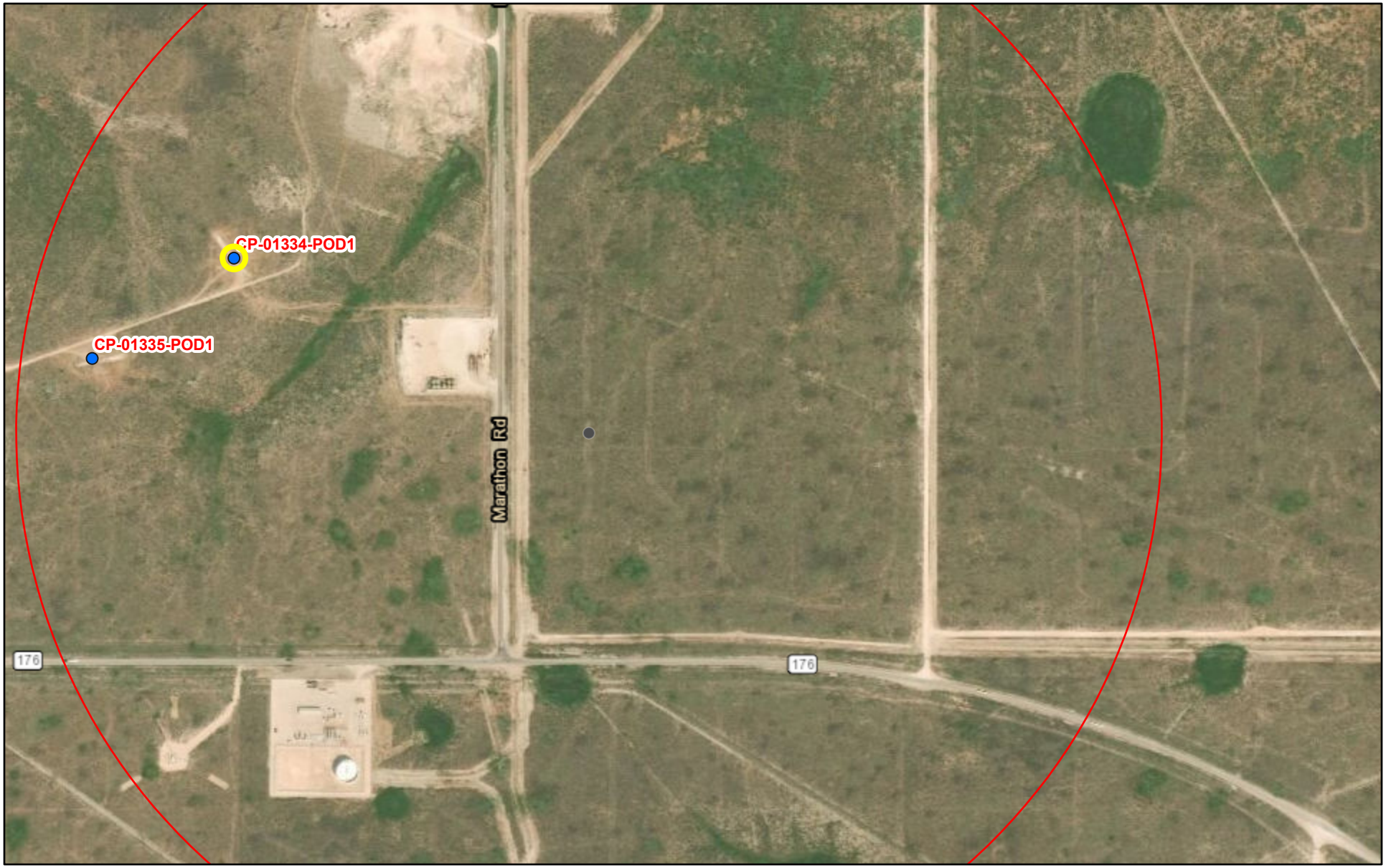
Figure 5 – Composite Remediation Map

Okeanos #1 SWD
32.525430°, -103.521001°
Lea County, New Mexico

Figure 6 - NMOSE POD Location Map



9/10/2019 10:32:18 AM

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

OSE District Boundary

GIS WATERS PODs

Active

OSE Conveyances

Acequia

Acequia Tunnel

Arroyo

Canal

Channel

Closed Drain

Community Ditch

Connector

Creek

Culvert

Ditch

Diversion Weir

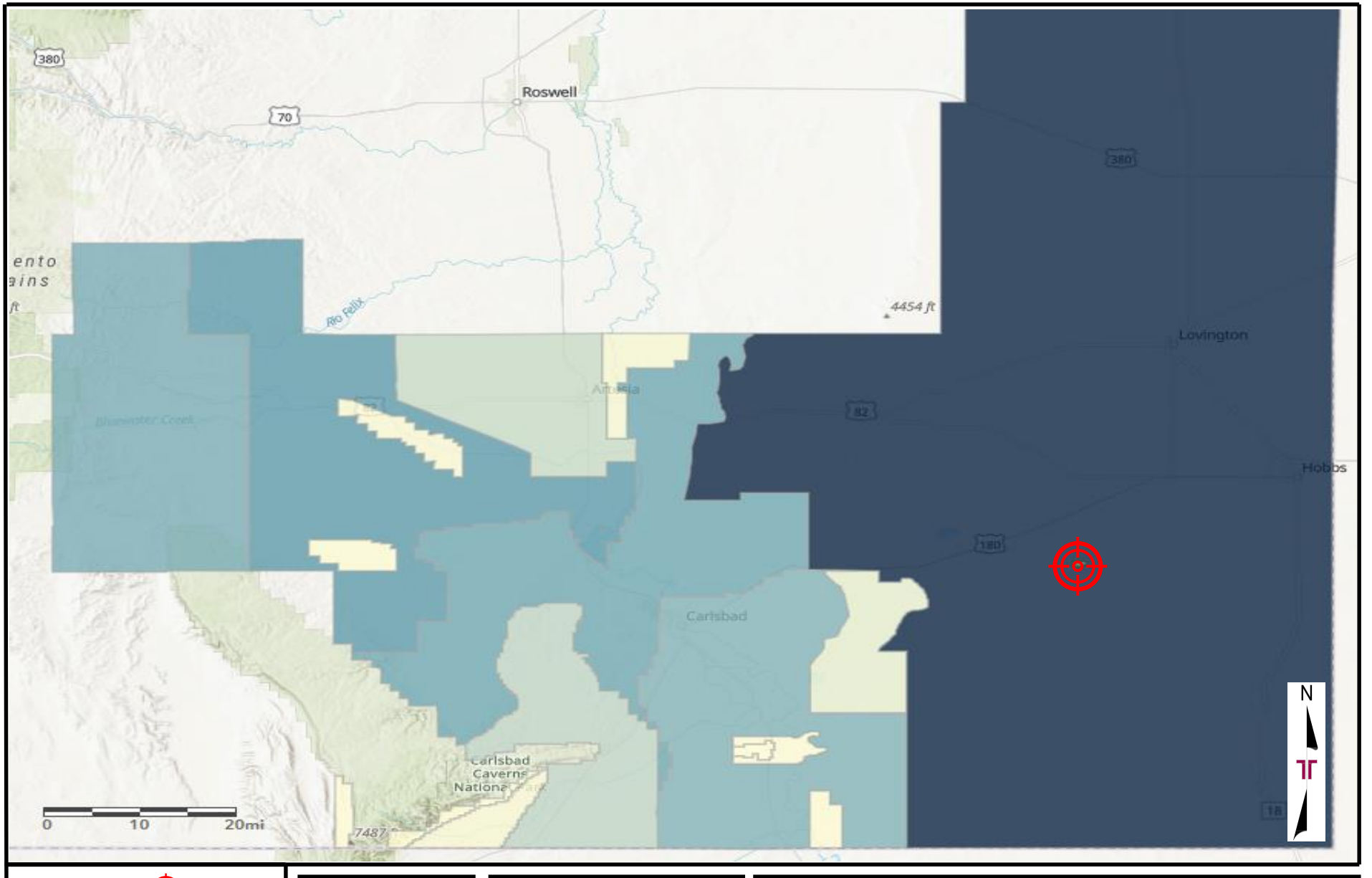
Drain

Feeder

Esri, HERE, Garmin, (c) OpenStreetMap contributors, Esri, HERE, Garmin,

Printed from Public Web Map

Unofficial Map from OSE POD Locations Web Application



Project No.	AR197105
Scale:	As Shown
Source:	ESRI
Date:	09/26/2019

Terracon
Consulting Engineers & Scientists
5827 50th Street, Suite 1 Lubbock, Texas 79424
PH. (806) 300 - 0140 FAX. (806) 797 - 0947

Figure 7 - Cave Karst Public UCP

Okeanos

32.525430, -103.521001

Lea County, New Mexico

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS - BTEX[1], Chloride[2], and TPH[3]
Okeanos #1 SWD
Solaris Incident No.
Terracon Project No. AR197105

Sample I.D.	Sample Depth (bgs)	Sample Type	Sample Date	Soil Status	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
							GRO	DRO	MRO	TOTAL
Stockpile Sample										
SP-1	COMP	Grab	03/01/19		Benzene - 0.177 Toluene - 1.32 Ethylbenzene - 1.19 Total Xylenes - 4.28 Total BTEX - 6.97	**24,300**	252	**2,130**	325	**2,710**
Release Margin Samples										
HA-1	0 - 0.5'	Grab	03/01/19	Excavated	Benzene - 0.00867 Toluene - 0.026 Ethylbenzene - 0.0173 Total Xylenes - 0.0451 Total BTEX - 0.0971	**24,700**	11.9	51.8	<8.11	63.7
	0.5 - 1'	Grab	03/01/19	Excavated	Benzene - <0.00879 Toluene - <0.00455 Ethylbenzene - <0.00599 Total Xylenes - <0.00663 Total BTEX - <0.00455	**18,700**	<7.91	20	<8.1	20
HA-2	0 - 0.5'	Grab	03/01/19	Excavated	Benzene - 0.0183 Toluene - 0.28 Ethylbenzene - 0.756 Total Xylenes - 2.61 Total BTEX - 3.66	**11,500**	<7.98	27.9	<8.1	27.9
	0.5 - 1'	Grab	03/01/19	Excavated	Benzene - <0.00825 Toluene - <0.00427 Ethylbenzene - <0.00562 Total Xylenes - 0.0218 Total BTEX - 0.0218	**3,430**	<8.0	32.5	<8.13	32.5
HA-3	0 - 0.5'	Grab	03/01/19	Excavated	Benzene - <0.00832 Toluene - 0.0773 Ethylbenzene - 0.0866 Total Xylenes - 0.474 Total BTEX - 0.638	**12,000**	28.8	317	42.1	388
	0.5 - 1'	Grab	03/01/19	Excavated	Benzene - <0.00814 Toluene - 0.168 Ethylbenzene - 0.492 Total Xylenes - 1.94 Total BTEX - 2.6	**8,090**	87.3	**1,030**	159	1,280
	1.5 - 2'	Grab	03/01/19	Excavated	BTEX - NA	NA	29.0	274	40.8	344
HA-4	0 - 0.5'	Grab	03/01/19	Excavated	Benzene - 0.199 Toluene - 2.87 Ethylbenzene - 3.86 Total Xylenes - 17.2 Total BTEX - 24.2	**8,840**	**1,930**	**15,800**	1,980	**19,700**
	0.5 - 1'	Grab	03/01/19	Excavated	Benzene - 0.0253 Toluene - 0.373 Ethylbenzene - 1.07 Total Xylenes - 3.84 Total BTEX - 5.31	**14,900**	336	**3,890**	469	**4,700**
HA-5 (0-.5)	0 - 0.5'	Grab	03/01/19		Benzene - <0.0409 Toluene - 0.534 Ethylbenzene - 2.52 Total Xylenes - 10.3 Total BTEX - 13.3	**12,100**	**1,310**	**10,500**	1,200	**13,000**
HA-6	0 - 0.5'	Grab	03/01/19		Benzene - <0.0174 Toluene - 0.0925 Ethylbenzene - 0.817 Total Xylenes - 1.74 Total BTEX - 2.65	**12,300**	430	**7,330**	**1,040**	**8,800**
	0.5 - 1'	Grab	03/01/19		Benzene - <0.0165 Toluene - 0.0729 Ethylbenzene - 0.699 Total Xylenes - 1.41 Total BTEX - 2.18	**13,400**	217	**3,450**	390	**4,060**
	1 - 1.5'	Grab	03/01/19		Benzene - <0.00834 Toluene - <0.00432 Ethylbenzene - 0.299 Total Xylenes - 0.764 Total BTEX - 0.952	NA	64	**1,210**	171	1,450
New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards*					**Benzene - 10** **Toluene - N/A** **Ethylbenzene - N/A** **Total Xylenes - N/A** **Total BTEX - 50**	**600**	**N/A**			**100**

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B
2. Chloride = Chloride analyzed by EPA Method 300.
3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/ORO)
* = 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 denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards.

