

A spill calculation worksheet was not prepared for this spill.



November 19, 2025

**New Mexico Oil Conservation Division**

1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**Re: Remediation Work Plan  
Poker Lake Unit #153  
Incident Numbers nJMW1219345739, nJMW1228429248, nJMW1228428008,  
nJMW1231129593, and nHMP1441828179  
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following *Remediation Work Plan (Work Plan)* to propose sampling activities to address impacted soil identified at the Poker Lake Unit #153 (Site). On August 6, 2025, a *Closure Request Addendum (2025 Addendum)* was submitted to the New Mexico Oil Conservation Division (NMOCD) as a supplement to the July 26, 2021 *Closure Request Addendum (2021 Addendum)* and March 20, 2020 *Closure Request* detailing delineation activities at the Poker Lake Unit #153 (Site). The *2025 Addendum* was denied by the NMOCD on September 24, 2025. In the denial, NMOCD requested additional delineation sampling activities. The following *Work Plan* proposes additional soil sampling and potential remediation activities in support of requesting No Further Action (NFA) for Incident Numbers nJMW1219345739, nJMW1228429248, nJMW1228428008, nJMW1231129593, and nHMP1441828179.

**SITE DESCRIPTION AND RELEASE BACKGROUND**

The Site is located in Unit G, Section 6, Township 24 South, Range 30 East, in Eddy County, New Mexico (32.248866°, -103.919096°; Figure 1) and is associated with oil and gas exploration and production operations on Federal land managed by the Bureau of Land Management (BLM). This Site name was referred to as the Poker Lake Unit Delaware C Saltwater Disposal Battery/Delaware C Tank Battery in prior submittals and has been changed to reflect the current Site name referenced on the NMOCD Permitting website.

On May 30, 2012, a pipe fitting on the discharge line from Saltwater Disposal (SWD) pump broke and caused the release of approximately 25 barrels (bbls) of produced water. Approximately 1,960 square feet of pasture west of the tank battery was affected by the release. No released fluids were recovered. The former operator reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141) on June 24, 2012 and was assigned Remediation Permit (RP) Number 2RP-1205 and Incident Number nJMW1219345739.

On August 18, 2012, the water transfer pumps failed, causing produced water tanks to overflow. Approximately 10 bbls of crude oil and 20 bbls of produced water were released. Approximately 900 square feet of the tank battery containment and 2,000 square feet of pasture west of the tank battery were affected by the release. No released fluids were recovered. Approximately 40 cubic yards of

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impacted soil were excavated from the containment. The excavation was sampled, backfilled, and a liner was installed. The former operator reported the release to the NMOCD on a Form C-141 on September 5, 2012, and the release was assigned RP Number 2RP-1305 and Incident Number nJMW1228429248.

On September 2, 2012, the truck load line valve was left open, allowing approximately 200 bbls of produced water to spill onto the surface of the caliche pad. Approximately 11,770 square feet of pad and lease road, and 7,060 square feet of pasture were affected by the release. A vacuum truck recovered 5 bbls of free-standing fluid, and a backhoe was used to scrape the saturated soil. The former operator reported the release to the NMOCD on a Form C-141 on September 5, 2012. The release was assigned RP Number 2RP-1304 and Incident Number nJMW1228428008.

On September 19, 2012, a connection going from the charge pumps to the H-pump failed. The pumps were shut down upon discovery. Approximately 650 bbls of produced water were released; no released fluids were recovered. The well pad, lease road, and adjacent pasture were affected by the release. Delineation activities were scheduled to determine the extent of impacted soil at the Site. The former operator reported the release to the NMOCD on a Form C-141 on September 28, 2012, and the release was assigned RP Number 2RP-1383 and Incident Number nJMW1231129593.

On April 21, 2014, a high-pressure fiberglass line coupling broke at the threads, causing approximately 200 bbls of produced water to release. A vacuum truck recovered approximately 15 bbls of produced water. Approximately 4,000 square feet of caliche pad, 1,300 square feet of lease road, and 4,200 square feet of pasture were affected by the release. Remediation of all releases was scheduled to take place during the upcoming saltwater disposal dismantling and tank battery relocation activities. The former operator reported the release to the NMOCD on a Form C-141 on April 24, 2014. The release was assigned RP Number 2RP-2264 and Incident Number nHMP1441828179.

Although all five of the releases occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. Since the releases occurred in the same general area of the well pad, lease road, and pasture, Site assessment and soil sampling activities were completed to address and close all five releases simultaneously.

In 2018, 16 delineation soil samples (SS01 through SS16) were collected around the release area to assess the lateral extent of impacted soil. Locations SS01, SS02, and SS06 were collected at ground surface, and SS03 through SS05 and SS07 through SS16 were compiled from a depth of approximately 0.5 feet below ground surface (bgs). Boreholes and potholes were advanced at 24 locations on the well pad, lease road, and pasture to assess the vertical and lateral extents of impacted soil. Boreholes BH01 through BH16 were advanced to depths ranging from 2 feet to 14 feet bgs at the approximate locations of preliminary soil samples SS01 through SS16, and one discrete sample was collected from each boring. Laboratory analytical results indicated that total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO) and total TPH concentrations exceeded the Closure Criteria in preliminary soil sample SS07. All other samples were compliant with Closure Criteria. In 2019, potholes PH17 through PH24 were advanced to a depth of 2 feet bgs within the well pad release area. Discrete soil samples were collected at 1-foot and 2 feet bgs from each pothole. Potholes PH18, PH19, and PH20 were advanced around soil sample SS07 where hydrocarbon impacted soil was initially identified. Laboratory results from PH18 through PH20 reported that no TPH impacted soil remained in the area around delineation soil sample SS07. Based on laboratory analytical results, NFA was requested for Incident Numbers nJMW1219345739, nJMW1228429248, nJMW1228428008, nJMW1231129593, and nHMP1441828179 in the 2020 *Closure Request*.

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On February 22, 2021, NMOCD denied the initial *Closure Request* for the following reasons:

- *Depth to groundwater needs a better evaluation and suggest a bore hole to 51 feet bgs to verify.*
- *Also there needs to be more subsurface soil sampling done at deeper intervals. Over 1000 barrels of produced water was not recovered, and though there was some scraping of surface soils, it has been several years since these multiple releases and OCD needs to be comfortable that the chloride in soils potential has been assessed at possible leaching depths.*

The 2021 *Addendum* was submitted on July 26, 2021, documenting drilling of a depth to water boring completed within 0.5 miles of the Site and additional vertical delineation soil sampling at the Site in response to the *Closure Request* denial. A soil boring was advanced to 105 feet and confirmed that the depth to groundwater is greater than 100 feet bgs. Therefore, the original Table I Closure Criteria identified in the *Closure Request* were confirmed as applicable for the Site. Five boreholes were advanced via hand auger in the pasture west of the pad at the original BH08 through BH12 borehole locations. Delineation samples BH08A through BH12A were collected from the boreholes from a depth of 4 feet bgs. All confirmation soil samples met the Closure Criteria so NFA was requested. Additional details of this work are summarized in the 2021 *Addendum*.

On October 26, 2022, NMOCD denied the 2021 *Addendum* for the following reasons:

- *The OCD requires that off pad closure samples confirm that the top 4 feet of the release area are compliant with the spill rule. All samples must be in one-foot increments. The samples provided in this report are representative of the constituents at 2 and 4 only.*
- *All off pad areas must contain a minimum of 4 feet non-waste containing uncontaminated, earthen material with chloride concentrations less than 600 mg/kg. In the pasture area, 4 feet below the ground surface, soil contamination limits revert to Table 1 "Closure Criteria for Soils Impacted by a Release" included in the spill rule.*

To comply with NMOCD comments in the 2021 *Addendum* denial correspondence, aforementioned sampling locations BH08 through BH12 located in the pasture west of the pad were sampled at depths of 1-foot, 2 feet, 3 feet and 4 feet bgs using a hand auger on February 6, 2024. Additionally, previous soil sampling results were reviewed to determine areas where waste-containing soil was not fully defined to the reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH that applies to the top 4 feet of soil. Sampling location SS07 reported TPH above the Closure Criteria, and locations SS01, SS02, SS12, BH15, PH17, PH19 through PH23 reported chloride or TPH concentrations above the reclamation requirement in the top 4 feet of soil at the Site. Between February and May 2025, these 11 locations were advanced to a depth of 4 feet bgs using a backhoe or hand auger as the sampling location allowed to determine current impacts. Soil was field screened at one-foot intervals for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Based on field screening results, step out boring locations BH17 through BH20 were advanced with a hand auger, and locations PH25 through PH33 were completed with a backhoe to laterally define impacts at the Site. All locations were advanced to a depth of 4 feet bgs with the exception of PH23, PH25, and PH26 where refusal was encountered at 3 feet bgs. Samples were collected from the interval previously reporting impacts, where applicable, the interval reporting the highest field screening, and the deepest interval.

Following the receipt of the analytical results, additional delineation was required north and west of location BH18. Two sampling locations (BH21 and BH22) were advanced to 4 feet bgs using a hand auger to define the extent of waste-containing soil reported from BH18. Laboratory analytical results confirm that soil in the pasture was in compliance with the appropriate Closure Criteria and waste-



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containing soil on pad was fully defined to the reclamation requirement. XTO again requested closure for Incident Numbers nJMW1219345739, nJMW1228429248, nJMW1228428008, nJMW1231129593, and nHMP1441828179 in the 2025 Addendum. The 2025 Addendum, including the Closure Request and 2021 Addendum, is attached as Appendix A. Historical analytical results are summarized in Table 1.