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS - BTEX[1], Chloride[2], and TPH[3]
Okeanos #1 SWD
Solaris Incident No.
Terracon Project No. AR197105

Sample I.D.	Sample Depth (bgs)	Sample Type	Sample Date	Soil Status	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
							GRO	DRO	MRO	TOTAL
Release Margin Samples										
HA-7	0 - 0.5'	Grab	03/01/19		Benzene - <0.00823 Toluene - 0.0164 Ethylbenzene - 0.135 Total Xylenes - 0.545 Total BTEX - 0.696	**8,690**	82.3	**1,350**	170	1,600
	0.5 - 1'	Grab	03/01/19		Benzene - <0.00876 Toluene - 0.0271 Ethylbenzene - 0.163 Total Xylenes - 0.20 Total BTEX - 0.39	**3,380**	37	705	90.2	832
HA-8	0 - 0.5'	Grab	03/01/19		Benzene - 0.344 Toluene - 15.8 Ethylbenzene - 19.3 Total Xylenes - 81.9 Total BTEX - **117**	271	**4,960**	**18,100**	1,990	**25,100**
	0.5 - 1'	Grab	03/01/19		Benzene - 0.0391 Toluene - 2.75 Ethylbenzene - 4.41 Total Xylenes - 19 Total BTEX - 26.2	**2,450**	**1,260**	**4,960**	477	**6,700**
	1.5 - 2'	Grab	03/01/19		Benzene - 0.105 Toluene - 6.93 Ethylbenzene - 9.21 Total Xylenes - 41.7 **Total BTEX - 57.9**	**2,330**	**3,390**	**18,700**	2,030	**24,100**
Background Samples										
HA-9	0 - 0.5'	Grab	03/01/19	In-Situ	Benzene - <0.00831 Toluene - 0.00919 Ethylbenzene - <0.00566 Total Xylenes - 0.0165 Total BTEX - 0.0257	34.3	<7.98	14.3	10.4	24.7
	0.5 - 1'	Grab	03/01/19	In-Situ	Benzene - <0.00869 Toluene - 0.00769 Ethylbenzene - <0.00592 Total Xylenes - <0.00656 Total BTEX - 0.00769	461	<7.99	<8.11	<8.11	<7.99
HA-10	0 - 0.5'	Grab	03/01/19	In-Situ	Benzene - <0.00904 Toluene - <0.00468 Ethylbenzene - <0.00616 Total Xylenes - <0.00682 Total BTEX - <0.00468	392	<7.97	16.9	<18.1	16.9
	0.5 -1'	Grab	03/01/19	In-Situ	Benzene - <0.00853 Toluene - 0.0113 Ethylbenzene - <0.00581 Total Xylenes - <0.00643 Total BTEX - 0.0113	254	<7.97	17.7	<8.1	17.7
HA-11	0 -.5'	Grab	03/01/19	In-Situ	Total BTEX - NA	NA	<7.99	17.1	<8.12	17.1
	0.5 -1'	Grab	03/01/19	In-Situ	Benzene - <0.00869 Toluene - <0.00450 Ethylbenzene - <0.00592 Total Xylenes - <0.00656 Total BTEX - <0.00450	58.8	<8.00	20.9	<8.13	20.9
	1.5 - 2'	Grab	03/01/19	In-Situ	Benzene - <0.00835 Toluene - 0.0129 Ethylbenzene - <0.00569 Total Xylenes - <0.00630 Total BTEX - 0.0129	65.8	<7.99	22.5	<8.11	22.5
Confirmation Sampling										
CS-1	1.5 - 2'	Grab	06/10/19	Excavated	Benzene - <0.00904 Toluene - <0.00468 Ethylbenzene - <0.00616 Total Xylenes - <0.00682 Total BTEX - <0.00468	**3,800**	<9.98	12.5	<9.98	12.5
CS-4	0.5 - 1'	Grab	06/10/19	Excavated	Benzene - <0.00904 Toluene - 0.012 Ethylbenzene - <0.00616 Total Xylenes - 0.014 Total BTEX - 0.026	**6,970**	18.7	3,160	586	**3,760**
New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards*					**Benzene - 10** **Toluene - N/A** **Ethylbenzene - N/A** **Total Xylenes - N/A** **Total BTEX - 50**	**600**	**N/A**			**100**

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B
2. Chloride = Chloride analyzed by EPA Method 300.
3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/ORO)
* = 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
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Bold denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards.

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS - BTEX[1], Chloride[2], and TPH[3]
Okeanos #1 SWD
Solaris Incident No.
Terracon Project No. AR197105

Sample I.D.	Sample Depth (bgs)	Sample Type	Sample Date	Soil Status	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
							GRO	DRO	MRO	TOTAL
Confirmation Sampling										
CS-5	0.5 - 1'	Grab	06/10/19	Excavated	Benzene - <0.00904 Toluene - <0.00468 Ethylbenzene - <0.00616 Total Xylenes - 0.02 Total BTEX - 0.02	**7,200**	15	837	211	**1,060**
CS-6	0 - 0.5'	Grab	06/10/19	Excavated	Benzene - <0.00904 Toluene - 0.014 Ethylbenzene - <0.00616 Total Xylenes - 0.03 Total BTEX - 0.044	**13,900**	10.5	41.9	18.6	71
CS-8	2 - 2.5'	Grab	06/10/19	Excavated	Benzene - <0.00904 Toluene - 0.008 Ethylbenzene - <0.00616 Total Xylenes - 0.098 Total BTEX - 0.106	**10,500**	27.6	313	216	**557**
CS-11	0 - 0.5'	Grab	06/10/19	Excavated	Benzene - <0.0904 Toluene - 0.08 Ethylbenzene - <0.0616 Total Xylenes - 0.74 Total BTEX - 0.82	372	27	3,480	785	**4,290**
CS-12	0 - 0.5'	Grab	06/10/19	Excavated	Benzene - <0.00904 Toluene - 0.01 Ethylbenzene - <0.00616 Total Xylenes - 0.098 Total BTEX - 0.108	**17,000**	<9.99	32.8	64.2	97
CS-13	0 - 0.5'	Grab	06/10/19	Excavated	Benzene - <0.00904 Toluene - <0.00468 Ethylbenzene - <0.00616 Total Xylenes - 0.05 Total BTEX - 0.05	**12,000**	<9.91	65.5	52.9	**118**
CS-14	0 - 0.5'	Grab	06/10/19	Excavated	Benzene - <0.00904 Toluene - <0.00468 Ethylbenzene - <0.00616 Total Xylenes - 0.02 Total BTEX - 0.02	**6,270**	21	3,480	740	**4,240**
CS-15	0 - 0.5'	Grab	06/10/19	Excavated	Benzene - <0.00904 Toluene - <0.00468 Ethylbenzene - <0.00616 Total Xylenes - <0.00682 Total BTEX - <0.00468	**22,900**	<9.95	41.8	49.9	91.7
CS-16	0 - 0.5'	Grab	06/10/19	Excavated	Benzene - <0.00904 Toluene - <0.00468 Ethylbenzene - <0.00616 Total Xylenes - 0.01 Total BTEX - 0.01	**13,800**	<9.90	54.4	24.3	78.7
CS-17	0 - 0.5'	Grab	06/10/19	Excavated	Benzene - <0.00904 Toluene - <0.00468 Ethylbenzene - <0.00616 Total Xylenes - <0.00682 Total BTEX - <0.00468	**3,290**	NA			
	0.5 - 1'	Grab	06/10/19	Excavated	Total BTEX - NA	NA	<9.92	<9.92	<9.92	<9.92
HA-4.1	0 - 0.5'	Grab	06/20/19	Excavated	Total BTEX - NA	**3,670**	<49.5	1,160	180	**1,340**
	0.5 - 1'	Grab	06/20/19	Excavated	Total BTEX - NA	**14,200**	<49.5	<49.5	<49.5	<49.5
New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards*					**Benzene - 10** **Toluene - N/A** **Ethylbenzene - N/A** **Total Xylenes - N/A** **Total BTEX - 50**	**600**	**N/A**			**100**

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B
2. Chloride = Chloride analyzed by EPA Method 300.
3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/ORO)
* = 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 denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards.

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Okeanos #1 SWD
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Terracon Project No. AR197105

Sample I.D.	Sample Depth (bgs)	Sample Type	Sample Date	Soil Status	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
							GRO	DRO	MRO	TOTAL
Confirmation Sampling										
HA-11.1	0 - 0.5'	Grab	06/20/19	Excavated	Total BTEX - NA	**1,180**	<49.5	<49.5	<49.5	<49.5
	0.5 - 1'	Grab	06/20/19	Excavated	Total BTEX - NA	206	<49.9	53.5	<49.9	53.5
HA-13.1	0 - 0.5'	Grab	06/20/19	Excavated	Total BTEX - NA	**2,190**	NA			
	0.5 - 1'	Grab	06/20/19	Excavated	Total BTEX - NA	**3,200**	NA			
HA-14.1	0 - 0.5'	Grab	06/20/19	Excavated	Total BTEX - NA	**7,680**	<49.8	93.3	<4938	93.3
	0.5 - 1'	Grab	06/20/19	Excavated	Total BTEX - NA	**2,610**	<49.6	90.7	<49.6	90.7
HA-15.1	0 - 0.5'	Grab	06/20/19	Excavated	Total BTEX - NA	**6,110**	NA			
	0.5 - 1'	Grab	06/20/19	Excavated	Total BTEX - NA	**5,460**	NA			
HA-17.1	0 - 0.5'	Grab	06/20/19	Excavated	Total BTEX - NA	**20,700**	<49.7	80.9	<49.7	80.9
	0.5 - 1'	Grab	06/20/19	Excavated	Total BTEX - NA	**15,700**	<49.6	<49.6	<49.6	<49.6
TT-1	2.5 - 3'	Grab	07/23/19	Excavated	Benzene - <0.00829 Toluene - <0.00429 Ethylbenzene - <0.00565 Total Xylenes - <0.00626 Total BTEX - <0.00429	**2,770**	<9.95	272	80.8	**353**
TT-2	2.5 - 3'	Grab	07/23/19	Excavated	Benzene - <0.00895 Toluene - <0.00463 Ethylbenzene - <0.00610 Total Xylenes - <0.00675 Total BTEX - <0.00463	**2,200**	<10	31.4	14.4	45.8
TT-3	2.5 - 3'	Grab	07/23/19	Excavated	Benzene - <0.00899 Toluene - <0.00465 Ethylbenzene - <0.00612 Total Xylenes - <0.00678 Total BTEX - <0.00465	**6,590**	<9.98	29.4	10.9	40.3
TT-4	2.5 - 3'	Grab	07/23/19	Excavated	Benzene - <0.00826 Toluene - <0.00428 Ethylbenzene - <0.00563 Total Xylenes - <0.00623 Total BTEX - <0.00428	**2,850**	<9.97	25.6	<9.97	25.6
New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards*					**Benzene - 10** **Toluene - N/A** **Ethylbenzene - N/A** **Total Xylenes - N/A** **Total BTEX - 50**	**600**	**N/A**			**100**

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B
2. Chloride = Chloride analyzed by EPA Method 300.
3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/ORO)
* = 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 denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards.

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Okeanos #1 SWD
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Terracon Project No. AR197105

Sample I.D.	Sample Depth (bgs)	Sample Type	Sample Date	Soil Status	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
							GRO	DRO	MRO	TOTAL
Confirmation Sampling										
HS-1	0 - 0.5'	Composite	09/11/19	In-Situ	Benzene - <0.00873 Toluene - <0.00452 Ethylbenzene - <0.00595 Total Xylenes - 0.0116 Total BTEX - 0.0116	464	0.496	<7.53	N/A	0.496
	0.5 - 1'	Composite	09/11/19	In-Situ	Benzene - <0.0087 Toluene - <0.00433 Ethylbenzene - <0.00570 Total Xylenes - <0.00631 Total BTEX - <0.00433	491	0.278	<7.51	N/A	0.278
HS-2	0 - 0.5'	Composite	09/11/19	Excavated	Benzene - <0.00876 Toluene - <0.00453 Ethylbenzene - <0.00597 Total Xylenes - <0.00661 Total BTEX - <0.00453	47.4	<0.263	11.3	N/A	11.3
	0.5 - 1'	Composite	09/11/19	Excavated	Benzene - <0.00829 Toluene - <0.00429 Ethylbenzene - <0.00565 Total Xylenes - <0.00626 Total BTEX - <0.00429	**1,410**	<0.249	13.2	N/A	13.2
HS-2.1	0.5 - 1'	Composite	09/18/19	In-Situ	Benzene - <0.000206 Toluene - <0.000996 Ethylbenzene - <0.000334 Total Xylenes - <0.000435 Total BTEX - <0.000206	110	<2.50	5.90	N/A	21.4
	1 - 1.5'	Composite	09/18/19	In-Situ	Benzene - <0.000206 Toluene - <0.000994 Ethylbenzene - <0.000334 Total Xylenes - <0.000434 Total BTEX - <0.000206	133	<2.49	7.21	N/A	26.21
HS-3	0 - 0.5'	Composite	09/11/19	In-Situ	Benzene - <0.00828 Toluene - <0.0029 Ethylbenzene - <0.00564 Total Xylenes - <0.00625 Total BTEX - <0.00429	202	<0.248	18.8	N/A	18.8
	0.5 - 1'	Composite	09/11/19	In-Situ	Benzene - <0.00854 Toluene - <0.00422 Ethylbenzene - <0.00582 Total Xylenes - <0.00645 Total BTEX - <0.00442	174	<0.25	14.1	N/A	14.1
HS-4	0 - 0.5'	Composite	09/11/19	In-Situ	Benzene - <0.00871 Toluene - <0.00451 Ethylbenzene - <0.00593 Total Xylenes - <0.00657 Total BTEX - <0.00451	13.1	<0.261	<7.45	N/A	<0.261
	0.5 - 1'	Composite	09/11/19	In-Situ	Benzene - <0.00770 Toluene - <0.00399 Ethylbenzene - <0.00525 Total Xylenes - <0.00581 Total BTEX - <0.00399	41.5	<0.231	<7.47	N/A	<0.231
HS-5	0 - 0.5'	Composite	09/11/19	In-Situ	Benzene - <0.00890 Toluene - <0.00461 Ethylbenzene - <0.00606 Total Xylenes - <0.00671 Total BTEX - <0.00461	111	<0.267	19.9	N/A	19.9
	0.5-1'	Composite	09/11/19	In-Situ	Benzene - <0.00831 Toluene - <0.00430 Ethylbenzene - <0.00566 Total Xylenes - <0.00627 Total BTEX - <0.00430	169	<0.249	<7.53	N/A	<0.249
HS-6	0 - 0.5'	Composite	09/11/19	In-Situ	Benzene - <0.00906 Toluene - <0.00469 Ethylbenzene - <0.00617 Total Xylenes - <0.00683 Total BTEX - <0.00469	7.85	<0.272	12.5	N/A	12.5
	0.5 - 1'	Composite	09/11/19	In-Situ	Benzene - <0.00823 Toluene - <0.00426 Ethylbenzene - <0.00561 Total Xylenes - <0.00621 Total BTEX - <0.00426	29	<0.247	<7.55	N/A	<0.247
HS-7	0 - 0.5'	Composite	09/11/19	In-Situ	Benzene - <0.00897 Toluene - <0.00464 Ethylbenzene - <0.00611 Total Xylenes - <0.00677 Total BTEX - <0.00464	27.2	<0.269	8.09	N/A	8.09
	0.5 - 1'	Composite	09/11/19	In-Situ	Benzene - <0.00826 Toluene - <0.00428 Ethylbenzene - <0.00563 Total Xylenes - <0.00623 Total BTEX - <0.00428	25.6	<0.248	23.2	N/A	23.2
HS-8	0 - 0.5'	Composite	09/11/19	In-Situ	Benzene - <0.00811 Toluene - <0.00420 Ethylbenzene - <0.00553 Total Xylenes - <0.00612 Total BTEX - <0.00420	5.69	<0.243	15.4	N/A	15.4
	0.5 - 1'	Composite	09/11/19	In-Situ	Benzene - <0.00899 Toluene - <0.00465 Ethylbenzene - <0.00612 Total Xylenes - <0.00678 Total BTEX - <0.00465	11.4	<0.269	15.1	N/A	15.1
New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards*					**Benzene - 10** **Toluene - N/A** **Ethylbenzene - N/A** **Total Xylenes - N/A** **Total BTEX - 50**	**600**	**N/A**			**100**

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B
2. Chloride = Chloride analyzed by EPA Method 300.
3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/ORO)
* = 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 denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards.

APPENDIX B – PHOTOGRAPHIC LOG

PHOTO 1: View of Release Origin, facing Northeast. 2/25/2019 / **TIME:** 2:11PM / **GPS:** 32.5253 -103.5211

PHOTO 2: View of Release Origin / Stockpile, Facing North. 2/25/2019 **/ TIME:** 2:11PM / **GPS:** 32.5253 -103.5211

PHOTO 3: View of HA-1, Facing West. 3/01/2019 / **TIME:** 11:29AM / **GPS:** 32.5254 -103.5211

PHOTO 4: View of HA-2, Facing East. 3/01/2019 / **TIME:** 11:36AM / **GPS:** 32.5254 -103.5209

PHOTO 5: View of HA-8, Facing South. 3/01/2019 / **TIME:** 11:48AM / **GPS:** 32.5273 -103.5203

PHOTO 6: View of HA-7, Facing South. 3/01/2019 / **TIME:** 11:59AM / **GPS:** 32.5269 -103.5203

PHOTO 7: View of HA-6, Facing South. 3/01/2019 / **TIME:** 12:13PM / **GPS:** 32.5267 -103.5204

PHOTO 8: View of HA-5, Facing South. 3/01/2019 / **TIME:** 12:26PM / **GPS:** 32.5264 -103.5204

PHOTO 9: View of HA-4, Facing South. 3/01/2019 / **TIME:** 12:42PM / **GPS:** 32.5261 -103.5206

PHOTO 10: View of HA-3, Facing South. 3/01/2019 / **TIME:** 1:02PM / **GPS:** 32.5258 -103.5206

PHOTO 11: View of HA-11, Facing West. 3/01/2019 / **TIME:** 1:27PM / **GPS:** 32.5255 -103.5202

PHOTO 12: View of HA-10, Facing Southwest. 3/01/2019 / **TIME:** 1:37PM / **GPS:** 32.5260 -103.5201

PHOTO 13: View of HA-9, Facing South. 3/01/2019 / **TIME:** 1:45PM / **GPS:** 32.5261 -103.5210

PHOTO 14: View of Remediation Activity, Facing West. 6/04/2019 / **TIME:** 10:01AM / **GPS:** 32.5253 -103.5207

PHOTO 15: View of Remediation Activity, Facing East. 6/04/2019 / **TIME:** 10:04AM / **GPS:** 32.5255 -103.5211

PHOTO 16: View of Remediation Activity, Facing South. 6/05/2019 / **TIME:** 12:20PM / **GPS:** 32.5261 -103.5206

PHOTO 17: View of CS-1, Facing North. 6/10/2019 / **TIME:** 12:38PM / **GPS:** 32.5254 -103.5211

PHOTO 18: View of CS-4, Facing North. 6/10/2019 / **TIME:** 12:49PM / **GPS:** 32.526 -103.5206

PHOTO 19: View of CS-5, Facing North. 6/10/2019 / **TIME:** 12:57PM / **GPS:** 32.526 -103.5204

PHOTO 20: View of CS-7, Facing East. 6/10/2019 / **TIME:** 1:16PM / **GPS:** 32.5270 -103.5202

PHOTO 21: View of CS-8, Facing West. 6/10/2019 / **TIME:** 1:21PM / **GPS:** 32.5272 -103.5202

PHOTO 22: View of CS-11, Facing South. 6/10/2019 / **TIME:** 1:21PM / **GPS:** 32.5271 -103.5201

PHOTO 23: View of CS-12, Facing North. 6/10/2019 / **TIME:** 1:29PM / **GPS:** 32.5271 -103.5202

PHOTO 24: View of CS-13, Facing South. 6/10/2019 **/ TIME:** 1:49PM / **GPS:** 32.5268 -103.5203

PHOTO 25: View of CS-14, Facing South. 6/10/2019 / **TIME:** 11:29PM / **GPS:** 32.5266 -103.5204

PHOTO 26: View of CS-15, Facing North. 6/10/2019 / **TIME:** 2:03PM / **GPS:** 32.5263 -103.5204

PHOTO 27: View of CS-16, Facing North. 6/10/2019 / **TIME:** 2:14PM / **GPS:** 32.5259 -103.5205

PHOTO 28: View of CS-17, Facing Southwest. 6/10/2019 / **TIME:** 2:19PM / **GPS:** 32.5254 -103.5207

PHOTO 29: View of TT-2, Facing South. 7/23/2019 / **TIME:** 14:40PM / **GPS:** 32.5261 -103.5206

PHOTO 30: View of TT-3, Facing West. 7/23/2019 / **TIME:** 13:51PM / **GPS:** 32.5261 -103.5206

PHOTO 31: View of TT-1, Facing Northeast. 7/23/2019 / **TIME:** 13:51PM / **GPS:** 32.5261 -103.5206

PHOTO 32: View of TT-4, Facing Northwest. 7/23/2019 / **TIME:** 13:49PM / **GPS:** 32.5261 -103.5206

PHOTO 33: View of backfilling trenches, Facing North. 7/23/2019 / **TIME:** 14:42PM / **GPS:** 32.5261 -103.5206

PHOTO 34: View of Hydro-excavation Activity, Facing North. 9/05/2019 / **TIME:** 10:20PM / **GPS:** 32.5261 -103.5206

PHOTO 35: View of Hydro-excavation Activity, Facing West. 9/05/2019 / **TIME:** 10:40PM / **GPS:** 32.5261 -103.5206

PHOTO 36: View of Hydro-excavation Activity, Facing North. 7/05/2019 / **TIME:** 10:30PM / **GPS:** 32.5261 -103.5206

PHOTO 37: View of Completed Excavation, Facing Northeast. 9/20/2019 / **TIME:** 13:20PM / **GPS:** 32.5261 -103.5206

PHOTO 38: View of Completed Excavation, Facing North. 9/20/2019 / **TIME:** 13:19PM / **GPS:** 32.5261 -103.5206

APPENDIX C – ANALYTICAL REPORT AND CHAIN OF CUSTODY

Certificate of Analysis Summary 637547

Terracon-Lubbock, Lubbock, TX

Project Name: Okeanos SWD

Project Id: AR197105
Contact: Joseph Guesnier
Project Location:

Date Received in Lab: Fri Sep-20-19 11:15 am
Report Date: 26-SEP-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	637547-001		637547-002					
	Field Id:	HS-2.1 (0.5-1)		HS-2.1 (1-1.5)					
	Depth:	0.5-1 ft		1-1.5 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Sep-18-19 12:00		Sep-18-19 12:30					
BTEX by SW 8260C SUB: T104704215-19-30	***Extracted:***	Sep-25-19 16:00		Sep-25-19 10:20					
	Analyzed:	Sep-26-19 01:03		Sep-25-19 19:46					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.000206	0.000996	<0.000206	0.000994				
Toluene		<0.000996	0.00498	<0.000994	0.00497				
Ethylbenzene		<0.000334	0.000996	<0.000334	0.000994				
m,p-Xylenes		<0.000435	0.00199	<0.000434	0.00199				
o-Xylene		<0.000981	0.000996	<0.000979	0.000994				
Total Xylenes		<0.000435	0.000996	<0.000434	0.000994				
Total BTEX		<0.000206	0.000996	<0.000206	0.000994				
Chloride by EPA 300 SUB: T104704215-19-30	***Extracted:***	Sep-23-19 11:38		Sep-23-19 11:38					
	Analyzed:	Sep-23-19 15:40		Sep-23-19 15:48					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		110	10.0	133	10.0				
TPH DRO-ORO by SW-846 8015 SUB: T104704215-19-30	***Extracted:***	Sep-24-19 11:39		Sep-24-19 11:42					
	Analyzed:	Sep-24-19 16:47		Sep-24-19 17:10					
	Units/RL:	mg/kg	RL	mg/kg	RL				
TPH-DRO (C10-28)		5.80 J	6.67	7.21	6.66				
TPH-ORO (Oil Range Organics) - (C28-C35)		16.6	6.67	19.0	6.66				
TPH GRO by EPA 8015 Mod. SUB: T104704215-19-30	***Extracted:***	Sep-24-19 12:30		Sep-24-19 12:30					
	Analyzed:	Sep-24-19 20:01		Sep-24-19 20:32					
	Units/RL:	mg/kg	RL	mg/kg	RL				
TPH-GRO		<2.50	9.98	<2.49	9.94				

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

Version: 1.%

Jessica Kramer
Project Assistant

Analytical Report 637547

for

Terracon-Lubbock

Project Manager: Joseph Guesnier

Okeanos SWD

AR197105

26-SEP-19

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-21), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

26-SEP-19

Project Manager: **Joseph Guesnier**
Terracon-Lubbock
5827 50th st, Suite 1
Lubbock, TX 79424

Reference: XENCO Report No(s): **637547**
Okeanos SWD
Project Address:

Joseph Guesnier:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 637547. 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. 637547 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,

Jessica Kramer

Jessica Kramer
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

Sample Cross Reference 637547

Terracon-Lubbock, Lubbock, TX

Okeanos SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HS-2.1 (0.5-1)	S	09-18-19 12:00	0.5 - 1 ft	637547-001
HS-2.1 (1-1.5)	S	09-18-19 12:30	1 - 1.5 ft	637547-002

CASE NARRATIVE

Client Name: Terracon-Lubbock

Project Name: Okeanos SWD

Project ID: *AR197105*
Work Order Number(s): *637547*

Report Date: *26-SEP-19*
Date Received: *09/20/2019*

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

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3102414 BTEX by SW 8260C
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3102549 BTEX by SW 8260C
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 637547-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 637547-001.
The Laboratory Control Sample for m,p-Xylenes, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results 637547

Terracon-Lubbock, Lubbock, TX

Okeanos SWD

Sample Id: **HS-2.1 (0.5-1)** Matrix: Soil Date Received:09.20.19 11.15

Lab Sample Id: 637547-001 Date Collected: 09.18.19 12.00 Sample Depth: 0.5 - 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: JYM % Moisture:

Analyst: JYM Date Prep: 09.23.19 11.38 Basis: Wet Weight

Seq Number: 3102189 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**110**	10.0	0.355	mg/kg	09.23.19 15.40		1

Analytical Method: TPH DRO-ORO by SW-846 8015 Prep Method: SW3550

Tech: AHI % Moisture:

Analyst: ISU Date Prep: 09.24.19 11.39 Basis: Wet Weight

Seq Number: 3102383 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-DRO (C10-28)	68334-30-5	**5.80**	6.67	2.43	mg/kg	09.24.19 16.47	J	1
TPH-ORO (Oil Range Organics) - (C28-C35)	ORO	**16.6**	6.67	3.37	mg/kg	09.24.19 16.47		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Pentacosane	629-99-2	93	%	40-130	09.24.19 16.47	

Analytical Method: BTEX by SW 8260C Prep Method: SW5030B

Tech: CRL % Moisture:

Analyst: CRL Date Prep: 09.25.19 16.00 Basis: Wet Weight

Seq Number: 3102549 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000206	0.000996	0.000206	mg/kg	09.26.19 01.03	U	1
Toluene	108-88-3	<0.000996	0.00498	0.000996	mg/kg	09.26.19 01.03	U	1
Ethylbenzene	100-41-4	<0.000334	0.000996	0.000334	mg/kg	09.26.19 01.03	U	1
m,p-Xylenes	179601-23-1	<0.000435	0.00199	0.000435	mg/kg	09.26.19 01.03	UX	1
o-Xylene	95-47-6	<0.000981	0.000996	0.000981	mg/kg	09.26.19 01.03	UX	1
Total Xylenes	1330-20-7	<0.000435	0.000996	0.000435	mg/kg	09.26.19 01.03	U	1
Total BTEX		<0.000206	0.000996	0.000206	mg/kg	09.26.19 01.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	109	%	53-142	09.26.19 01.03	
1,2-Dichloroethane-D4	17060-07-0	105	%	53-150	09.26.19 01.03	
Toluene-D8	2037-26-5	98	%	70-130	09.26.19 01.03	

Certificate of Analytical Results 637547

Terracon-Lubbock, Lubbock, TX

Okeanos SWD

Sample Id:	**HS-2.1 (0.5-1)**	Matrix:	Soil	Date Received:	09.20.19 11.15
Lab Sample Id:	637547-001	Date Collected:	09.18.19 12.00	Sample Depth:	0.5 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	CRL			% Moisture:	
Analyst:	CRL	Date Prep:	09.24.19 12.30	Basis:	Wet Weight
Seq Number:	3102413			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<2.50	9.98	2.50	mg/kg	09.24.19 20.01	U	50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	80-120	09.24.19 20.01	

Certificate of Analytical Results 637547

Terracon-Lubbock, Lubbock, TX

Okeanos SWD

Sample Id: **HS-2.1 (1-1.5)** Matrix: Soil Date Received:09.20.19 11.15

Lab Sample Id: 637547-002 Date Collected: 09.18.19 12.30 Sample Depth: 1 - 1.5 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: JYM % Moisture:

Analyst: JYM Date Prep: 09.23.19 11.38 Basis: Wet Weight

Seq Number: 3102189 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**133**	10.0	0.355	mg/kg	09.23.19 15.48		1

Analytical Method: TPH DRO-ORO by SW-846 8015 Prep Method: SW3550

Tech: AHI % Moisture:

Analyst: ISU Date Prep: 09.24.19 11.42 Basis: Wet Weight

Seq Number: 3102383 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-DRO (C10-28)	68334-30-5	**7.21**	6.66	2.43	mg/kg	09.24.19 17.10		1
TPH-ORO (Oil Range Organics) - (C28-C35)	ORO	**19.0**	6.66	3.37	mg/kg	09.24.19 17.10		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Pentacosane	629-99-2	108	%	40-130	09.24.19 17.10	

Analytical Method: BTEX by SW 8260C Prep Method: SW5030B

Tech: CRL % Moisture:

Analyst: CRL Date Prep: 09.25.19 10.20 Basis: Wet Weight

Seq Number: 3102414 SUB: T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000206	0.000994	0.000206	mg/kg	09.25.19 19.46	U	1
Toluene	108-88-3	<0.000994	0.00497	0.000994	mg/kg	09.25.19 19.46	U	1
Ethylbenzene	100-41-4	<0.000334	0.000994	0.000334	mg/kg	09.25.19 19.46	U	1
m,p-Xylenes	179601-23-1	<0.000434	0.00199	0.000434	mg/kg	09.25.19 19.46	U	1
o-Xylene	95-47-6	<0.000979	0.000994	0.000979	mg/kg	09.25.19 19.46	U	1
Total Xylenes	1330-20-7	<0.000434	0.000994	0.000434	mg/kg	09.25.19 19.46	U	1
Total BTEX		<0.000206	0.000994	0.000206	mg/kg	09.25.19 19.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	103	%	53-142	09.25.19 19.46	
1,2-Dichloroethane-D4	17060-07-0	99	%	53-150	09.25.19 19.46	
Toluene-D8	2037-26-5	99	%	70-130	09.25.19 19.46	

Certificate of Analytical Results 637547

Terracon-Lubbock, Lubbock, TX

Okeanos SWD

Sample Id:	**HS-2.1 (1-1.5)**	Matrix:	Soil	Date Received:	09.20.19 11.15
Lab Sample Id:	637547-002	Date Collected:	09.18.19 12.30	Sample Depth:	1 - 1.5 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	CRL			% Moisture:	
Analyst:	CRL	Date Prep:	09.24.19 12.30	Basis:	Wet Weight
Seq Number:	3102413			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<2.49	9.94	2.49	mg/kg	09.24.19 20.32	U	50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	80-120	09.24.19 20.32	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 637547

Terracon-Lubbock

Okeanos SWD

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3102189 — Matrix: Solid — Date Prep: 09.23.19
MB Sample Id: 7686676-1-BLK — LCS Sample Id: 7686676-1-BKS — LCSD Sample Id: 7686676-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.354	100	107	107	104	104	80-120	3	20	mg/kg	09.23.19 13:40	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3102189 — Matrix: Soil — Date Prep: 09.23.19
Parent Sample Id: 637387-001 — MS Sample Id: 637387-001 S — MSD Sample Id: 637387-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.4	100	106	96	105	95	80-120	1	20	mg/kg	09.23.19 15:24	

Analytical Method: TPH DRO-ORO by SW-846 8015 — Prep Method: SW3550
Seq Number: 3102383 — Matrix: Solid — Date Prep: 09.24.19
MB Sample Id: 7686766-1-BLK — LCS Sample Id: 7686766-1-BKS — LCSD Sample Id: 7686766-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (C10-28)	<2.43	33.3	36.9	111	33.4	100	54-124	10	35	mg/kg	09.24.19 16:01	
TPH-ORO (Oil Range Organics) - (C28-	<3.37	33.3	36.8	111	35.1	105	63-142	5	35	mg/kg	09.24.19 16:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Pentacosane	83		87		88		40-130	%	09.24.19 16:01

Analytical Method: BTEX by SW 8260C — Prep Method: SW5035A
Seq Number: 3102414 — Matrix: Solid — Date Prep: 09.25.19
MB Sample Id: 7686858-1-BLK — LCS Sample Id: 7686858-1-BKS — LCSD Sample Id: 7686858-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000207	0.0500	0.0447	89	0.0515	103	62-132	14	25	mg/kg	09.25.19 10:36	
Toluene	<0.00100	0.0500	0.0437	87	0.0475	95	66-124	8	25	mg/kg	09.25.19 10:36	
Ethylbenzene	<0.000336	0.0500	0.0457	91	0.0500	100	71-134	9	25	mg/kg	09.25.19 10:36	
m,p-Xylenes	<0.000437	0.100	0.0878	88	0.0938	94	69-128	7	25	mg/kg	09.25.19 10:36	
o-Xylene	<0.000985	0.0500	0.0446	89	0.0484	97	72-131	8	25	mg/kg	09.25.19 10:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	105		108		110		53-142	%	09.25.19 10:36
1,2-Dichloroethane-D4	99		101		105		53-150	%	09.25.19 10:36
Toluene-D8	102		106		102		70-130	%	09.25.19 10:36

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

QC Summary 637547

Terracon-Lubbock

Okeanos SWD

Analytical Method: **BTEX by SW 8260C** Prep Method: SW5030B

Seq Number: 3102549 Matrix: Solid Date Prep: 09.25.19

MB Sample Id: 7686942-1-BLK LCS Sample Id: 7686942-1-BKS LCSD Sample Id: 7686942-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000207	0.0500	0.0491	98	0.0500	100	62-132	2	25	mg/kg	09.25.19 22:35	
Toluene	<0.00100	0.0500	0.0456	91	0.0455	91	66-124	0	25	mg/kg	09.25.19 22:35	
Ethylbenzene	<0.000336	0.0500	0.0477	95	0.0473	95	71-134	1	25	mg/kg	09.25.19 22:35	
m,p-Xylenes	<0.000437	0.100	0.0906	91	0.0895	90	69-128	1	25	mg/kg	09.25.19 22:35	
o-Xylene	<0.000985	0.0500	0.0479	96	0.0468	94	72-131	2	25	mg/kg	09.25.19 22:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	102		107		108		53-142	%	09.25.19 22:35
1,2-Dichloroethane-D4	97		103		100		53-150	%	09.25.19 22:35
Toluene-D8	99		104		101		70-130	%	09.25.19 22:35

Analytical Method: **BTEX by SW 8260C** Prep Method: SW5035A

Seq Number: 3102414 Matrix: Soil Date Prep: 09.25.19

Parent Sample Id: 637693-002 MS Sample Id: 637693-002 S MSD Sample Id: 637693-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0110	2.67	2.39	90	2.68	100	62-132	11	25	mg/kg	09.25.19 11:18	
Toluene	<0.0533	2.67	2.25	84	2.51	94	66-124	11	25	mg/kg	09.25.19 11:18	
Ethylbenzene	<0.0179	2.67	2.37	89	2.63	99	71-134	10	25	mg/kg	09.25.19 11:18	
m,p-Xylenes	<0.0233	5.33	4.43	83	4.98	93	69-128	12	25	mg/kg	09.25.19 11:18	
o-Xylene	<0.0525	2.67	2.32	87	2.60	97	72-131	11	25	mg/kg	09.25.19 11:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	112		112		53-142	%	09.25.19 11:18
1,2-Dichloroethane-D4	106		106		53-150	%	09.25.19 11:18
Toluene-D8	105		105		70-130	%	09.25.19 11:18

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 637547

Terracon-Lubbock

Okeanos SWD

Analytical Method: **BTEX by SW 8260C** Prep Method: SW5030B
Seq Number: 3102549 Matrix: Soil Date Prep: 09.25.19
Parent Sample Id: 637547-001 MS Sample Id: 637547-001 S MSD Sample Id: 637547-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000209	0.0504	0.0395	78	0.0413	83	62-132	4	25	mg/kg	09.25.19 23:17	
Toluene	<0.00101	0.0504	0.0361	72	0.0381	77	66-124	5	25	mg/kg	09.25.19 23:17	
Ethylbenzene	<0.000338	0.0504	0.0358	71	0.0371	75	71-134	4	25	mg/kg	09.25.19 23:17	
m,p-Xylenes	<0.000440	0.101	0.0663	66	0.0689	69	69-128	4	25	mg/kg	09.25.19 23:17	X
o-Xylene	<0.000993	0.0504	0.0344	68	0.0357	72	72-131	4	25	mg/kg	09.25.19 23:17	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	109		109		53-142	%	09.25.19 23:17
1,2-Dichloroethane-D4	106		104		53-150	%	09.25.19 23:17
Toluene-D8	106		107		70-130	%	09.25.19 23:17

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B
Seq Number: 3102413 Matrix: Solid Date Prep: 09.24.19
MB Sample Id: 7686850-1-BLK LCS Sample Id: 7686850-1-BKS LCSD Sample Id: 7686850-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<0.0500	1.00	0.873	87	1.06	106	75-135	19	35	mg/kg	09.24.19 16:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	117		96		102		80-120	%	09.24.19 16:59

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B
Seq Number: 3102413 Matrix: Soil Date Prep: 09.24.19
Parent Sample Id: 637547-001 MS Sample Id: 637547-001 S MSD Sample Id: 637547-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<2.52	50.4	48.4	96	47.9	95	75-135	1	35	mg/kg	09.24.19 18:00	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	94		95		80-120	%	09.24.19 18:00

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

637547

CHAIN OF CUSTODY RECORD

Terracon

Office Location	Lubbock	Laboratory:	Xenco
Project Manager	Joseph Guesnier	Address:	6701 Aberdeen, Lubbock, Texas 79424
Sampler's Name	Joseph Guesnier	Phone:	
		Contact:	Joseph Guesnier (806-544-9276)
		SRS #:	
		Sampler's Signature	

Project Number: AR197105

Project Name: Okeanos SWD

ANALYSIS REQUESTED

LAB USE ONLY
DUE DATE:
TEMP OF COOLER WHEN RECEIVED (°C): 18 / 15.8 / 15.9

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No. Type of Containers: 2 oz Glass	4 oz Glass	5035 kit	40 ml VOA	Chloride (EPA Method 300)	TPH Extended 8015	BTEX (EPA Method 8021B)	Hold	Lab Sample ID
S	9/18/2019	12:00	X		HS-2.1 (0.5-1)	0.5'	1'		X			X	X	X		1
S	9/18/2019	12:30	X		HS-2.1 (1-1.5)	1'	1.5'		X			X	X	X		2

TURNAROUND TIME ☐ Normal ☐ 48-Hour Rush ☐ 24-Hour Rush

TRRP Laboratory Review Checklist ☐ Yes ☐ No

Relinquished by (Signature)	Date: 9/20/19	Time: 11:15	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:

NOTES: Client: Spur

e-mail results to:

john.fergerson@terracon.com

jrguesnier@terracon.com

Matrix: WW-Wastewater; W - Water; S - Soil; L - Liquid; A - Air Bag; C - Charcoal tube; SL - Sludge

Container: VOA - 40 ml vial; A/G - Amber Glass 1L; 250 ml = Glass wide mouth; P/O - Plastic or other _____