On September 24, 2025, NMOCD denied the 2025 Addendum for the following reasons:

- *The submitted report does not address the 10/26/2022 reason of rejection: "The OCD requires that off pad closure samples confirm that the top 4 feet of the release area are compliant with the spill rule. All samples must be in one-foot increments." For all of the recollected samples in the pasture to the west, surface samples were not collected. For BH 15, the samples are representative of the constituents at 1', 2' and 4' only and for SS12 samples are representative of the surface only. Discrete samples are to be collected at surface, 1', 2', 3' and 4' depth at BH15 and SS12 locations as contaminants were previously found in these locations. If contaminants are found above the reclamation limit, remediation must occur pursuant to 19.15.29.12 and 13 NMAC.*
- *This report covers five separate releases, totaling 1095 BBL of produced water spilled, and there is no documentation showing any remediation has occurred. Placement of the recollected BH08 is north of where it was originally located. Referring to Figure 3 in the 10/26/22 rejected closure report, it appears it had been collected within the nonvegetated area at this location: 32.248965, -103.919350, where you can see runoff drains off the pad. Samples will need to be discrete and collected at surface, 1', 2', 3' and 4' depths. In addition, OCD would like delineation samples collected between the release points show on Figure 2, directly behind the tank battery at 32.248636, -103.919242. Samples should be discrete and collected at surface, 1', 2', 3' and 4'.*
- *This C-141 application was submitted as a deferral request however the report is asking for closure. Remediation on an active site can be deferred in areas immediately under or around production equipment such as production tanks, wellheads, and pipelines where remediation could cause a major facility deconstruction so long as the contamination is fully delineated and does not cause an imminent risk to human health, the environment, or ground water. The deferral request must specify which sample points are being requested for deferral including an explanation why the contaminants can't be removed. From the initial C-141 submitted for NJMW1231129593 on 10/01/2012, it said "A rig is being scheduled to determine the vertical extent under the containment and all the impacted area." There is no evidence the contamination was ever delineated beneath the tank battery and multiple spills have occurred here. This will need to be completed prior to approving a deferral as this is a legacy release and chlorides have leached through the soil column over time. In addition, Google Earth imagery of the tank battery on 8/21/2024 shows what appears to be a release within the entire tank battery. Has this been reported? Please advise.*

## CLOSURE CRITERIA

Based on the results of the Site Characterization presented in the 2021 Addendum, the following NMOCD Table I Closure Criteria were applied:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg

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- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

In accordance with the denial of the *2021 Addendum*, a reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH applies to the top 4 feet of areas to be immediately reclaimed. Additionally, impacts on-pad must be delineated to the reclamation requirement, per 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be reclaimed following Site decommissioning. Potential Site receptors are identified on Figure 1.

## PROPOSED REMEDIATION WORK PLAN

To comply with NMOCD comments in the *2025 Addendum* denial correspondence, XTO proposes the following sampling be completed at the Site:

- Discrete soil samples will be collected from previous sampling location BH15 at depths of 0.5 feet bgs to represent surface concentrations and 3 feet bgs to adequately characterize the soil in one foot increments from ground surface to 4 feet bgs. Samples have previously been submitted from depths of 1-foot, 2 feet and 4 feet bgs at this location.
- Discrete soil samples will be collected from previous sampling location SS12 at depths of 1-foot, 2-feet, 3-feet and 4-feet bgs to fully evaluate the soil in one foot increments from ground surface to 4 feet bgs. The sampling location was previously sampled in August 2018 and February 2025 at a depth of 0.5 feet to represent surface concentrations.
- Discrete soil samples will be collected from previous sampling locations BH08 through BH12 at a depth of 0.5 feet bgs to represent surface concentrations. These five locations have been previously sampled at depths of 1-foot, 2 feet, 3 feet and 4 feet bgs.
- Discrete soil samples will be collected at depths of 0.5 feet to represent surface conditions, 1-foot, 2 feet, 3 feet and 4 feet bgs at two NMOCD specified locations (32.248965, -103.919350 and 32.248636, -103.919242).

Figure 2 illustrates previous and proposed delineation soil sampling locations. All soil samples will be field screened for VOCs and chloride using the above-described methods. The soil samples will be placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The samples will be transported under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, for analysis of BTEX using United States Environmental Protection Agency (EPA) Method 8021B; TPH following United States Environmental Protection Agency (EPA) Method 8015M/D; and chloride following Standard Method 4500. The sampling locations will be mapped utilizing a handheld Global Positioning System (GPS) unit.

Sampling locations reporting COC concentrations above the appropriate Closure Criteria and/or reclamation requirement, where applicable, will be remediated via excavation. If soil impacts exceeding Closure Criteria are unable to be removed due to the presence of active equipment, the impacts will be defined vertically and laterally prior to requesting a deferral to remain in-situ until decommissioning of the tank battery. Furthermore, waste-containing soil identified in the top 4 feet will be delineated vertically and laterally. The presence of the waste-containing soil present on-pad does not cause an imminent risk to human health, the environment, or groundwater. XTO will reclaim soil reporting COC concentrations exceeding the reclamation requirement but compliant with Closure Criteria during final Site reclamation.

Regarding the possible release suspected by the NMOCD after reviewing the August 21, 2024 Google Earth imagery of the tank battery, XTO's Poker Lake Unit Battery 184 shares the same pad as the Site

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and the Delaware C. XTO did not have a release isolated to the containments at any of those locations during the six months prior to August 21, 2024. The liner may have been wet due to rain in the previous days. The liner itself is dark in color and the google earth imagery may have been taken when shadows caused the liner to appear wet. The dark appearance of the liner is not related to a release occurring within the containment.

On March 5, 2025, a release of approximately 20 bbls of produced water occurred within the lined containment in the southwest portion of the tank battery, referred to as XTO's Poker Lake Unit Battery 184. The release was assigned Incident Number nAPP2506458430. After all fluids were recovered and the lined containment was cleaned, a small tear was observed on the liner floor. Four delineation samples were collected surrounding the containment and one borehole was advanced via hand auger to a depth of 1-foot bgs at the tear location. Samples were submitted from 0.5 feet and 1-foot bgs, and the tear in the lined containment was patched following sampling activities. All delineation samples reported COCs compliant with Closure Criteria. XTO submitted a *Closure Request* for Incident Number nAPP2506458430 on September 18, 2025 that was approved by the NMOCD on September 23, 2025. The results from this investigation provide analytical results beneath the liner as requested by the NMOCD in the 2025 *Addendum* denial correspondence for the Site. The delineation soil sampling locations are shown on Figure 2. Table 1 includes the analytical results for Incident Number nAPP2506458430, and the laboratory report is attached to this Work Plan as Appendix B.

XTO will complete the delineation and soil sampling activities within 90 days of the date of approval of this *Work Plan*. XTO believes the scope of work described above meets the requirements set forth in 19.15.29 NMAC, addresses the NMOCD's concerns outlined in the denial, and is protective of human health, the environment, and groundwater. As such, XTO respectfully requests approval of this *Work Plan* for Incident Numbers nJMW1219345739, nJMW1228429248, nJMW1228428008, nJMW1231129593, and nHMP1441828179.

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or [tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com).

Sincerely,  
**Ensolum, LLC**



Katherine Kahn, P.G.  
Senior Managing Geologist



Tacoma Morrissey, MS  
Associate Principal

cc: Robert Woodall, XTO  
Richard Kotzure, XTO  
Bureau of Land Management

Appendices:

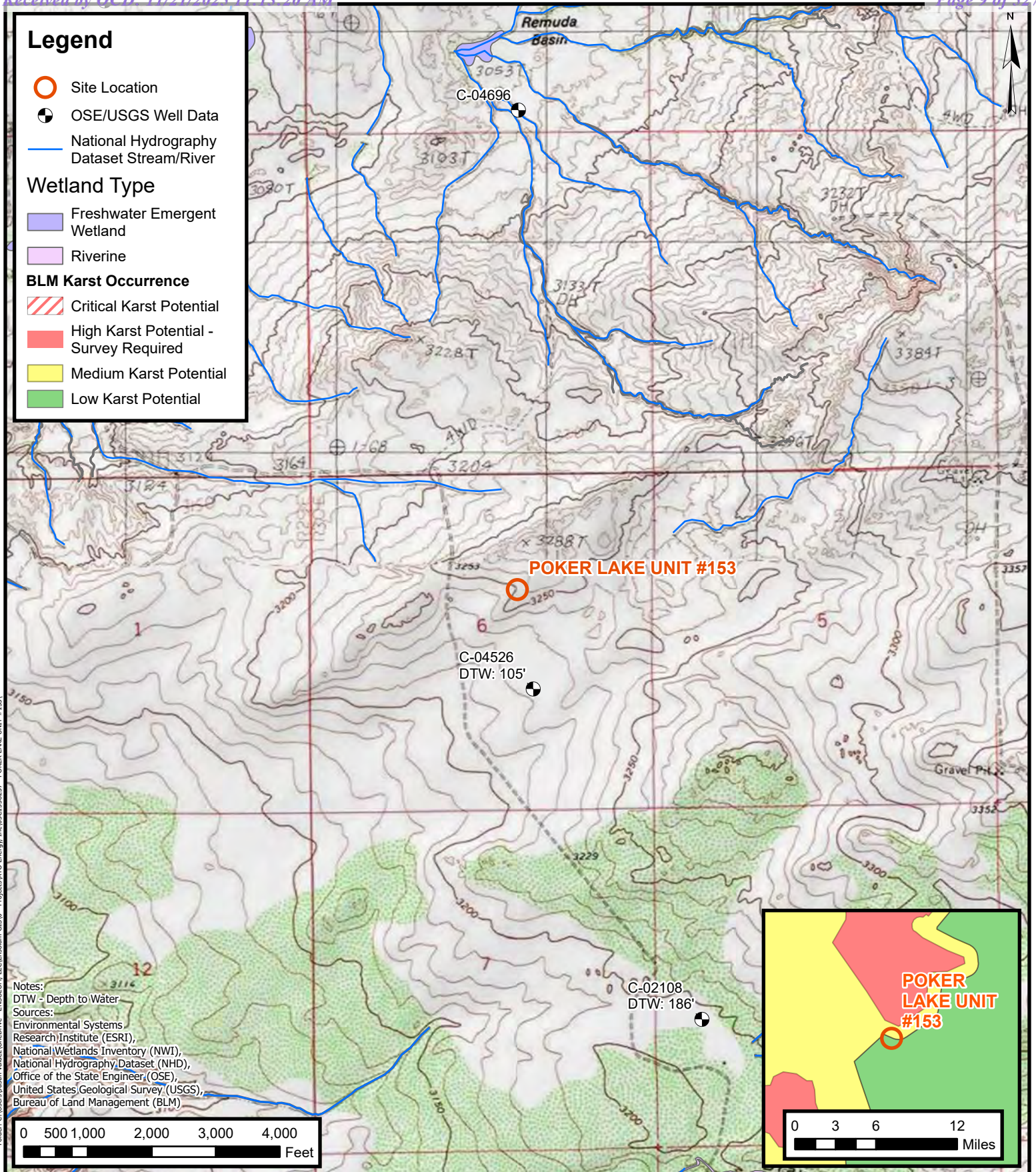
Figure 1 Site Receptor Map  
Figure 2 Existing and Proposed Delineation Soil Sample Locations  
Table 1 Soil Sample Analytical Results  
Appendix A August 6, 2025 *Closure Request Addendum*  
Appendix B Incident Number nAPP2506458430 Laboratory Analytical Reports & Chain-of-Custody Documentation



FIGURES

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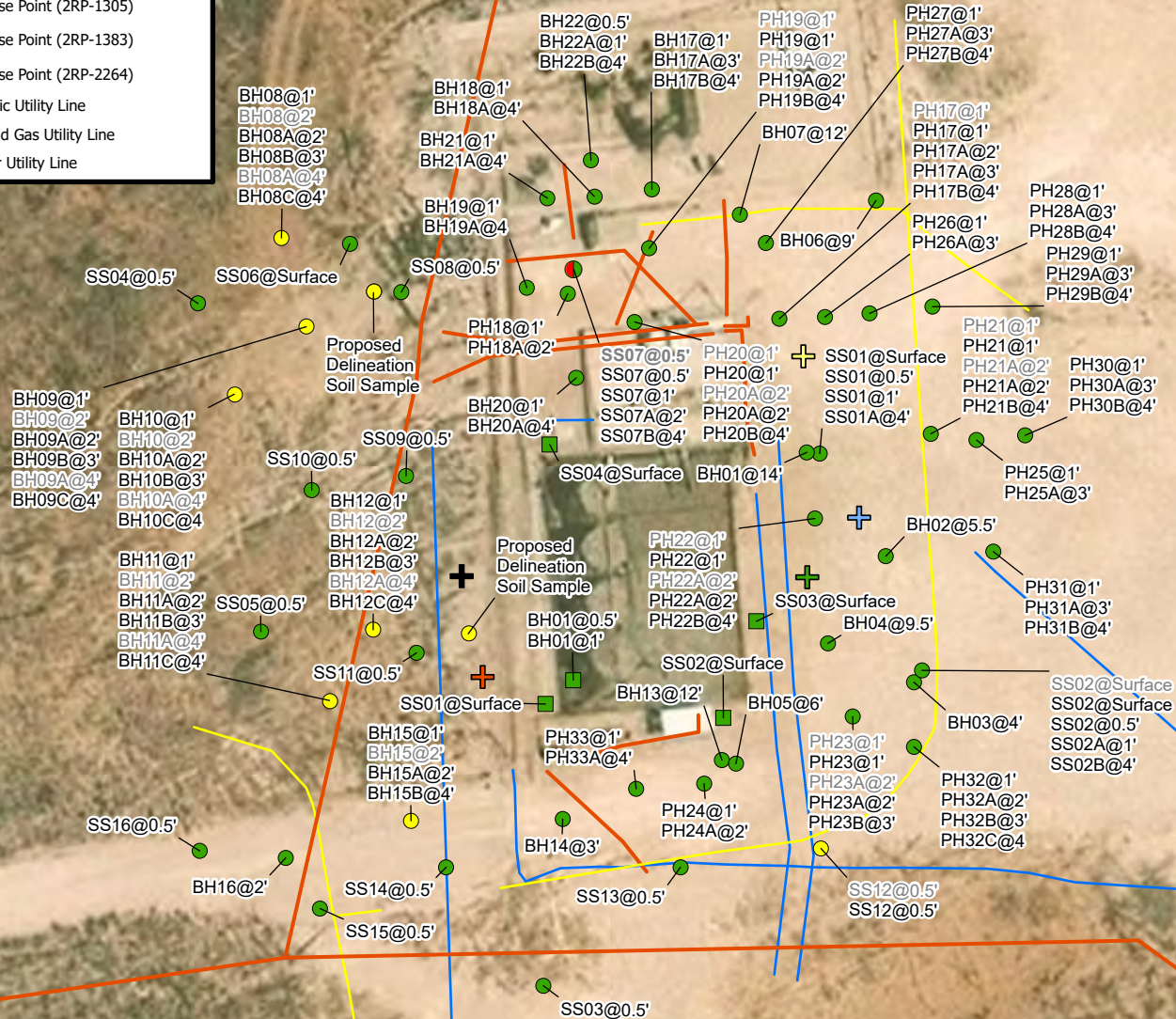






## Legend

- Delineation Soil Sample in Compliance with Closure Criteria
- Incident Number: nAPP2506458430
- Delineation Soil Sample in Compliance with Closure Criteria
- Delineation Soil Sample with Concentrations Previously Exceeding Closure Criteria
- Proposed Delineation Soil Sample
- ✚ Release Point (2RP-1205)
- ✚ Release Point (2RP-1304)
- ✚ Release Point (2RP-1305)
- ✚ Release Point (2RP-1383)
- ✚ Release Point (2RP-2264)
- Electric Utility Line
- Oil and Gas Utility Line
- Water Utility Line



Notes:  
 Sample ID @ Depth Below Ground Surface.  
 Samples in bold indicate sample exceeded applicable Closure Criteria.  
 Grey text indicate soil sample was resampled.

0 15 30 60 90 120  
 Feet

Sources: Environmental Systems Research Institute (ESRI)

## Existing and Proposed Delineation Soil Sample Locations

XTO Energy, Inc  
 POKER LAKE UNIT #153  
 Incident Number: NHMP1411828179, nJMW1219345739, nJMW1231129593,  
 NJMW1228428008, NJMW1228429248  
 Unit G, Section 06, T 24S, R 30E  
 Eddy County, New Mexico

FIGURE

2







TABLE



**TABLE I**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**Poker Lake Unit #153**  
**XTO Energy, Inc.**  
**Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Soil Samples										
SS01	02/06/2018	Surface	<0.00198	<0.00198	<15.0	58.1	37.3	58.1	95.4	2,140
SS01	02/06/2025	0.5	<0.050	<0.300	<10.0	243	126	243	369	6,080
SS01	02/19/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,330
SS01A	02/19/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,920
SS02	02/06/2018	Surface	<0.00202	<0.00202	<15.0	25.2	<15.0	25.2	25.2	6,270
SS02	05/14/2025	Surface	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	320
SS02	02/06/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
SS02A	02/06/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
SS02B	02/06/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	336
SS03	02/06/2018	0.5	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	23.2
SS04	02/06/2018	0.5	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
SS05	02/06/2018	0.5	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
SS06	02/06/2018	Surface	<0.00355	<0.00355	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
SS07	02/06/2018	0.5	<0.00200	<0.00200	<14.9	1,840	410	1,840	4,800	2,260
SS07	05/14/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
SS07	02/04/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	800
SS07A	02/04/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	512
SS07B	02/04/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	688
SS08	08/20/2018	0.5	<0.00200	<0.00200	<15.0	61.9	<15.0	61.9	61.9	<1.00
SS09	08/20/2018	0.5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	6.32
SS10	08/20/2018	0.5	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
SS11	08/20/2018	0.5	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	64.4
SS12	08/21/2018	0.5	<0.00199	<0.00199	<15.0	81.5	<15.0	81.5	81.5	1,800
SS12	02/06/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS13	08/21/2018	0.5	<0.00200	<0.00200	<14.9	15.5	<14.9	15.5	15.5	258
SS14	08/21/2018	0.5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	183
SS15	08/21/2018	0.5	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	82.0
SS16	08/21/2018	0.5	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	491
BH01	08/17/2018	14	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	77.2
BH02	08/17/2018	5.5	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	74.4
BH03	08/17/2018	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	51.7
BH04	08/17/2018	9.5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	188
BH05	08/17/2018	6	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	172