Inter-Office Shipment

IOS Number **48461**

Date/Time: 09/20/19 12:23
Lab# From: **Lubbock**
Lab# To: **Houston**

Created by: Brenda Ward
Delivery Priority:
Air Bill No.: 776301770883

Please send report to: Jessica Kramer
Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
637547-001	S	HS-2.1 (0.5-1)	09/18/19 12:00	E300_CL	Chloride by EPA 300	09/26/19	03/16/20	JKR	CL	
637547-001	S	HS-2.1 (0.5-1)	09/18/19 12:00	SW8015NM_DROORO	DRO-ORO By SW8015B	09/26/19	10/02/19	JKR	PHCC10C28 PHCC28C35	
637547-001	S	HS-2.1 (0.5-1)	09/18/19 12:00	SW8021B	BTEX by EPA 8021B	09/26/19	10/02/19	JKR	BR4FBZ BZ BZME EBZ X	
637547-001	S	HS-2.1 (0.5-1)	09/18/19 12:00	SW8015GRO	TPH GRO by EPA 8015 Mod.	09/26/19	10/02/19	JKR	PHCG	
637547-002	S	HS-2.1 (1-1.5)	09/18/19 12:30	SW8015GRO	TPH GRO by EPA 8015 Mod.	09/26/19	10/02/19	JKR	PHCG	
637547-002	S	HS-2.1 (1-1.5)	09/18/19 12:30	SW8021B	BTEX by EPA 8021B	09/26/19	10/02/19	JKR	BR4FBZ BZ BZME EBZ X	
637547-002	S	HS-2.1 (1-1.5)	09/18/19 12:30	SW8015NM_DROORO	DRO-ORO By SW8015B	09/26/19	10/02/19	JKR	PHCC10C28 PHCC28C35	
637547-002	S	HS-2.1 (1-1.5)	09/18/19 12:30	E300_CL	Chloride by EPA 300	09/26/19	03/16/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Took off TX1005 changed to SW8015 MOD-NM Added BTEX 09-24-19 09:58 B W

Relinquished By: Brenda Ward
Brenda Ward

Date Relinquished: 09/20/2019

Received By: Travis Simmons
Travis Simmons

Date Received: 09/21/2019 09:30

Cooler Temperature: 2.3

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 48461

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : HOU-068

Sent By: Brenda Ward **Date Sent:** 09.20.2019 12.23 PM

Received By: Travis Simmons **Date Received:** 09.21.2019 09.30 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.3	
#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: Travis Simmons Date: 09.21.2019

Travis Simmons

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 09/20/2019 11:15:00 AM

Work Order #: 637547

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)?	15.9	
#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 & Chloride 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: 09/20/2019
Brenda Ward

Checklist reviewed by: Jessica Kramer Date: 09/23/2019
Jessica Kramer

Certificate of Analysis Summary 636499

Terracon-Lubbock, Lubbock, TX

Project Name: Okeanos

Project Id: AR197105
Contact: Joseph Guesnier
Project Location:

Date Received in Lab: Wed Sep-11-19 09:04 am
Report Date: 13-SEP-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	636499-001		636499-002		636499-003		636499-004		636499-005		636499-006	
	Field Id:	HS-1 (0-0.5)		HS-1 (0.5-1)		HS-2 (0-0.5)		HS-2 (0.5-1)		HS-3 (0-0.5)		HS-3 (0.5-1)	
	Depth:	0-0.5 ft		0.5-1 ft		0-0.5 ft		0.5-1 ft		0-0.5 ft		0.5-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-10-19 09:00		Sep-10-19 09:10		Sep-10-19 09:20		Sep-10-19 09:30		Sep-10-19 09:40		Sep-10-19 09:50	
BTEX by EPA 8021B	***Extracted:***	Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00	
	Analyzed:	Sep-11-19 20:45		Sep-11-19 23:09		Sep-11-19 23:34		Sep-11-19 23:57		Sep-12-19 00:22		Sep-12-19 00:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00873	0.0193	<0.00837	0.0185	<0.00876	0.0194	<0.00829	0.0183	<0.00828	0.0183	<0.00854	0.0189
Toluene		<0.00452	0.0193	<0.00433	0.0185	<0.00453	0.0194	<0.00429	0.0183	<0.00429	0.0183	<0.00442	0.0189
Ethylbenzene		<0.00595	0.0193	<0.00570	0.0185	<0.00597	0.0194	<0.00565	0.0183	<0.00564	0.0183	<0.00582	0.0189
m,p-Xylenes		0.0116 J	0.0386	<0.00631	0.0370	<0.00661	0.0388	<0.00626	0.0367	<0.00625	0.0366	<0.00645	0.0378
o-Xylene		<0.00658	0.0193	<0.00631	0.0185	<0.00661	0.0194	<0.00626	0.0183	<0.00625	0.0183	<0.00645	0.0189
Total Xylenes		0.0116 J	0.0193	<0.00631	0.0185	<0.00661	0.0194	<0.00626	0.0183	<0.00625	0.0183	<0.00645	0.0189
Total BTEX		0.0116 J	0.0193	<0.00433	0.0185	<0.00453	0.0194	<0.00429	0.0183	<0.00429	0.0183	<0.00442	0.0189
Chloride by EPA 300	***Extracted:***	Sep-12-19 09:30		Sep-12-19 09:30		Sep-12-19 09:30		Sep-12-19 09:30		Sep-12-19 09:30		Sep-12-19 09:30	
	Analyzed:	Sep-12-19 12:44		Sep-12-19 13:34		Sep-12-19 13:59		Sep-12-19 14:11		Sep-12-19 14:36		Sep-12-19 14:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		464 X	25.0	491 D	125	47.4	25.0	1410 D	125	202	25.0	174	25.0
DRO-ORO By SW8015B	***Extracted:***	Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00	
	Analyzed:	Sep-11-19 18:46		Sep-11-19 21:03		Sep-11-19 21:38		Sep-11-19 22:15		Sep-11-19 22:49		Sep-11-19 23:23	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Diesel Range Organics (DRO)		<7.53	25.2	<7.51	25.1	11.3 J	25.1	13.2 J	25.1	18.8 J	24.8	14.1 J	24.9
Oil Range Hydrocarbons (ORO)		<7.53	25.2	<7.51	25.1	<7.50	25.1	<7.51	25.1	<7.42	24.8	<7.44	24.9
TPH GRO by EPA 8015 Mod.	***Extracted:***	Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00	
	Analyzed:	Sep-11-19 20:45		Sep-11-19 23:09		Sep-11-19 23:34		Sep-11-19 23:57		Sep-12-19 00:22		Sep-12-19 00:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
TPH-GRO		0.496 J	3.86	0.278 J	3.70	<0.263	3.88	<0.249	3.67	<0.248	3.66	<0.256	3.78

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 636499

Terracon-Lubbock, Lubbock, TX

Project Name: Okeanos

Project Id: AR197105
Contact: Joseph Guesnier
Project Location:

Date Received in Lab: Wed Sep-11-19 09:04 am
Report Date: 13-SEP-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	636499-007		636499-008		636499-009		636499-010		636499-011		636499-012	
	Field Id:	HS-4 (0-0.5)		HS-4 (0.5-1)		HS-5 (0-0.5)		HS-5 (0.5-1)		HS-6 (0-0.5)		HS-6 (0.5-1)	
	Depth:	0-0.5 ft		0.5-1 ft		0-0.5 ft		0.5-1 ft		0-0.5 ft		0.5-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-10-19 10:00		Sep-10-19 10:10		Sep-10-19 10:20		Sep-10-19 10:30		Sep-10-19 10:40		Sep-10-19 10:50	
BTEX by EPA 8021B	*Extracted:*	Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00	
	Analyzed:	Sep-12-19 01:09		Sep-12-19 01:34		Sep-12-19 01:58		Sep-12-19 02:21		Sep-12-19 04:21		Sep-12-19 04:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00871	0.0193	<0.00770	0.0170	<0.00890	0.0197	<0.00831	0.0184	<0.00906	0.0200	<0.00823	0.0182
Toluene		<0.00451	0.0193	<0.00399	0.0170	<0.00461	0.0197	<0.00430	0.0184	<0.00469	0.0200	<0.00426	0.0182
Ethylbenzene		<0.00593	0.0193	<0.00525	0.0170	<0.00606	0.0197	<0.00566	0.0184	<0.00617	0.0200	<0.00561	0.0182
m,p-Xylenes		<0.00657	0.0385	<0.00581	0.0341	<0.00671	0.0394	<0.00627	0.0368	<0.00683	0.0401	<0.00621	0.0364
o-Xylene		<0.00657	0.0193	<0.00581	0.0170	<0.00671	0.0197	<0.00627	0.0184	<0.00683	0.0200	<0.00621	0.0182
Total Xylenes		<0.00657	0.0193	<0.00581	0.0170	<0.00671	0.0197	<0.00627	0.0184	<0.00683	0.0200	<0.00621	0.0182
Total BTEX		<0.00451	0.0193	<0.00399	0.0170	<0.00461	0.0197	<0.00430	0.0184	<0.00469	0.0200	<0.00426	0.0182
Chloride by EPA 300	*Extracted:*	Sep-12-19 09:30		Sep-12-19 09:30		Sep-12-19 09:30		Sep-12-19 09:30		Sep-12-19 09:30		Sep-12-19 09:30	
	Analyzed:	Sep-12-19 15:01		Sep-12-19 15:26		Sep-12-19 15:38		Sep-12-19 15:51		Sep-12-19 16:03		Sep-12-19 16:40	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		13.1 J	25.0	41.5	25.0	111	25.0	169	25.0	7.85 J	25.0	29.0	25.0
DRO-ORO By SW8015B	*Extracted:*	Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00	
	Analyzed:	Sep-11-19 23:59		Sep-12-19 00:33		Sep-12-19 11:17		Sep-12-19 01:41		Sep-12-19 02:14		Sep-12-19 02:47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Diesel Range Organics (DRO)		<7.45	24.9	<7.47	25.0	19.9 J	24.9	<7.53	25.2	12.5 J	25.0	<7.55	25.2
Oil Range Hydrocarbons (ORO)		<7.45	24.9	<7.47	25.0	<7.46	24.9	<7.53	25.2	<7.47	25.0	<7.55	25.2
TPH GRO by EPA 8015 Mod.	*Extracted:*	Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00	
	Analyzed:	Sep-12-19 01:09		Sep-12-19 01:34		Sep-12-19 01:58		Sep-12-19 02:21		Sep-12-19 04:21		Sep-12-19 04:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
TPH-GRO		<0.261	3.85	<0.231	3.41	<0.267	3.94	<0.249	3.68	<0.272	4.01	<0.247	3.64

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 636499

Terracon-Lubbock, Lubbock, TX

Project Name: Okeanos

Project Id: AR197105
Contact: Joseph Guesnier
Project Location:

Date Received in Lab: Wed Sep-11-19 09:04 am
Report Date: 13-SEP-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	636499-013		636499-014		636499-015		636499-016					
	Field Id:	HS-7 (0-0.5)		HS-7 (0.5-1)		HS-8 (0-0.5)		HS-8 (0.5-1)					
	Depth:	0-0.5 ft		0.5-1 ft		0-0.5 ft		0.5-1 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Sep-10-19 11:00		Sep-10-19 11:10		Sep-10-19 11:20		Sep-10-19 11:30					
BTEX by EPA 8021B	***Extracted:***	Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00					
	Analyzed:	Sep-12-19 05:09		Sep-12-19 05:33		Sep-12-19 05:57		Sep-12-19 06:21					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00897	0.0198	<0.00826	0.0183	<0.00811	0.0180	<0.00899	0.0199				
Toluene		<0.00464	0.0198	<0.00428	0.0183	<0.00420	0.0180	<0.00465	0.0199				
Ethylbenzene		<0.00611	0.0198	<0.00563	0.0183	<0.00553	0.0180	<0.00612	0.0199				
m,p-Xylenes		<0.00677	0.0397	<0.00623	0.0366	<0.00612	0.0359	<0.00678	0.0398				
o-Xylene		<0.00677	0.0198	<0.00623	0.0183	<0.00612	0.0180	<0.00678	0.0199				
Total Xylenes		<0.00677	0.0198	<0.00623	0.0183	<0.00612	0.0180	<0.00678	0.0199				
Total BTEX		<0.00464	0.0198	<0.00428	0.0183	<0.00420	0.0180	<0.00465	0.0199				
Chloride by EPA 300	***Extracted:***	Sep-12-19 09:30		Sep-12-19 09:30		Sep-12-19 09:30		Sep-12-19 09:30					
	Analyzed:	Sep-12-19 16:53		Sep-12-19 17:05		Sep-12-19 17:18		Sep-12-19 18:20					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		27.2	25.0	25.6	25.0	5.69 J	25.0	11.4 J	25.0				
DRO-ORO By SW8015B	***Extracted:***	Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00					
	Analyzed:	Sep-12-19 03:21		Sep-12-19 03:54		Sep-12-19 04:30		Sep-12-19 05:04					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Diesel Range Organics (DRO)		8.09 J	25.2	23.2 J	24.8	15.4 J	25.2	15.1 J	24.8				
Oil Range Hydrocarbons (ORO)		<7.53	25.2	<7.42	24.8	<7.53	25.2	<7.41	24.8				
TPH GRO by EPA 8015 Mod.	***Extracted:***	Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00		Sep-11-19 12:00					
	Analyzed:	Sep-12-19 05:09		Sep-12-19 05:33		Sep-12-19 05:57		Sep-12-19 06:21					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
TPH-GRO		<0.269	3.97	<0.248	3.66	<0.243	3.59	<0.269	3.98				

Version: 1.%

Jessica Kramer
Project Assistant

Analytical Report 636499

for

Terracon-Lubbock

Project Manager: Joseph Guesnier

Okeanos

AR197105

13-SEP-19

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

13-SEP-19

Project Manager: **Joseph Guesnier**
Terracon-Lubbock
5827 50th st, Suite 1
Lubbock, TX 79424

Reference: XENCO Report No(s): **636499**
Okeanos
Project Address:

Joseph Guesnier:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 636499. 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. 636499 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,

Jessica Kramer

Jessica Kramer
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

Sample Cross Reference 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HS-1 (0-0.5)	S	09-10-19 09:00	0 - 0.5 ft	636499-001
HS-1 (0.5-1)	S	09-10-19 09:10	0.5 - 1 ft	636499-002
HS-2 (0-0.5)	S	09-10-19 09:20	0 - 0.5 ft	636499-003
HS-2 (0.5-1)	S	09-10-19 09:30	0.5 - 1 ft	636499-004
HS-3 (0-0.5)	S	09-10-19 09:40	0 - 0.5 ft	636499-005
HS-3 (0.5-1)	S	09-10-19 09:50	0.5 - 1 ft	636499-006
HS-4 (0-0.5)	S	09-10-19 10:00	0 - 0.5 ft	636499-007
HS-4 (0.5-1)	S	09-10-19 10:10	0.5 - 1 ft	636499-008
HS-5 (0-0.5)	S	09-10-19 10:20	0 - 0.5 ft	636499-009
HS-5 (0.5-1)	S	09-10-19 10:30	0.5 - 1 ft	636499-010
HS-6 (0-0.5)	S	09-10-19 10:40	0 - 0.5 ft	636499-011
HS-6 (0.5-1)	S	09-10-19 10:50	0.5 - 1 ft	636499-012
HS-7 (0-0.5)	S	09-10-19 11:00	0 - 0.5 ft	636499-013
HS-7 (0.5-1)	S	09-10-19 11:10	0.5 - 1 ft	636499-014
HS-8 (0-0.5)	S	09-10-19 11:20	0 - 0.5 ft	636499-015
HS-8 (0.5-1)	S	09-10-19 11:30	0.5 - 1 ft	636499-016

CASE NARRATIVE

Client Name: Terracon-Lubbock
Project Name: Okeanos

Project ID: *AR197105*
Work Order Number(s): *636499*

Report Date: *13-SEP-19*
Date Received: *09/11/2019*

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

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3101206 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3101210 TPH GRO by EPA 8015 Mod.
Surrogate 4-Bromofluorobenzene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7685980-1-BKS,636499-001 S,636499-001 SD.

Batch: LBA-3101262 DRO-ORO By SW8015B
Surrogate Tricosane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 636499-001 SD.
Surrogate n-Triacontane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 636499-001 SD,636499-004,636499-010.

Batch: LBA-3101301 Chloride by EPA 300
Lab Sample ID 636499-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 636499-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-1 (0-0.5)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-001 Date Collected: 09.10.19 09.00 Sample Depth:0 - 0.5 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**464**	25.0	0.572	mg/kg	09.12.19 12.44	X	1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<7.53	25.2	7.53	mg/kg	09.11.19 18.46	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.53	25.2	7.53	mg/kg	09.11.19 18.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	122	%	65-144	09.11.19 18.46	
n-Triacontane	638-68-6	132	%	46-152	09.11.19 18.46	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00873	0.0193	0.00873	mg/kg	09.11.19 20.45	U	1
Toluene	108-88-3	<0.00452	0.0193	0.00452	mg/kg	09.11.19 20.45	U	1
Ethylbenzene	100-41-4	<0.00595	0.0193	0.00595	mg/kg	09.11.19 20.45	U	1
m,p-Xylenes	179601-23-1	**0.0116**	0.0386	0.00658	mg/kg	09.11.19 20.45	J	1
o-Xylene	95-47-6	<0.00658	0.0193	0.00658	mg/kg	09.11.19 20.45	U	1
Total Xylenes	1330-20-7	**0.0116**	0.0193	0.00658	mg/kg	09.11.19 20.45	J	1
Total BTEX		**0.0116**	0.0193	0.00452	mg/kg	09.11.19 20.45	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	68-120	09.11.19 20.45	
a,a,a-Trifluorotoluene	98-08-8	104	%	71-121	09.11.19 20.45	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-1 (0-0.5)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-001	Date Collected:	09.10.19 09.00	Sample Depth:	0 - 0.5 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	**0.496**	3.86	0.262	mg/kg	09.11.19 20.45	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	76-123	09.11.19 20.45	
a,a,a-Trifluorotoluene	98-08-8	92	%	69-120	09.11.19 20.45	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-1 (0.5-1)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-002 Date Collected: 09.10.19 09.10 Sample Depth:0.5 - 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**491**	125	2.86	mg/kg	09.12.19 13.47	D	5

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<7.51	25.1	7.51	mg/kg	09.11.19 21.03	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.51	25.1	7.51	mg/kg	09.11.19 21.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	129	%	65-144	09.11.19 21.03	
n-Triacontane	638-68-6	140	%	46-152	09.11.19 21.03	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00837	0.0185	0.00837	mg/kg	09.11.19 23.09	U	1
Toluene	108-88-3	<0.00433	0.0185	0.00433	mg/kg	09.11.19 23.09	U	1
Ethylbenzene	100-41-4	<0.00570	0.0185	0.00570	mg/kg	09.11.19 23.09	U	1
m,p-Xylenes	179601-23-1	<0.00631	0.0370	0.00631	mg/kg	09.11.19 23.09	U	1
o-Xylene	95-47-6	<0.00631	0.0185	0.00631	mg/kg	09.11.19 23.09	U	1
Total Xylenes	1330-20-7	<0.00631	0.0185	0.00631	mg/kg	09.11.19 23.09	U	1
Total BTEX		<0.00433	0.0185	0.00433	mg/kg	09.11.19 23.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	68-120	09.11.19 23.09	
a,a,a-Trifluorotoluene	98-08-8	108	%	71-121	09.11.19 23.09	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-1 (0.5-1)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-002	Date Collected:	09.10.19 09.10	Sample Depth:	0.5 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	**0.278**	3.70	0.251	mg/kg	09.11.19 23.09	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	76-123	09.11.19 23.09	
a,a,a-Trifluorotoluene	98-08-8	96	%	69-120	09.11.19 23.09	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-2 (0-0.5)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-003 Date Collected: 09.10.19 09.20 Sample Depth:0 - 0.5 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**47.4**	25.0	0.572	mg/kg	09.12.19 13.59		1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**11.3**	25.1	7.50	mg/kg	09.11.19 21.38	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.50	25.1	7.50	mg/kg	09.11.19 21.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	140	%	65-144	09.11.19 21.38	
n-Triacontane	638-68-6	142	%	46-152	09.11.19 21.38	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00876	0.0194	0.00876	mg/kg	09.11.19 23.34	U	1
Toluene	108-88-3	<0.00453	0.0194	0.00453	mg/kg	09.11.19 23.34	U	1
Ethylbenzene	100-41-4	<0.00597	0.0194	0.00597	mg/kg	09.11.19 23.34	U	1
m,p-Xylenes	179601-23-1	<0.00661	0.0388	0.00661	mg/kg	09.11.19 23.34	U	1
o-Xylene	95-47-6	<0.00661	0.0194	0.00661	mg/kg	09.11.19 23.34	U	1
Total Xylenes	1330-20-7	<0.00661	0.0194	0.00661	mg/kg	09.11.19 23.34	U	1
Total BTEX		<0.00453	0.0194	0.00453	mg/kg	09.11.19 23.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	68-120	09.11.19 23.34	
a,a,a-Trifluorotoluene	98-08-8	110	%	71-121	09.11.19 23.34	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-2 (0-0.5)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-003	Date Collected:	09.10.19 09.20	Sample Depth:	0 - 0.5 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.263	3.88	0.263	mg/kg	09.11.19 23.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	76-123	09.11.19 23.34	
a,a,a-Trifluorotoluene	98-08-8	98	%	69-120	09.11.19 23.34	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-2 (0.5-1)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-004 Date Collected: 09.10.19 09.30 Sample Depth:0.5 - 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1410**	125	2.86	mg/kg	09.12.19 14.24	D	5

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**13.2**	25.1	7.51	mg/kg	09.11.19 22.15	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.51	25.1	7.51	mg/kg	09.11.19 22.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	139	%	65-144	09.11.19 22.15	
n-Triacontane	638-68-6	156	%	46-152	09.11.19 22.15	**