**TABLE I**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**Poker Lake Unit #153**  
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NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
BH06	08/17/2018	9	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	71.6
BH07	08/17/2018	12	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	2,550
BH08	02/06/2024	1	<0.00199	<0.00398	<50.3	<50.3	<50.3	<50.3	<50.3	106
BH08	08/20/2018	2	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	24.1
BH08A	02/06/2024	2	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	250
BH08B	02/06/2024	3	<0.00202	<0.00404	<50.0	<50.0	<50.0	<50.0	<50.0	79.8
BH08A	06/22/2021	4	<0.00198	0.131	<50.0	<50.0	<50.0	<50.0	<50.0	30.1
BH08C	02/06/2024	4	<0.00201	<0.00402	<49.6	<49.6	<49.6	<49.6	<49.6	104
BH09	02/06/2024	1	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	95.8
BH09	08/20/2018	2	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	<1.00
BH09A	02/06/2024	2	<0.00198	<0.00397	<49.7	<49.7	<49.7	<49.7	<49.7	82.1
BH09B	02/06/2024	3	<0.00200	<0.00399	<50.2	<50.2	<50.2	<50.2	<50.2	181
BH09A	06/22/2021	4	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	28.0
BH09C	02/06/2024	4	<0.00199	<0.00398	<50.4	<50.4	<50.4	<50.4	<50.4	251
BH10	02/06/2024	1	<0.00198	<0.00396	<49.7	<49.7	<49.7	<49.7	<49.7	368
BH10	08/20/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	3.07
BH10A	02/06/2024	2	<0.00202	<0.00403	<49.8	<49.8	<49.8	<49.8	<49.8	544
BH10B	02/06/2024	3	<0.00200	<0.00401	<49.6	<49.6	<49.6	<49.6	<49.6	591
BH10A	06/22/2021	4	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	989
BH10C	02/06/2024	4	<0.00199	<0.00398	<50.1	<50.1	<50.1	<50.1	<50.1	868
BH11	02/06/2024	1	<0.00199	<0.00398	<50.5	<50.5	<50.5	<50.5	<50.5	207
BH11	08/20/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	147
BH11A	02/06/2024	2	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	123
BH11B	02/06/2024	3	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	<49.8	526
BH11A	06/22/2021	4	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	1,180
BH11C	02/06/2024	4	<0.00202	<0.00404	<49.6	<49.6	<49.6	<49.6	<49.6	2,130
BH12	02/06/2024	1	<0.00201	<0.00402	<50.3	<50.3	<50.3	<50.3	<50.3	72.1
BH12	08/20/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	500
BH12A	02/06/2024	2	<0.00202	<0.00403	<50.5	<50.5	<50.5	<50.5	<50.5	90.0
BH12B	02/06/2024	3	<0.00199	<0.00398	<49.7	<49.7	<49.7	<49.7	<49.7	246
BH12A	06/22/2021	4	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	1,410
BH12C	02/06/2024	4	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	274
BH13	08/20/2018	12	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	90.0
BH14	08/21/2018	3	<0.00199	<0.00199	<15.0	60.7	<15.0	60.7	60.7	317



**TABLE I**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**Poker Lake Unit #153**  
**XTO Energy, Inc.**  
**Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
BH15	02/06/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
BH15	08/21/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,080
BH15A	02/06/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
BH15B	02/06/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	720
BH16	08/21/2018	2	<0.00201	<0.00201	<14.9	20.6	<14.9	20.6	20.6	453
BH17	02/06/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
BH17A	02/06/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
BH17B	02/06/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	480
BH18	02/20/2025	1	<0.050	<0.300	<10.0	248	67.7	248	316	176
BH18A	02/20/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
BH19	02/20/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
BH19A	02/20/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
BH20	02/20/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	352
BH20A	02/20/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
BH21	05/14/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
BH21A	05/14/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
BH22	05/14/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
BH22A	05/14/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	320
BH22B	05/14/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
PH17	10/24/2019	1	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	912
PH17	02/05/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	256
PH17A	10/24/2019	2	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	577
PH17A	02/05/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,700
PH17B	02/05/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,080
PH18	10/24/2019	1	<0.00208	<0.00208	<50.0	<50.0	<50.0	<50.0	<50.0	519
PH18A	10/24/2019	2	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	13.8
PH19	10/24/2019	1	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	614
PH19	02/05/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	880
PH19A	10/24/2019	2	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	16.3
PH19A	02/05/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	464
PH19B	02/05/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	512



**TABLE I**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**Poker Lake Unit #153**  
**XTO Energy, Inc.**  
**Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
PH20	10/24/2019	1	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	579
PH20	02/04/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,200
PH20A	10/24/2019	2	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	1,200
PH20A	02/04/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,150
PH20B	02/04/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	688
PH21	10/24/2019	1	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	833
PH21	02/05/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
PH21A	10/24/2019	2	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	1,480
PH21A	02/05/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
PH21B	02/05/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	592
PH22	10/24/2019	1	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,060
PH22	02/18/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	960
PH22A	10/24/2019	2	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	931
PH22A	02/18/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	816
PH22B	02/18/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	704
PH23	10/24/2019	1	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH23	02/06/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	384
PH23A	10/24/2019	2	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH23A	02/06/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	688
PH23B	02/06/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	848
PH24	10/24/2019	1	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	384
PH24A	10/24/2019	2	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	319
PH25	2/6/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	416
PH25A	2/6/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	656
PH26	2/6/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
PH26A	2/6/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	912
PH27	2/6/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
PH27A	2/6/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
PH27B	2/6/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	464
PH28	2/18/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240
PH28A	2/18/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,090
PH28B	2/18/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,720



<b>TABLE I</b> <b>SOIL SAMPLE ANALYTICAL RESULTS</b> <b>Poker Lake Unit #153</b> <b>XTO Energy, Inc.</b> <b>Eddy County, New Mexico</b>										
Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
<b>NMOCD Table I Closure Criteria (NMAC 19.15.29)</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
PH29	2/18/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	336
PH29A	2/18/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
PH29B	2/18/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
PH30	2/19/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
PH30A	2/19/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240
PH30B	2/19/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
PH31	2/19/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
PH31A	2/19/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
PH31B	2/19/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
PH32	2/19/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
PH32A	2/19/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
PH32B	2/19/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	256
PH32C	2/19/2025	4	<0.050	<0.300	<10.0	13.7	<10.0	13.7	13.7	352
PH33	2/20/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	176
PH33A	2/20/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
<b>Delineation Soil Samples - Incident Number nAPP2506458430</b>										
SS01	08/29/2025	Surface	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
SS02	08/29/2025	Surface	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
SS03	08/29/2025	Surface	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS04	08/29/2025	Surface	<0.050	<0.300	<10.0	39.5	27.1	39.5	66.6	144
BH01	08/29/2025	0.5	<0.050	<0.300	<10.0	10.6	<10.0	10.6	10.6	960
BH01A	08/29/2025	1	<0.050	<0.300	<10.0	38.4	41.5	38.4	79.9	720

## Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

Grey text indicates soil sample location resampled





## APPENDIX A

August 6, 2025  
*Closure Request Addendum*

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August 6, 2025

**New Mexico Oil Conservation Division**

811 South First Street  
Artesia, New Mexico 88210

**Re: 2025 Closure Request Addendum  
Poker Lake Unit #153  
Incident Numbers nJMW1219345739, nJMW1228429248, nJMW1228428008,  
nJMW1231129593, and nHMP1411828179  
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following *Closure Request Addendum (2025 Addendum)* to the July 26, 2021, *Closure Request Addendum (2021 Addendum)* and March 20, 2020, *Closure Request* detailing delineation activities at the Poker Lake Unit #153 (Site). This *2025 Addendum* provides an update to delineation activities completed at the Site in response to the denial by the New Mexico Oil Conservation Division (NMOCD) of the previously submitted *2021 Addendum*. In the denial, NMOCD stated that off-pad locations should be sampled at one-foot intervals in the top 4 feet. Based on the delineation sampling activities described below, XTO is requesting no further action (NFA) for Incident Numbers nJMW1219345739, nJMW1228429248, nJMW1228428008, nJMW1231129593, and nHMP1411828179.

**RELEASE BACKGROUND**

The Site is located in Unit G, Section 6, Township 24 South, Range 30 East, in Eddy County, New Mexico (32.248866°, -103.919096°; Figure 1) and is associated with oil and gas exploration and production operations on Federal land managed by the Bureau of Land Management (BLM). This Site name was referred to as the Poker Lake Unit Delaware C Saltwater Disposal Battery/Delaware C Tank Battery in prior submittals and has been changed to reflect the current site name referenced on the NMOCD Permitting website.

On May 30, 2012, a pipe fitting on the discharge line from the saltwater disposal (SWD) pump broke and caused the release of approximately 25 barrels (bbls) of produced water. Approximately 1,960 square feet of pasture west of the tank battery was affected by the release. No released fluids were recovered. The former operator reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141) on June 24, 2012, and the release was assigned Remediation Permit (RP) Number 2RP-1205 and Incident Number nJMW1219345739.