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00829	0.0183	0.00829	mg/kg	09.11.19 23.57	U	1
Toluene	108-88-3	<0.00429	0.0183	0.00429	mg/kg	09.11.19 23.57	U	1
Ethylbenzene	100-41-4	<0.00565	0.0183	0.00565	mg/kg	09.11.19 23.57	U	1
m,p-Xylenes	179601-23-1	<0.00626	0.0367	0.00626	mg/kg	09.11.19 23.57	U	1
o-Xylene	95-47-6	<0.00626	0.0183	0.00626	mg/kg	09.11.19 23.57	U	1
Total Xylenes	1330-20-7	<0.00626	0.0183	0.00626	mg/kg	09.11.19 23.57	U	1
Total BTEX		<0.00429	0.0183	0.00429	mg/kg	09.11.19 23.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	68-120	09.11.19 23.57	
a,a,a-Trifluorotoluene	98-08-8	113	%	71-121	09.11.19 23.57	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-2 (0.5-1)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-004	Date Collected:	09.10.19 09.30	Sample Depth:	0.5 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.249	3.67	0.249	mg/kg	09.11.19 23.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	76-123	09.11.19 23.57	
a,a,a-Trifluorotoluene	98-08-8	101	%	69-120	09.11.19 23.57	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-3 (0-0.5)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-005 Date Collected: 09.10.19 09.40 Sample Depth:0 - 0.5 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**202**	25.0	0.572	mg/kg	09.12.19 14.36		1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**18.8**	24.8	7.42	mg/kg	09.11.19 22.49	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.42	24.8	7.42	mg/kg	09.11.19 22.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	136	%	65-144	09.11.19 22.49	
n-Triacontane	638-68-6	142	%	46-152	09.11.19 22.49	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00828	0.0183	0.00828	mg/kg	09.12.19 00.22	U	1
Toluene	108-88-3	<0.00429	0.0183	0.00429	mg/kg	09.12.19 00.22	U	1
Ethylbenzene	100-41-4	<0.00564	0.0183	0.00564	mg/kg	09.12.19 00.22	U	1
m,p-Xylenes	179601-23-1	<0.00625	0.0366	0.00625	mg/kg	09.12.19 00.22	U	1
o-Xylene	95-47-6	<0.00625	0.0183	0.00625	mg/kg	09.12.19 00.22	U	1
Total Xylenes	1330-20-7	<0.00625	0.0183	0.00625	mg/kg	09.12.19 00.22	U	1
Total BTEX		<0.00429	0.0183	0.00429	mg/kg	09.12.19 00.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	68-120	09.12.19 00.22	
a,a,a-Trifluorotoluene	98-08-8	104	%	71-121	09.12.19 00.22	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-3 (0-0.5)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-005	Date Collected:	09.10.19 09.40	Sample Depth:	0 - 0.5 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.248	3.66	0.248	mg/kg	09.12.19 00.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	76-123	09.12.19 00.22	
a,a,a-Trifluorotoluene	98-08-8	94	%	69-120	09.12.19 00.22	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-3 (0.5-1)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-006 Date Collected: 09.10.19 09.50 Sample Depth:0.5 - 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**174**	25.0	0.572	mg/kg	09.12.19 14.49		1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**14.1**	24.9	7.44	mg/kg	09.11.19 23.23	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.44	24.9	7.44	mg/kg	09.11.19 23.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	122	%	65-144	09.11.19 23.23	
n-Triacontane	638-68-6	150	%	46-152	09.11.19 23.23	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00854	0.0189	0.00854	mg/kg	09.12.19 00.46	U	1
Toluene	108-88-3	<0.00442	0.0189	0.00442	mg/kg	09.12.19 00.46	U	1
Ethylbenzene	100-41-4	<0.00582	0.0189	0.00582	mg/kg	09.12.19 00.46	U	1
m,p-Xylenes	179601-23-1	<0.00645	0.0378	0.00645	mg/kg	09.12.19 00.46	U	1
o-Xylene	95-47-6	<0.00645	0.0189	0.00645	mg/kg	09.12.19 00.46	U	1
Total Xylenes	1330-20-7	<0.00645	0.0189	0.00645	mg/kg	09.12.19 00.46	U	1
Total BTEX		<0.00442	0.0189	0.00442	mg/kg	09.12.19 00.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	68-120	09.12.19 00.46	
a,a,a-Trifluorotoluene	98-08-8	105	%	71-121	09.12.19 00.46	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-3 (0.5-1)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-006	Date Collected:	09.10.19 09.50	Sample Depth:	0.5 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.256	3.78	0.256	mg/kg	09.12.19 00.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	76-123	09.12.19 00.46	
a,a,a-Trifluorotoluene	98-08-8	93	%	69-120	09.12.19 00.46	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-4 (0-0.5)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-007 Date Collected: 09.10.19 10.00 Sample Depth:0 - 0.5 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.1**	25.0	0.572	mg/kg	09.12.19 15.01	J	1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<7.45	24.9	7.45	mg/kg	09.11.19 23.59	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.45	24.9	7.45	mg/kg	09.11.19 23.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	121	%	65-144	09.11.19 23.59	
n-Triacontane	638-68-6	144	%	46-152	09.11.19 23.59	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00871	0.0193	0.00871	mg/kg	09.12.19 01.09	U	1
Toluene	108-88-3	<0.00451	0.0193	0.00451	mg/kg	09.12.19 01.09	U	1
Ethylbenzene	100-41-4	<0.00593	0.0193	0.00593	mg/kg	09.12.19 01.09	U	1
m,p-Xylenes	179601-23-1	<0.00657	0.0385	0.00657	mg/kg	09.12.19 01.09	U	1
o-Xylene	95-47-6	<0.00657	0.0193	0.00657	mg/kg	09.12.19 01.09	U	1
Total Xylenes	1330-20-7	<0.00657	0.0193	0.00657	mg/kg	09.12.19 01.09	U	1
Total BTEX		<0.00451	0.0193	0.00451	mg/kg	09.12.19 01.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	68-120	09.12.19 01.09	
a,a,a-Trifluorotoluene	98-08-8	112	%	71-121	09.12.19 01.09	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-4 (0-0.5)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-007	Date Collected:	09.10.19 10.00	Sample Depth:	0 - 0.5 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.261	3.85	0.261	mg/kg	09.12.19 01.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	76-123	09.12.19 01.09	
a,a,a-Trifluorotoluene	98-08-8	101	%	69-120	09.12.19 01.09	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-4 (0.5-1)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-008 Date Collected: 09.10.19 10.10 Sample Depth:0.5 - 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**41.5**	25.0	0.572	mg/kg	09.12.19 15.26		1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<7.47	25.0	7.47	mg/kg	09.12.19 00.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.47	25.0	7.47	mg/kg	09.12.19 00.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	120	%	65-144	09.12.19 00.33	
n-Triacontane	638-68-6	144	%	46-152	09.12.19 00.33	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00770	0.0170	0.00770	mg/kg	09.12.19 01.34	U	1
Toluene	108-88-3	<0.00399	0.0170	0.00399	mg/kg	09.12.19 01.34	U	1
Ethylbenzene	100-41-4	<0.00525	0.0170	0.00525	mg/kg	09.12.19 01.34	U	1
m,p-Xylenes	179601-23-1	<0.00581	0.0341	0.00581	mg/kg	09.12.19 01.34	U	1
o-Xylene	95-47-6	<0.00581	0.0170	0.00581	mg/kg	09.12.19 01.34	U	1
Total Xylenes	1330-20-7	<0.00581	0.0170	0.00581	mg/kg	09.12.19 01.34	U	1
Total BTEX		<0.00399	0.0170	0.00399	mg/kg	09.12.19 01.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	68-120	09.12.19 01.34	
a,a,a-Trifluorotoluene	98-08-8	104	%	71-121	09.12.19 01.34	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-4 (0.5-1)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-008	Date Collected:	09.10.19 10.10	Sample Depth:	0.5 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.231	3.41	0.231	mg/kg	09.12.19 01.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	87	%	76-123	09.12.19 01.34	
a,a,a-Trifluorotoluene	98-08-8	94	%	69-120	09.12.19 01.34	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-5 (0-0.5)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-009 Date Collected: 09.10.19 10.20 Sample Depth:0 - 0.5 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**111**	25.0	0.572	mg/kg	09.12.19 15.38		1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**19.9**	24.9	7.46	mg/kg	09.12.19 11.17	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.46	24.9	7.46	mg/kg	09.12.19 11.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	117	%	65-144	09.12.19 11.17	
n-Triacontane	638-68-6	151	%	46-152	09.12.19 11.17	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00890	0.0197	0.00890	mg/kg	09.12.19 01.58	U	1
Toluene	108-88-3	<0.00461	0.0197	0.00461	mg/kg	09.12.19 01.58	U	1
Ethylbenzene	100-41-4	<0.00606	0.0197	0.00606	mg/kg	09.12.19 01.58	U	1
m,p-Xylenes	179601-23-1	<0.00671	0.0394	0.00671	mg/kg	09.12.19 01.58	U	1
o-Xylene	95-47-6	<0.00671	0.0197	0.00671	mg/kg	09.12.19 01.58	U	1
Total Xylenes	1330-20-7	<0.00671	0.0197	0.00671	mg/kg	09.12.19 01.58	U	1
Total BTEX		<0.00461	0.0197	0.00461	mg/kg	09.12.19 01.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	68-120	09.12.19 01.58	
a,a,a-Trifluorotoluene	98-08-8	106	%	71-121	09.12.19 01.58	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-5 (0-0.5)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-009	Date Collected:	09.10.19 10.20	Sample Depth:	0 - 0.5 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.267	3.94	0.267	mg/kg	09.12.19 01.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	76-123	09.12.19 01.58	
a,a,a-Trifluorotoluene	98-08-8	94	%	69-120	09.12.19 01.58	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-5 (0.5-1)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-010 Date Collected: 09.10.19 10.30 Sample Depth:0.5 - 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**169**	25.0	0.572	mg/kg	09.12.19 15.51		1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<7.53	25.2	7.53	mg/kg	09.12.19 01.41	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.53	25.2	7.53	mg/kg	09.12.19 01.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	129	%	65-144	09.12.19 01.41	
n-Triacontane	638-68-6	158	%	46-152	09.12.19 01.41	**

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00831	0.0184	0.00831	mg/kg	09.12.19 02.21	U	1
Toluene	108-88-3	<0.00430	0.0184	0.00430	mg/kg	09.12.19 02.21	U	1
Ethylbenzene	100-41-4	<0.00566	0.0184	0.00566	mg/kg	09.12.19 02.21	U	1
m,p-Xylenes	179601-23-1	<0.00627	0.0368	0.00627	mg/kg	09.12.19 02.21	U	1
o-Xylene	95-47-6	<0.00627	0.0184	0.00627	mg/kg	09.12.19 02.21	U	1
Total Xylenes	1330-20-7	<0.00627	0.0184	0.00627	mg/kg	09.12.19 02.21	U	1
Total BTEX		<0.00430	0.0184	0.00430	mg/kg	09.12.19 02.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	68-120	09.12.19 02.21	
a,a,a-Trifluorotoluene	98-08-8	105	%	71-121	09.12.19 02.21	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-5 (0.5-1)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-010	Date Collected:	09.10.19 10.30	Sample Depth:	0.5 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.249	3.68	0.249	mg/kg	09.12.19 02.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	87	%	76-123	09.12.19 02.21	
a,a,a-Trifluorotoluene	98-08-8	94	%	69-120	09.12.19 02.21	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-6 (0-0.5)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-011 Date Collected: 09.10.19 10.40 Sample Depth:0 - 0.5 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.85**	25.0	0.572	mg/kg	09.12.19 16.03	J	1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**12.5**	25.0	7.47	mg/kg	09.12.19 02.14	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.47	25.0	7.47	mg/kg	09.12.19 02.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	117	%	65-144	09.12.19 02.14	
n-Triacontane	638-68-6	140	%	46-152	09.12.19 02.14	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00906	0.0200	0.00906	mg/kg	09.12.19 04.21	U	1
Toluene	108-88-3	<0.00469	0.0200	0.00469	mg/kg	09.12.19 04.21	U	1
Ethylbenzene	100-41-4	<0.00617	0.0200	0.00617	mg/kg	09.12.19 04.21	U	1
m,p-Xylenes	179601-23-1	<0.00683	0.0401	0.00683	mg/kg	09.12.19 04.21	U	1
o-Xylene	95-47-6	<0.00683	0.0200	0.00683	mg/kg	09.12.19 04.21	U	1
Total Xylenes	1330-20-7	<0.00683	0.0200	0.00683	mg/kg	09.12.19 04.21	U	1
Total BTEX		<0.00469	0.0200	0.00469	mg/kg	09.12.19 04.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	68-120	09.12.19 04.21	
a,a,a-Trifluorotoluene	98-08-8	101	%	71-121	09.12.19 04.21	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-6 (0-0.5)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-011	Date Collected:	09.10.19 10.40	Sample Depth:	0 - 0.5 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.272	4.01	0.272	mg/kg	09.12.19 04.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86	%	76-123	09.12.19 04.21	
a,a,a-Trifluorotoluene	98-08-8	90	%	69-120	09.12.19 04.21	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-6 (0.5-1)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-012 Date Collected: 09.10.19 10.50 Sample Depth:0.5 - 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**29.0**	25.0	0.572	mg/kg	09.12.19 16.40		1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<7.55	25.2	7.55	mg/kg	09.12.19 02.47	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.55	25.2	7.55	mg/kg	09.12.19 02.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	118	%	65-144	09.12.19 02.47	
n-Triacontane	638-68-6	142	%	46-152	09.12.19 02.47	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00823	0.0182	0.00823	mg/kg	09.12.19 04.45	U	1
Toluene	108-88-3	<0.00426	0.0182	0.00426	mg/kg	09.12.19 04.45	U	1
Ethylbenzene	100-41-4	<0.00561	0.0182	0.00561	mg/kg	09.12.19 04.45	U	1
m,p-Xylenes	179601-23-1	<0.00621	0.0364	0.00621	mg/kg	09.12.19 04.45	U	1
o-Xylene	95-47-6	<0.00621	0.0182	0.00621	mg/kg	09.12.19 04.45	U	1
Total Xylenes	1330-20-7	<0.00621	0.0182	0.00621	mg/kg	09.12.19 04.45	U	1
Total BTEX		<0.00426	0.0182	0.00426	mg/kg	09.12.19 04.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	68-120	09.12.19 04.45	
a,a,a-Trifluorotoluene	98-08-8	109	%	71-121	09.12.19 04.45	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-6 (0.5-1)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-012	Date Collected:	09.10.19 10.50	Sample Depth:	0.5 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.247	3.64	0.247	mg/kg	09.12.19 04.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	76-123	09.12.19 04.45	
a,a,a-Trifluorotoluene	98-08-8	98	%	69-120	09.12.19 04.45	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-7 (0-0.5)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-013 Date Collected: 09.10.19 11.00 Sample Depth:0 - 0.5 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**27.2**	25.0	0.572	mg/kg	09.12.19 16.53		1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**8.09**	25.2	7.53	mg/kg	09.12.19 03.21	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.53	25.2	7.53	mg/kg	09.12.19 03.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	129	%	65-144	09.12.19 03.21	
n-Triacontane	638-68-6	146	%	46-152	09.12.19 03.21	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00897	0.0198	0.00897	mg/kg	09.12.19 05.09	U	1
Toluene	108-88-3	<0.00464	0.0198	0.00464	mg/kg	09.12.19 05.09	U	1
Ethylbenzene	100-41-4	<0.00611	0.0198	0.00611	mg/kg	09.12.19 05.09	U	1
m,p-Xylenes	179601-23-1	<0.00677	0.0397	0.00677	mg/kg	09.12.19 05.09	U	1
o-Xylene	95-47-6	<0.00677	0.0198	0.00677	mg/kg	09.12.19 05.09	U	1
Total Xylenes	1330-20-7	<0.00677	0.0198	0.00677	mg/kg	09.12.19 05.09	U	1
Total BTEX		<0.00464	0.0198	0.00464	mg/kg	09.12.19 05.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	68-120	09.12.19 05.09	
a,a,a-Trifluorotoluene	98-08-8	106	%	71-121	09.12.19 05.09	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-7 (0-0.5)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-013	Date Collected:	09.10.19 11.00	Sample Depth:	0 - 0.5 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.269	3.97	0.269	mg/kg	09.12.19 05.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	76-123	09.12.19 05.09	
a,a,a-Trifluorotoluene	98-08-8	94	%	69-120	09.12.19 05.09	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-7 (0.5-1)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-014 Date Collected: 09.10.19 11.10 Sample Depth:0.5 - 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**25.6**	25.0	0.572	mg/kg	09.12.19 17.05		1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**23.2**	24.8	7.42	mg/kg	09.12.19 03.54	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.42	24.8	7.42	mg/kg	09.12.19 03.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	79	%	65-144	09.12.19 03.54	
n-Triacontane	638-68-6	95	%	46-152	09.12.19 03.54	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00826	0.0183	0.00826	mg/kg	09.12.19 05.33	U	1
Toluene	108-88-3	<0.00428	0.0183	0.00428	mg/kg	09.12.19 05.33	U	1
Ethylbenzene	100-41-4	<0.00563	0.0183	0.00563	mg/kg	09.12.19 05.33	U	1
m,p-Xylenes	179601-23-1	<0.00623	0.0366	0.00623	mg/kg	09.12.19 05.33	U	1
o-Xylene	95-47-6	<0.00623	0.0183	0.00623	mg/kg	09.12.19 05.33	U	1
Total Xylenes	1330-20-7	<0.00623	0.0183	0.00623	mg/kg	09.12.19 05.33	U	1
Total BTEX		<0.00428	0.0183	0.00428	mg/kg	09.12.19 05.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	68-120	09.12.19 05.33	
a,a,a-Trifluorotoluene	98-08-8	108	%	71-121	09.12.19 05.33	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-7 (0.5-1)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-014	Date Collected:	09.10.19 11.10	Sample Depth:	0.5 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.248	3.66	0.248	mg/kg	09.12.19 05.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	76-123	09.12.19 05.33	
a,a,a-Trifluorotoluene	98-08-8	96	%	69-120	09.12.19 05.33	

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Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-8 (0-0.5)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-015 Date Collected: 09.10.19 11.20 Sample Depth:0 - 0.5 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101301