On August 18, 2012, the water transfer pumps failed, causing produced water tanks to overflow. Approximately 10 bbls of crude oil and 20 bbls of produced water were released. Roughly 900 square feet of the tank battery containment and 2,000 square feet of pasture west of the tank battery were affected by the release. No released fluids were recovered. Approximately 40 cubic yards of impacted soil were excavated from the containment. The excavation was sampled, backfilled, and a liner was installed. The former operator reported the release to the NMOCD on a Form C-141 on September 5, 2012, and the release was assigned RP Number 2RP-1305 and Incident Number nJMW1228429248.

XTO Energy, Inc  
2025 Closure Request Addendum  
Poker Lake Unit #153

On September 2, 2012, the truck load line valve was left open, allowing approximately 200 bbls of produced water to spill onto the surface of the caliche pad. Approximately 11,770 square feet of pad and lease road, and 7,060 square feet of pasture were affected by the release. A vacuum truck recovered 5 bbls of free-standing fluid, and a backhoe was used to scrape up the saturated soil. The former operator reported the release to the NMOCD on a Form C-141 on September 5, 2012. The release was assigned RP Number 2RP-1304 and Incident Number nJMW1228428008.

On September 19, 2012, a connection going from the charge pumps to the H-pump failed. The pumps were shut down upon discovery. Approximately 650 bbls of produced water were released; no released fluids were recovered. The well pad, lease road, and adjacent pasture were affected by the release. Delineation activities were scheduled to determine the extent of impacted soil at the Site. The former operator reported the release to the NMOCD on a Form C- 141 on September 28, 2012, and the release was assigned RP Number 2RP-1383 and Incident Number nJMW1231129593.

On April 21, 2014, a high-pressure fiberglass line coupling broke at the threads, causing approximately 200 bbls of produced water to release. A vacuum truck recovered approximately 15 bbls of produced water. Approximately 4,000 square feet of caliche pad, 1,300 square feet of lease road, and 4,200 square feet of pasture were affected by the release. Remediation of all releases was scheduled to take place during the upcoming SWD dismantling and tank battery relocation activities. The former operator reported the release to the NMOCD on a Form C-141 on April 24, 2014. The release was assigned RP Number 2RP-2264 and Incident Number nHMP1411828179.

Although all five of the releases occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. Since the releases occurred in the same general area of the well pad, lease road, and pasture, site assessment and soil sampling activities were completed to address and close all five releases simultaneously.

In 2018, sixteen preliminary soil samples (SS01 through SS16) were collected within the release area to assess the lateral extent of impacted soil. Locations SS01, SS02, and SS06 were collected at ground surface, and SS03 through SS05 and SS07 through SS16 were compiled from a depth of approximately 0.5 feet below ground surface (bgs). Boreholes and potholes were advanced at 24 locations on the well pad, lease road, and pasture to assess the vertical and lateral extents of impacted soil. Boreholes BH01 through BH16 were advanced to depths ranging from 2 feet to 14 feet bgs at the approximate locations of preliminary soil samples SS01 through SS16. Laboratory analytical results indicated that gasoline range organics (GRO)/diesel range organics (DRO) and total petroleum hydrocarbons (TPH) concentrations exceeded the Closure Criteria in preliminary soil sample SS7. All other samples were compliant with Closure Criteria. In 2019, potholes PH17 through PH24 were advanced to a depth of 2 feet bgs within the well pad release area. Potholes PH18, PH19, and PH20 were advanced around preliminary soil sample SS7 where hydrocarbon impacted soil was initially identified. Delineation soil samples were collected from each borehole and pothole from depths ranging from 2 feet to 14 feet bgs. Laboratory results from PH18 through PH20 reported that no impacted soil remained in the area around preliminary soil sample SS7. Based on laboratory analytical results, NFA was requested for Incident Numbers nJMW1219345739, nJMW1228429248, nJMW1228428008, nJMW1231129593, and nHMP1411828179 in the 2020 *Closure Request* that is included in Attachment A.

On February 22, 2021, NMOCD denied the initial *Closure Request* for the following reasons:

- *Depth to groundwater needs a better evaluation and suggest a bore hole to 51 feet bgs to verify.*
- *Also there needs to be more subsurface soil sampling done at deeper intervals. Over 1000 barrels of produced water was not recovered, and though there was some scraping of surface*

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*soils, it has been several years since these multiple releases and OCD needs to be comfortable that the chloride in soils potential has been assessed at possible leaching depths.*

The 2021 Addendum was submitted on July 26, 2021, documenting drilling of a depth to water boring completed within 0.5 miles of the Site and additional vertical delineation soil sampling at the Site in response to the Closure Request denial. The soil boring was advanced to 105 feet and confirmed that the original Table 1 Closure Criteria identified in the Closure Request are applicable for the Site. Five boreholes were advanced via hand auger in the pasture west of the pad at the original BH08 through BH12 borehole locations. Delineation samples BH08A through BH12A were collected from the boreholes from a depth of 4 feet bgs. All confirmation soil samples met the Closure Criteria so NFA was requested. Additional details of this work are summarized in the 2021 Addendum that is included as Appendix B.

On October 26, 2022, NMOCD denied the 2021 Addendum for the following reasons:

- *The OCD requires that off pad closure samples confirm that the top 4 feet of the release area are compliant with the spill rule. All samples must be in one-foot increments. The samples provided in this report are representative of the constituents at 2 and 4 only.*
- *All off pad areas must contain a minimum of 4 feet non-waste containing uncontaminated, earthen material with chloride concentrations less than 600 mg/kg. In the pasture area, 4 feet below the ground surface, soil contamination limits revert to Table 1 "Closure Criteria for Soils Impacted by a Release" included in the spill rule.*

## CLOSURE CRITERIA

Based on the results of the Site Characterization presented in the 2021 Addendum, the following NMOCD Table I Closure Criteria were applied:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- TPH-GRO and TPH-DRO: 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

In accordance with the denial of the 2021 Addendum, a reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH applies to the top 4 feet of areas to be immediately reclaimed. Additionally, impacts on-pad must be delineated to the reclamation requirement, per 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be reclaimed following Site decommissioning.

## ADDITIONAL RESAMPLING AND DELINEATION SOIL ACTIVITIES

To comply with NMOCD comments in the 2021 Addendum denial correspondence, aforementioned sampling locations BH08 through BH12 located in the pasture west of the pad were sampled at one-foot intervals from ground surface to a depth of 4 feet bgs using a hand auger on February 6, 2024. Additionally, previous soil sampling results were reviewed to determine areas where waste-containing soil was not fully defined to the reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH that applies to the top 4 feet of soil. Sampling location SS07 reported TPH above the Closure Criteria, and locations SS01, SS02, SS12, BH15, PH17, PH19 through PH23 reported chloride or TPH concentrations above the reclamation requirement in the top 4 feet of soil at the Site. Between February and May 2025,

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these 11 locations were advanced to a depth of 4 feet bgs using a backhoe or hand auger as the sampling location allowed to determine current impacts. Soil was field screened at one-foot intervals for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Based on field screening results, step out boring locations BH17 through BH20 were advanced with a hand auger and locations PH25 through PH33 were completed with a backhoe to laterally define impacts at the Site. All locations were advanced to a depth of 4 feet bgs with the exception of PH23, PH25, and PH26 where refusal was encountered at 3 feet bgs. Soil was field screened for VOCs and chloride as described above. Samples were collected from the interval previously reporting impacts, where applicable, the interval reporting the highest field screening, and the deepest interval.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples from BH08 through BH12 collected in 2024 were transported under strict chain-of-custody procedures to Eurofins Laboratory (Eurofins) in Carlsbad, New Mexico, for analysis of the following chemicals of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0. Samples collected in 2025 were transported under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Carlsbad, New Mexico for the same COC analysis, though chloride was analyzed following SM4500.

Following the receipt of the analytical results, additional delineation was required north and west of location BH18. Two sampling locations (BH21 and BH22) were advanced to 4 feet bgs using a hand auger to define the extent of waste-containing soil reported from BH18. Soil was field screened, collected, and submitted to Cardinal using the above discussed procedures. The soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Boring logs reporting lithology and field screening results are attached as Appendix C. A photographic log of sampling activities is included as Appendix D.

## LABORATORY ANALYTICAL RESULTS

Laboratory analytical results confirm that impacted soil was in compliance with Closure Criteria at the Site and waste-containing soil was fully defined to the reclamation requirement. The current and historical laboratory analytical results are summarized on Table 1, and the 2024 and 2025 laboratory analytical reports are included in Appendix E.

## CLOSURE REQUEST

Soil sampling activities were conducted at the Site to address the five releases of produced water and crude oil that occurred between May 30, 2012, and April 21, 2014. Laboratory analytical results from delineation sampling indicated that all COC concentrations were in compliance with applicable Closure Criteria both on-pad and off-pad. As requested by the NMOCD in the 2021 Addendum denial response, off-pad sampling locations were reevaluated at one-foot intervals to confirm that impacts were below Closure Criteria. Furthermore, waste-containing soil was fully defined to the reclamation standard in the top 4 feet of soil on-pad.

Due to the presence of multiple utilities at the active Site and laboratory results reporting current impacts below Closure Criteria, waste-containing soil was not remediated at this time for safety reasons. Following the delineation activities, waste-containing soil was identified within the top 4 feet of soil at sample locations SS01, SS07, BH18, PH17, PH19, PH20, PH22, PH23, PH25, PH26, and PH28 which covered approximately 8,200 square feet of surface area. After Site decommissioning, an estimated 1,215 cubic yards of waste-containing soil will be reclaimed. The presence of the waste-containing soil

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present on-pad does not cause an imminent risk to human health, the environment, or groundwater. XTO will reclaim this soil reporting COC concentrations exceeding reclamation requirement but below Closure Criteria during final Site reclamation.