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5.69**	25.0	0.572	mg/kg	09.12.19 17.18	J	1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**15.4**	25.2	7.53	mg/kg	09.12.19 04.30	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.53	25.2	7.53	mg/kg	09.12.19 04.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	124	%	65-144	09.12.19 04.30	
n-Triacontane	638-68-6	146	%	46-152	09.12.19 04.30	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00811	0.0180	0.00811	mg/kg	09.12.19 05.57	U	1
Toluene	108-88-3	<0.00420	0.0180	0.00420	mg/kg	09.12.19 05.57	U	1
Ethylbenzene	100-41-4	<0.00553	0.0180	0.00553	mg/kg	09.12.19 05.57	U	1
m,p-Xylenes	179601-23-1	<0.00612	0.0359	0.00612	mg/kg	09.12.19 05.57	U	1
o-Xylene	95-47-6	<0.00612	0.0180	0.00612	mg/kg	09.12.19 05.57	U	1
Total Xylenes	1330-20-7	<0.00612	0.0180	0.00612	mg/kg	09.12.19 05.57	U	1
Total BTEX		<0.00420	0.0180	0.00420	mg/kg	09.12.19 05.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	68-120	09.12.19 05.57	
a,a,a-Trifluorotoluene	98-08-8	102	%	71-121	09.12.19 05.57	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-8 (0-0.5)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-015	Date Collected:	09.10.19 11.20	Sample Depth:	0 - 0.5 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.243	3.59	0.243	mg/kg	09.12.19 05.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	83	%	76-123	09.12.19 05.57	
a,a,a-Trifluorotoluene	98-08-8	91	%	69-120	09.12.19 05.57	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id: **HS-8 (0.5-1)** Matrix: Soil Date Received:09.11.19 09.04

Lab Sample Id: 636499-016 Date Collected: 09.10.19 11.30 Sample Depth:0.5 - 1 ft

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: RNL % Moisture:

Analyst: RNL Date Prep: 09.12.19 09.30 Basis: Wet Weight

Seq Number: 3101302

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.4**	25.0	0.572	mg/kg	09.12.19 18.20	J	1

Analytical Method: DRO-ORO By SW8015B Prep Method: SW8015P

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101262

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**15.1**	24.8	7.41	mg/kg	09.12.19 05.04	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.41	24.8	7.41	mg/kg	09.12.19 05.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	124	%	65-144	09.12.19 05.04	
n-Triacontane	638-68-6	149	%	46-152	09.12.19 05.04	

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MIT % Moisture:

Analyst: MIT Date Prep: 09.11.19 12.00 Basis: Wet Weight

Seq Number: 3101206

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00899	0.0199	0.00899	mg/kg	09.12.19 06.21	U	1
Toluene	108-88-3	<0.00465	0.0199	0.00465	mg/kg	09.12.19 06.21	U	1
Ethylbenzene	100-41-4	<0.00612	0.0199	0.00612	mg/kg	09.12.19 06.21	U	1
m,p-Xylenes	179601-23-1	<0.00678	0.0398	0.00678	mg/kg	09.12.19 06.21	U	1
o-Xylene	95-47-6	<0.00678	0.0199	0.00678	mg/kg	09.12.19 06.21	U	1
Total Xylenes	1330-20-7	<0.00678	0.0199	0.00678	mg/kg	09.12.19 06.21	U	1
Total BTEX		<0.00465	0.0199	0.00465	mg/kg	09.12.19 06.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	68-120	09.12.19 06.21	
a,a,a-Trifluorotoluene	98-08-8	115	%	71-121	09.12.19 06.21	

Certificate of Analytical Results 636499

Terracon-Lubbock, Lubbock, TX

Okeanos

Sample Id:	**HS-8 (0.5-1)**	Matrix:	Soil	Date Received:	09.11.19 09.04
Lab Sample Id:	636499-016	Date Collected:	09.10.19 11.30	Sample Depth:	0.5 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	09.11.19 12.00	Basis:	Wet Weight
Seq Number:	3101210				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.269	3.98	0.269	mg/kg	09.12.19 06.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	76-123	09.12.19 06.21	
a,a,a-Trifluorotoluene	98-08-8	103	%	69-120	09.12.19 06.21	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 636499

Terracon-Lubbock

Okeanos

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3101301 — Matrix: Solid — Date Prep: 09.12.19
MB Sample Id: 7686118-1-BLK — LCS Sample Id: 7686118-1-BKS — LCSD Sample Id: 7686118-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.572	250	240	96	238	95	90-110	1	20	mg/kg	09.12.19 12:20	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3101302 — Matrix: Solid — Date Prep: 09.12.19
MB Sample Id: 7686119-1-BLK — LCS Sample Id: 7686119-1-BKS — LCSD Sample Id: 7686119-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.572	250	242	97	240	96	90-110	1	20	mg/kg	09.12.19 17:55	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3101301 — Matrix: Soil — Date Prep: 09.12.19
Parent Sample Id: 636499-001 — MS Sample Id: 636499-001 S — MSD Sample Id: 636499-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	464	250	760	118	790	130	80-120	4	20	mg/kg	09.12.19 13:09	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3101301 — Matrix: Soil — Date Prep: 09.12.19
Parent Sample Id: 636499-011 — MS Sample Id: 636499-011 S — MSD Sample Id: 636499-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.85	250	249	96	246	95	80-120	1	20	mg/kg	09.12.19 16:16	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3101302 — Matrix: Soil — Date Prep: 09.12.19
Parent Sample Id: 636499-016 — MS Sample Id: 636499-016 S — MSD Sample Id: 636499-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.4	250	242	92	250	95	80-120	3	20	mg/kg	09.12.19 18:32	

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

QC Summary 636499

Terracon-Lubbock

Okeanos

Analytical Method: DRO-ORO By SW8015B — Prep Method: SW8015P
Seq Number: 3101262 — Matrix: Solid — Date Prep: 09.11.19
MB Sample Id: 7685987-1-BLK — LCS Sample Id: 7685987-1-BKS — LCSD Sample Id: 7685987-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	<7.48	100	84.7	85	85.6	86	63-139	1	20	mg/kg	09.11.19 15:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Tricosane	113		121		124		65-144	%	09.11.19 15:56
n-Triacontane	113		110		110		46-152	%	09.11.19 15:56

Analytical Method: DRO-ORO By SW8015B — Prep Method: SW8015P
Seq Number: 3101262 — Matrix: Soil — Date Prep: 09.11.19
Parent Sample Id: 636499-001 — MS Sample Id: 636499-001 S — MSD Sample Id: 636499-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	<7.48	100	96.2	96	81.2	81	63-139	17	20	mg/kg	09.11.19 19:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Tricosane	142		145	**	65-144	%	09.11.19 19:20
n-Triacontane	149		154	**	46-152	%	09.11.19 19:20

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3101206 — Matrix: Solid — Date Prep: 09.11.19
MB Sample Id: 7685978-1-BLK — LCS Sample Id: 7685978-1-BKS — LCSD Sample Id: 7685978-1-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	1.95	98	1.83	92	55-120	6	20	mg/kg	09.11.19 17:32	
Toluene	<0.00468	2.00	1.89	95	1.84	92	77-120	3	20	mg/kg	09.11.19 17:32	
Ethylbenzene	<0.00616	2.00	2.03	102	1.98	99	77-120	2	20	mg/kg	09.11.19 17:32	
m,p-Xylenes	<0.00682	4.00	3.98	100	3.87	97	78-120	3	20	mg/kg	09.11.19 17:32	
o-Xylene	<0.00682	2.00	1.97	99	1.95	98	78-120	1	20	mg/kg	09.11.19 17:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	103		108		98		68-120	%	09.11.19 17:32
a,a,a-Trifluorotoluene	102		103		99		71-121	%	09.11.19 17:32

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

QC Summary 636499

Terracon-Lubbock

Okeanos

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3101206 Matrix: Soil Date Prep: 09.11.19
Parent Sample Id: 636499-001 MS Sample Id: 636499-001 S MSD Sample Id: 636499-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00859	1.90	1.86	98	1.95	99	54-120	5	25	mg/kg	09.11.19 21:09	
Toluene	<0.00445	1.90	1.83	96	1.90	97	57-120	4	25	mg/kg	09.11.19 21:09	
Ethylbenzene	<0.00586	1.90	1.94	102	1.96	100	58-131	1	25	mg/kg	09.11.19 21:09	
m,p-Xylenes	0.0116	3.80	3.78	99	3.92	99	62-124	4	25	mg/kg	09.11.19 21:09	
o-Xylene	<0.00648	1.90	1.84	97	1.94	99	62-124	5	25	mg/kg	09.11.19 21:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	104		95		68-120	%	09.11.19 21:09
a,a,a-Trifluorotoluene	109		104		71-121	%	09.11.19 21:09

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B
Seq Number: 3101210 Matrix: Solid Date Prep: 09.11.19
MB Sample Id: 7685980-1-BLK LCS Sample Id: 7685980-1-BKS LCSD Sample Id: 7685980-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<0.271	20.0	18.4	92	17.0	85	35-129	8	20	mg/kg	09.11.19 18:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	92		124	**	114		76-123	%	09.11.19 18:20
a,a,a-Trifluorotoluene	91		99		93		69-120	%	09.11.19 18:20

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B
Seq Number: 3101210 Matrix: Soil Date Prep: 09.11.19
Parent Sample Id: 636499-001 MS Sample Id: 636499-001 S MSD Sample Id: 636499-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	0.496	19.9	17.8	87	18.4	91	35-129	3	20	mg/kg	09.11.19 21:57	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	126	**	125	**	76-123	%	09.11.19 21:57
a,a,a-Trifluorotoluene	99		96		69-120	%	09.11.19 21:57

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

636499

636499

IR4

Terracon

CHAIN OF CUSTODY RECORD

Laboratory: Xenco
Address: 6701 Aberdeen
Lubbock, Texas 79424

Phone:
Contact: Joseph Guesnier (806-544-9276)
SRS #:

Office Location: Lubbock
Project Manager: Joseph Guesnier
Sampler's Name: Bryant McBrayer
Sampler's Signature:

Project Number: AR197105
Project Name: Okeanos

ANALYSIS REQUESTED

LAB USE ONLY
DUE DATE:
TEMP OF COOLER WHEN RECEIVED (°C): +0.9 / 1.0
Page ___ of ___

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No. Type of Containers: 2 oz Glass	4 oz Glass	5035 kit	40 ml VOA	Chloride (EPA Method 300)	TPH Extended 8015	BTEX (EPA Method 8021B)	Hold	Lab Sample ID
S	9/10/2019	9:00	X		HS-1 (0-0.5)	0'	0.5'		X			X	X	X		1
S	9/10/2019	9:10	X		HS-1 (0.5-1)	0.5'	1'		X			X	X	X		2
S	9/10/2019	9:20	X		HS-2 (0-.5)	0'	0.5'		X			X	X	X		3
S	9/10/2019	9:30	X		HS-2 (0.5-1)	0.5'	1'		X			X	X	X		4
S	9/10/2019	9:40	X		HS-3 (0-.5)	0'	0.5'		X			X	X	X		5
S	9/10/2019	9:50	X		HS-3 (0.5-1)	0.5'	1'		X			X	X	X		6
S	9/10/2019	10:00	X		HS-4 (0-0.5)	0'	0.5'		X			X	X	X		7
S	9/10/2019	10:10	X		HS-4 (0.5-1)	0.5'	1'		X			X	X	X		8
S	9/10/2019	10:20	X		HS-5 (0-0.5)	0'	0.5'		X			X	X	X		9
S	9/10/2019	10:30	X		HS-5 (0.5-1)	0.5'	1'		X			X	X	X		10
S	9/10/2019	10:40	X		HS-6 (0-0.5)	0'	0.5'		X			X	X	X		11
S	9/10/2019	10:50	X		HS-6 (0.5-1)	0.5'	1'		X			X	X	X		12
S	9/10/2019	11:00	X		HS-7 (0-0.5)	0'	0.5'		X			X	X	X		13
S	9/10/2019	11:10	X		HS-7 (0.5-1)	0.5'	1'		X			X	X	X		14
S	9/10/2019	11:20	X		HS-8 (0-0.5)	0'	0.5'		X			X	X	X		15
S	9/10/2019	11:30	X		HS-8 (0.5-1)	0.5'	1'		X			X	X	X		16

TURNAROUND TIME: ☐ Normal ☒ 48-Hour Rush ☐ 24-Hour Rush

TRRP Laboratory Review Checklist ☐ Yes ☐ No

Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
	9/11/19	9:04		9/11/19	9:04
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:

NOTES: Client: Spur

e-mail results to:

john.fergerson@terracon.com

irguesnier@terracon.com

Matrix: WW-Wastewater; W - Water; S - Soil; L - Liquid; A - Air Bag; C - Charcoal tube; SL - Sludge
Container: VOA - 40 ml vial; A/G - Amber Glass 1L; 250 ml = Glass wide mouth; P/O - Plastic or other _____

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 09/11/2019 09:04:00 AM

Work Order #: 636499

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	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Chlorides 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: 09/11/2019
Brenda Ward

Checklist reviewed by: Jessica Kramer Date: 09/11/2019
Jessica Kramer

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, Solaris Water Midstream, as reflected in our proposal (PA4197040).

Additional Scope Limitations

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 our recommendations are based solely upon reformation executed within the scope of these services.

Reliance

This report has been prepared for the exclusive use of Solaris Water Midstream, 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 Solaris Water Midstream and Terracon. Any unauthorized distribution or reuse is at Solaris Water Midstream sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal and Solaris Water Midstream 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 Solaris Water Midstream and all relying parties unless otherwise agreed in writing.