Natural attenuation of impacted soil has mitigated impacts at this Site. Of the 145 soil samples collected at the Site to assess impacts, only one sample collected in 2018 reported TPH above Closure Criteria. Resampling of the exceedance in 2025 reported TPH below both the Closure Criteria and the reclamation requirement. Depth to groundwater has been determined to be greater than 100 feet bgs, and no other sensitive receptors were identified near the release extent. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Numbers nJMW1219345739, nJMW1228429248, nJMW1228428008, nJMW1231129593, and nHMP1411828179.

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or [tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com).

Sincerely,  
**Ensolum, LLC**



Katherine Kahn, P.G.  
Senior Managing Geologist



Tacoma Morrissey, MS  
Associate Principal

cc: Colton Brown, XTO  
Kaylan Dirkx, XTO  
Bureau of Land Management

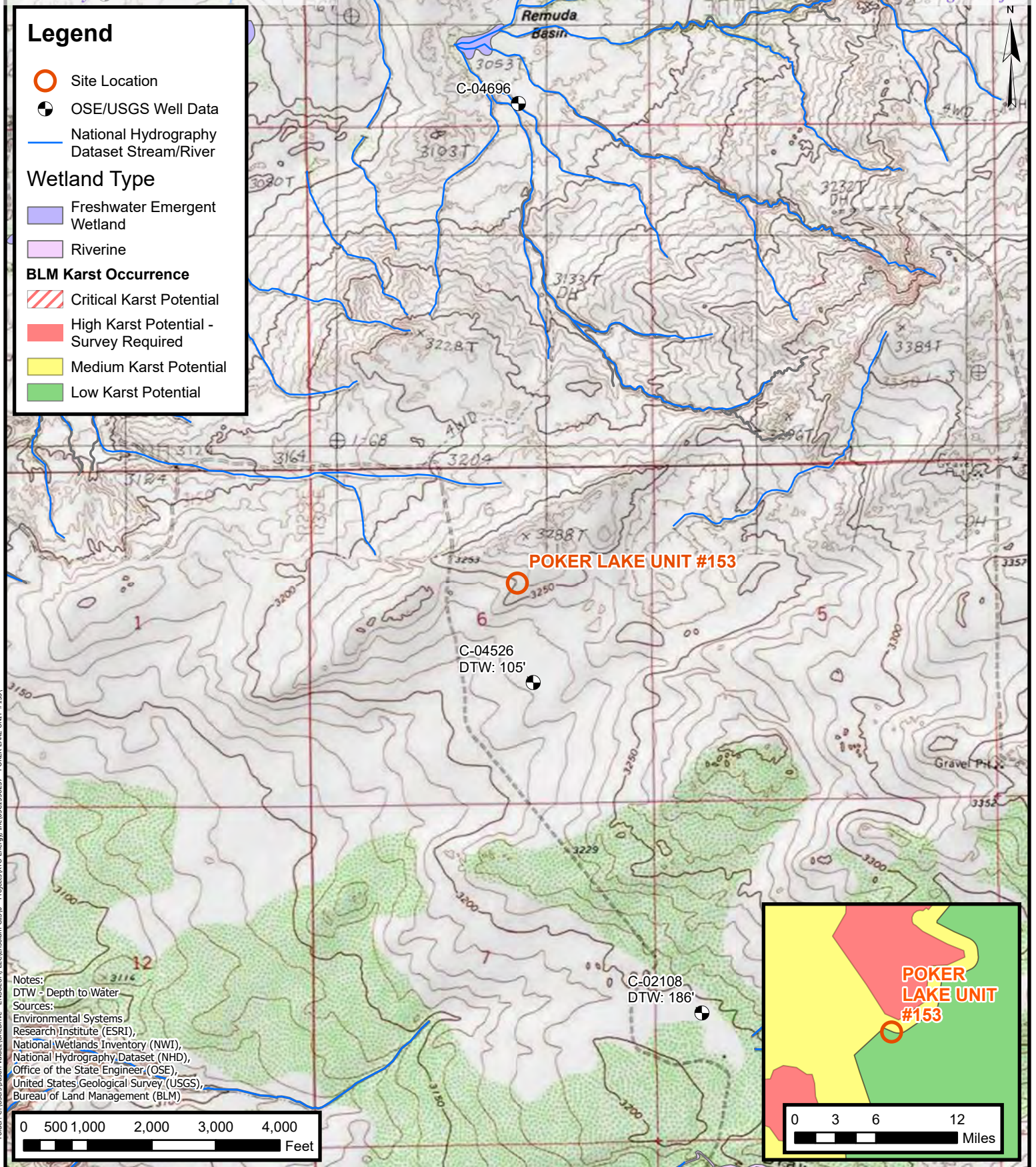
Appendices:

Figure 1	Site Location Map
Figure 2	Delineation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	March 20, 2020, <i>Closure Request</i>
Appendix B	July 26, 2021, <i>Closure Request Addendum</i>
Appendix C	Boring Logs (2024 and 2025)
Appendix D	Photographic Log (2024 & 2025)
Appendix E	Laboratory Analytical Reports (2024 & 2025)





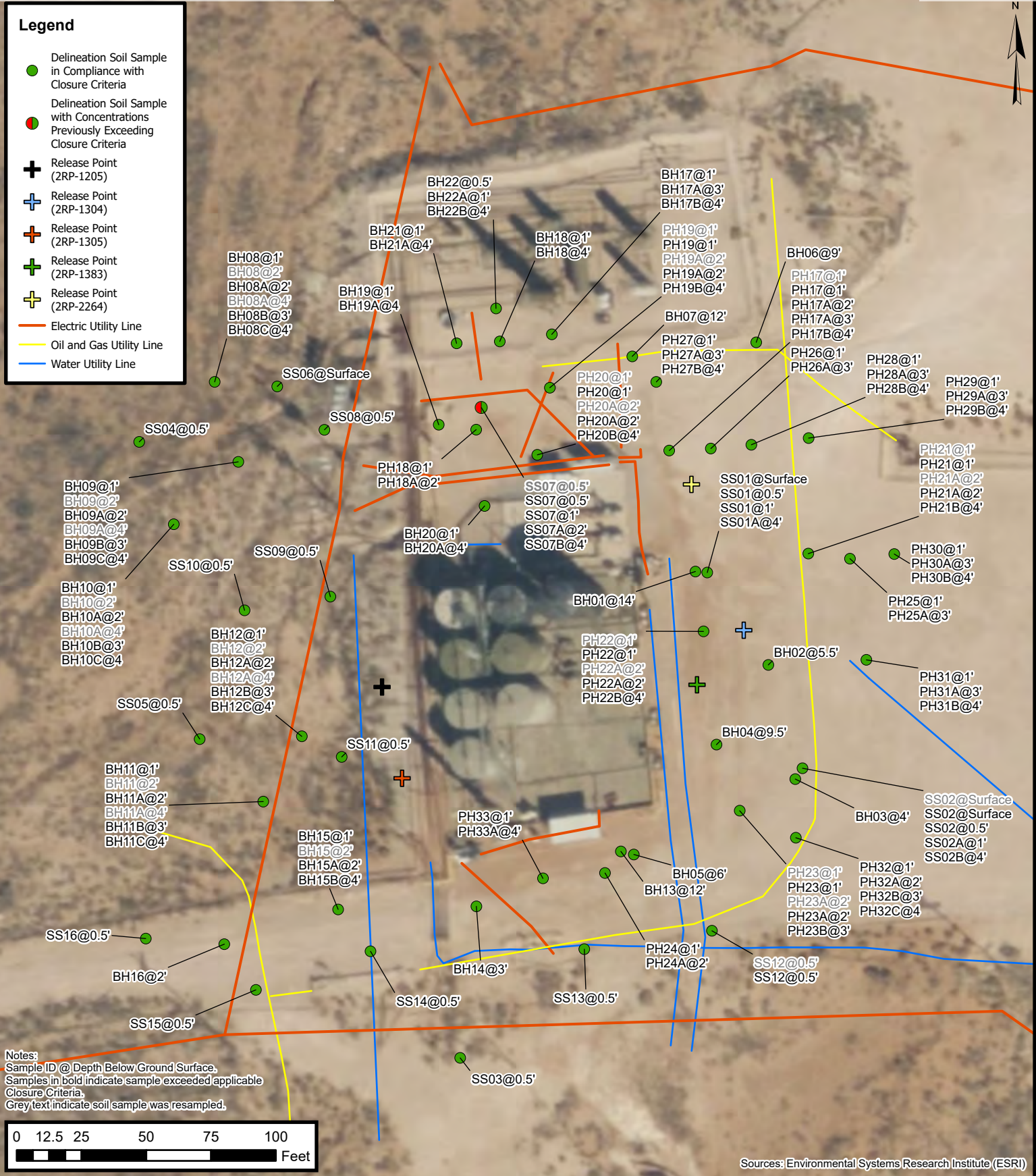
FIGURES





## Legend

- Delineation Soil Sample in Compliance with Closure Criteria
- Delineation Soil Sample with Concentrations Previously Exceeding Closure Criteria
- + Release Point (2RP-1205)
- + Release Point (2RP-1304)
- + Release Point (2RP-1305)
- + Release Point (2RP-1383)
- + Release Point (2RP-2264)
- Electric Utility Line
- Oil and Gas Utility Line
- Water Utility Line



## Delineation Soil Sample Locations

XTO Energy, Inc  
 POKER LAKE UNIT #153  
 Incident Number: NHMP1411828179, nJMW1219345739, nJMW1231129593,  
 NJMW1228428008, NJMW1228429248  
 Unit G, Section 06, T 24S, R 30E  
 Eddy County, New Mexico

FIGURE

2



TABLE



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**Poker Lake Unit #153**  
**XTO Energy, Inc.**  
**Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Soil Samples										
SS01	02/06/2018	Surface	<0.00198	<0.00198	<15.0	58.1	37.3	58.1	95.4	2,140
SS01	02/06/2025	0.5	<0.050	<0.300	<10.0	243	126	243	369	6,080
SS01	02/19/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,330
SS01A	02/19/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,920
SS02	02/06/2018	Surface	<0.00202	<0.00202	<15.0	25.2	<15.0	25.2	25.2	6,270
SS02	05/14/2025	Surface	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	320
SS02	02/06/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
SS02A	02/06/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
SS02B	02/06/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	336
SS03	02/06/2018	0.5	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	23.2
SS04	02/06/2018	0.5	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
SS05	02/06/2018	0.5	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
SS06	02/06/2018	Surface	<0.00355	<0.00355	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
SS07	02/06/2018	0.5	<0.00200	<0.00200	<14.9	1,840	410	1,840	4,800	2,260
SS07	05/14/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
SS07	02/04/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	800
SS07A	02/04/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	512
SS07B	02/04/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	688
SS08	08/20/2018	0.5	<0.00200	<0.00200	<15.0	61.9	<15.0	61.9	61.9	<1.00
SS09	08/20/2018	0.5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	6.32
SS10	08/20/2018	0.5	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99
SS11	08/20/2018	0.5	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	64.4
SS12	08/21/2018	0.5	<0.00199	<0.00199	<15.0	81.5	<15.0	81.5	81.5	1,800
SS12	02/06/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS13	08/21/2018	0.5	<0.00200	<0.00200	<14.9	15.5	<14.9	15.5	15.5	258
SS14	08/21/2018	0.5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	183
SS15	08/21/2018	0.5	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	82.0
SS16	08/21/2018	0.5	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	491
BH01	08/17/2018	14	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	77.2
BH02	08/17/2018	5.5	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	74.4
BH03	08/17/2018	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	51.7
BH04	08/17/2018	9.5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	188
BH05	08/17/2018	6	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	172
BH06	08/17/2018	9	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	71.6
BH07	08/17/2018	12	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	2,550



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**PLU Delaware C SWD**  
**XTO Energy, Inc.**  
**Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
BH08	02/06/2024	1	<0.00199	<0.00398	<50.3	<50.3	<50.3	<50.3	<50.3	106
BH08	08/20/2018	2	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	24.1
BH08A	02/06/2024	2	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	250
BH08B	02/06/2024	3	<0.00202	<0.00404	<50.0	<50.0	<50.0	<50.0	<50.0	79.8
BH08A	06/22/2021	4	<0.00198	0.131	<50.0	<50.0	<50.0	<50.0	<50.0	30.1
BH08C	02/06/2024	4	<0.00201	<0.00402	<49.6	<49.6	<49.6	<49.6	<49.6	104
BH09	02/06/2024	1	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	95.8
BH09	08/20/2018	2	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	<1.00
BH09A	02/06/2024	2	<0.00198	<0.00397	<49.7	<49.7	<49.7	<49.7	<49.7	82.1
BH09B	02/06/2024	3	<0.00200	<0.00399	<50.2	<50.2	<50.2	<50.2	<50.2	181
BH09A	06/22/2021	4	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	28.0
BH09C	02/06/2024	4	<0.00199	<0.00398	<50.4	<50.4	<50.4	<50.4	<50.4	251
BH10	02/06/2024	1	<0.00198	<0.00396	<49.7	<49.7	<49.7	<49.7	<49.7	368
BH10	08/20/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	3.07
BH10A	02/06/2024	2	<0.00202	<0.00403	<49.8	<49.8	<49.8	<49.8	<49.8	544
BH10B	02/06/2024	3	<0.00200	<0.00401	<49.6	<49.6	<49.6	<49.6	<49.6	591
BH10A	06/22/2021	4	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	989
BH10C	02/06/2024	4	<0.00199	<0.00398	<50.1	<50.1	<50.1	<50.1	<50.1	868
BH11	02/06/2024	1	<0.00199	<0.00398	<50.5	<50.5	<50.5	<50.5	<50.5	207
BH11	08/20/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	147
BH11A	02/06/2024	2	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	123
BH11B	02/06/2024	3	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	<49.8	526
BH11A	06/22/2021	4	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	1,180
BH11C	02/06/2024	4	<0.00202	<0.00404	<49.6	<49.6	<49.6	<49.6	<49.6	2,130
BH12	02/06/2024	1	<0.00201	<0.00402	<50.3	<50.3	<50.3	<50.3	<50.3	72.1
BH12	08/20/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	500
BH12A	02/06/2024	2	<0.00202	<0.00403	<50.5	<50.5	<50.5	<50.5	<50.5	90.0
BH12B	02/06/2024	3	<0.00199	<0.00398	<49.7	<49.7	<49.7	<49.7	<49.7	246
BH12A	06/22/2021	4	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	1,410
BH12C	02/06/2024	4	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	274
BH13	08/20/2018	12	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	90.0
BH14	08/21/2018	3	<0.00199	<0.00199	<15.0	60.7	<15.0	60.7	60.7	317





**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**PLU Delaware C SWD**  
**XTO Energy, Inc.**  
**Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
BH15	02/06/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
BH15	08/21/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,080
BH15A	02/06/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
BH15B	02/06/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	720
BH16	08/21/2018	2	<0.00201	<0.00201	<14.9	20.6	<14.9	20.6	20.6	453
BH17	02/06/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
BH17A	02/06/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
BH17B	02/06/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	480
BH18	02/20/2025	1	<0.050	<0.300	<10.0	248	67.7	248	316	176
BH18A	02/20/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
BH19	02/20/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
BH19A	02/20/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
BH20	02/20/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	352
BH20A	02/20/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
BH21	05/14/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
BH21A	05/14/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
BH22	05/14/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
BH22A	05/14/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	320
BH22B	05/14/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
PH17	10/24/2019	1	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	912
PH17	02/05/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	256
PH17A	10/24/2019	2	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	577
PH17A	02/05/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,700
PH17B	02/05/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,080
PH18	10/24/2019	1	<0.00208	<0.00208	<50.0	<50.0	<50.0	<50.0	<50.0	519
PH18A	10/24/2019	2	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	13.8
PH19	10/24/2019	1	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	614
PH19	02/05/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	880
PH19A	10/24/2019	2	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	16.3
PH19A	02/05/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	464
PH19B	02/05/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	512
PH20	10/24/2019	1	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	579
PH20	02/04/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,200
PH20A	10/24/2019	2	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	1,200
PH20A	02/04/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,150
PH20B	02/04/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	688



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**PLU Delaware C SWD**  
**XTO Energy, Inc.**  
**Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
PH21	10/24/2019	1	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	833
PH21	02/05/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
PH21A	10/24/2019	2	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	1,480
PH21A	02/05/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
PH21B	02/05/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	592
PH22	10/24/2019	1	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,060
PH22	02/18/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	960
PH22A	10/24/2019	2	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	931
PH22A	02/18/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	816
PH22B	02/18/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	704
PH23	10/24/2019	1	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH23	02/06/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	384
PH23A	10/24/2019	2	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH23A	02/06/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	688
PH23B	02/06/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	848
PH24	10/24/2019	1	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	384
PH24A	10/24/2019	2	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	319
PH25	2/6/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	416
PH25A	2/6/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	656
PH26	2/6/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
PH26A	2/6/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	912
PH27	2/6/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
PH27A	2/6/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
PH27B	2/6/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	464
PH28	2/18/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240
PH28A	2/18/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,090
PH28B	2/18/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,720
PH29	2/18/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	336
PH29A	2/18/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
PH29B	2/18/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
PH30	2/19/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
PH30A	2/19/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240
PH30B	2/19/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
PH31	2/19/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
PH31A	2/19/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
PH31B	2/19/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112



TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS PLU Delaware C SWD XTO Energy, Inc. Eddy County, New Mexico										
Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
PH32	2/19/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
PH32A	2/19/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
PH32B	2/19/2025	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	256
PH32C	2/19/2025	4	<0.050	<0.300	<10.0	13.7	<10.0	13.7	13.7	352
PH33	2/20/2025	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	176
PH33A	2/20/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192

## Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table 1 Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

Grey text indicates soil sample location resampled



## APPENDIX A

March 20, 2020  
*Closure Request*

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LT Environmental, Inc.

3300 North "A" Street  
Building 1, Unit 103  
Midland, Texas 79705  
432.704.5178

APPROVED

March 20, 2020

Mr. Bradford Billings  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive, #3  
Santa Fe, New Mexico 87505

The OCD approves the Closure Report C-141 for incident #NIMW1231129593 with the following conditions.

- Depth to groundwater is not adequately identified. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground water at a depth of 50 feet or less.
- This release does appear to have been vertically and horizontally defined to 4' and does appear to meet the strictest remediation requirements in Table 1 19.15.29.12 NMAC.

**RE: Closure Request**  
**Poker Lake Unit Delaware C Saltwater Disposal Battery/Delaware C Tank Battery**  
**Remediation Permit Numbers 2RP-1205, 2RP-1304, 2RP-1305, 2RP-1383, and**  
**2RP-2264**  
**Eddy County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment and soil sampling activities at the Poker Lake Unit (PLU) Delaware C Saltwater Disposal (SWD) Battery/Delaware C Tank Battery (Site) in Unit G, Section 6, Township 24 South, Range 30 East, Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacted soil resulting from five historical releases of crude oil and/or produced water at the Site. Based on the assessment activities and results of the soil sampling events, XTO is submitting this Closure Request, requesting no further action for the release events.

The releases are included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the New Mexico Oil Conservation Division (NMOCD) effective November 13, 2018. The purpose of the Compliance Agreement is to ensure reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The releases are categorized as Tier IV sites in the Compliance Agreement, meaning the releases occurred prior to August 14, 2018, the effective date of 19.15.29 NMAC; however, remediation was ongoing.

## RELEASE BACKGROUND

On May 30, 2012, a pipe fitting on the discharge line from SWD pump broke and caused the release of approximately 25 barrels (bbls) of produced water. Approximately 1,960 square feet of pasture west of the tank battery was affected by the release. No released fluids were recovered. The former operator reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141) on June 24, 2012 and was assigned Remediation Permit (RP) Number 2RP-1205 (Attachment 1).



On August 18, 2012, the water transfer pumps failed, causing produced water tanks to overflow. Approximately 10 bbls of crude oil and 20 bbls of produced water were released. Approximately 900 square feet of the tank battery containment and 2,000 square feet of pasture west of the tank battery were affected by the release. No released fluids were recovered. Approximately 40 cubic yards of impacted soil were excavated from the containment. The excavation was sampled, backfilled, and a liner was installed. The former operator reported the release to the NMOCD on a Form C-141 on September 5, 2012 and was assigned RP Number 2RP-1305 (Attachment 1).

On September 2, 2012, the truck load line valve was left open, allowing approximately 200 bbls of produced water to spill onto the surface of the caliche pad. Approximately 11,770 square feet of pad and lease road, and 7,060 square feet of pasture were affected by the release. A vacuum truck recovered 5 bbls of free-standing fluid, and a backhoe was used to scrape up the saturated soil. The former operator reported the release to the NMOCD on a Form C-141 on September 5, 2012 and was assigned RP Number 2RP-1304 (Attachment 1).

On September 19, 2012, a connection going from the charge pumps to the H-pump failed. The pumps were shut down upon discovery. Approximately 650 bbls of produced water were released; no released fluids were recovered. The well pad, lease road, and adjacent pasture were affected by the release. Delineation activities were scheduled to determine the extent of impacted soil at the Site. The former operator reported the release to the NMOCD on a Form C-141 on September 28, 2012 and was assigned RP Number 2RP-1383 (Attachment 1).

On April 21, 2014, a high-pressure fiberglass line coupling broke at the threads, causing approximately 200 bbls of produced water to release. A vacuum truck recovered approximately 15 bbls of produced water. Approximately 4,000 square feet of caliche pad, 1,300 square feet of lease road, and 4,200 square feet of pasture were affected by the release. Remediation of all releases was scheduled to take place during the upcoming SWD dismantling and tank battery relocation activities. The former operator reported the release to the NMOCD on a Form C-141 on April 24, 2014 and was assigned RP Number 2RP-2264 (Attachment 1).

Although all five of the releases occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. Since the releases occurred in the same general area of the well pad, lease road, and pasture, site assessment and soil sampling activities were completed to address and close all five releases simultaneously. The initial Form C-141s indicated that soil excavation activities had occurred and that additional remediation activities were scheduled for 2014.

## SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of 19.15.29.12 of the NMAC. Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted



groundwater well with depth to groundwater data is New Mexico Office of State Engineer (NMOSE) well C-02108, located approximately 1.34 miles southeast of the Site. The water well has a depth to groundwater of 186 feet bgs and a total depth of 200 feet bgs. The closest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 1,590 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low-potential karst area.

### CLOSURE CRITERIA

- Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:
- Benzene: 10 milligrams per kilogram (mg/kg);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg;
- TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg;
- Total petroleum hydrocarbons (TPH): 2,500 mg/kg; and
- Chloride: 20,000 mg/kg.

A closure criteria of 600 mg/kg chloride was applied to the pasture area that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top 4 feet of areas that will be reclaimed following remediation.

### SITE ASSESSMENT AND DELINEATION SOIL SAMPLING ACTIVITIES

During February and August 2018, LTE inspected the Site to evaluate the release areas associated with the five historical releases. Sixteen preliminary soil samples (SS1 through SS16) were collected within and around the release areas to assess the lateral extent of impacted soil. The soil sample locations, depicted on Figure 2, were selected based on information provided on the initial Form C-141 and field observations. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, soil samples SS3 through SS5 and SS7 through SS16 were collected from a depth of 0.5 feet bgs.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil





range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0. The soil sample locations are depicted on Figure 2.

Between August 2018 and October 2019, LTE personnel returned to the Site to oversee additional site assessment activities.

Boreholes and potholes were advanced via track hoe or hand auger at 24 locations on the well pad, lease road, and pasture to assess the lateral and vertical extent of impacted soil. Boreholes BH01 through BH16 were advanced to depths ranging from 2 feet to 14 feet bgs at the approximate locations of preliminary soil samples SS01 through SS16. Potholes PH17 through PH24 were advanced to a depth of 2 feet bgs within the well pad release area. Potholes PH18, PH19, and PH20 were advanced in the area around preliminary soil sample SS7 where hydrocarbon impacted soil was initially identified. Delineation soil samples were collected from each borehole and pothole from depths ranging from 2 feet to 14 feet bgs. Soil from the boreholes and potholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the boreholes and potholes were logged on lithologic/soil sampling logs, which are included in Attachment 2. The delineation soil sample locations are depicted on Figure 3.

The delineation soil samples were collected, handled, and analyzed as described above and submitted to Xenco. Photographic documentation was conducted during the Site visits. Photographs are included in Attachment 3.

## ANALYTICAL RESULTS

Laboratory analytical results for preliminary soil samples SS1 through SS6 and SS08 through SS16, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results indicated that GRO/DRO and TPH concentrations exceeded the Closure Criteria in preliminary soil sample SS7, collected on the well pad from a depth of 0.5 feet bgs.

Laboratory analytical results for the delineation soil samples collected from boreholes BH01 through BH16 and potholes PH17 through PH24, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria.

Laboratory analytical results indicated that chloride concentrations were below 600 mg/kg in soil samples SS3 through SS6, SS08 through SS11, and BH08 through BH12, that were collected from the top four feet of the pasture.



Billings, B.  
Page 5

## CLOSURE REQUEST

Site assessment and soil sampling activities were completed within the release areas on the well pad, lease road, and pasture to assess for soil impacts resulting from five historical releases at the Site. Laboratory analytical results for preliminary soil samples SS1 through SS6 and SS08 through SS16, and delineation soil samples collected from boreholes BH01 through BH16 and potholes PH17 through PH24 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, laboratory analytical results indicated that chloride concentrations were below 600 mg/kg in soil samples SS3 through SS6, SS08 through SS11, and BH08 through BH12, that were collected from the top four feet of the pasture.

Laboratory analytical results indicated that GRO/DRO and TPH concentrations exceeded the Closure Criteria in preliminary soil sample SS7, collected during February 2018 from a depth of 0.5 feet bgs. Preliminary soil sample SS7 was located on pad approximately 35 feet to the north of the SWD tank battery containment. During October 2019, potholes PH18, PH19, and PH20 were advanced in the area around preliminary soil sample SS7. Delineation soil samples were collected from depths of one foot and two feet bgs from each pothole. Laboratory analytical results for the delineation soil samples collected from potholes PH18, PH19, and PH20, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. In addition, the lithologic boring logs indicated no reportable PID measurements, and no staining or petroleum odor. Based on field screening activities and laboratory analytical results, no impacted soil remained in the area around preliminary soil sample SS7.

Based on the soil sample laboratory analytical results from the site assessment activities, no further remediation was required. The historical releases occurred during 2012 and 2014. The former operator indicated on the initial Form C-141s that excavation activities had occurred, and that additional remediation of impacted soil was being scheduled. The absence of impacted soil identified during LTE's assessment activities implies that unreported remediation/excavation activities have been completed at the Site in the past by the previous operator. Additionally, vegetation in the pasture appeared healthy and consistent with the surrounding vegetation.

Initial response efforts, natural attenuation, and presumed historical excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for RP Numbers 2RP-1205, 2RP-1304, 2RP-1305, 2RP-1383, and 2RP-2264. An updated NMOCD Form C-141 for each release is included in Attachment 1.

If you have any questions or comments, please do not hesitate to contact Ms. Ashley Ager at (970) 385-1096.



Billings, B.  
Page 6

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads 'Kevin M. Axe'.

Kevin M. Axe, P.G.  
Senior Geologist

A handwritten signature in blue ink that reads 'Ashley L. Ager'.

Ashley L. Ager, P.G.  
Senior Geologist

cc: Kyle Littrell, XTO  
Mike Bratcher, NMOCD  
Bureau of Land Management

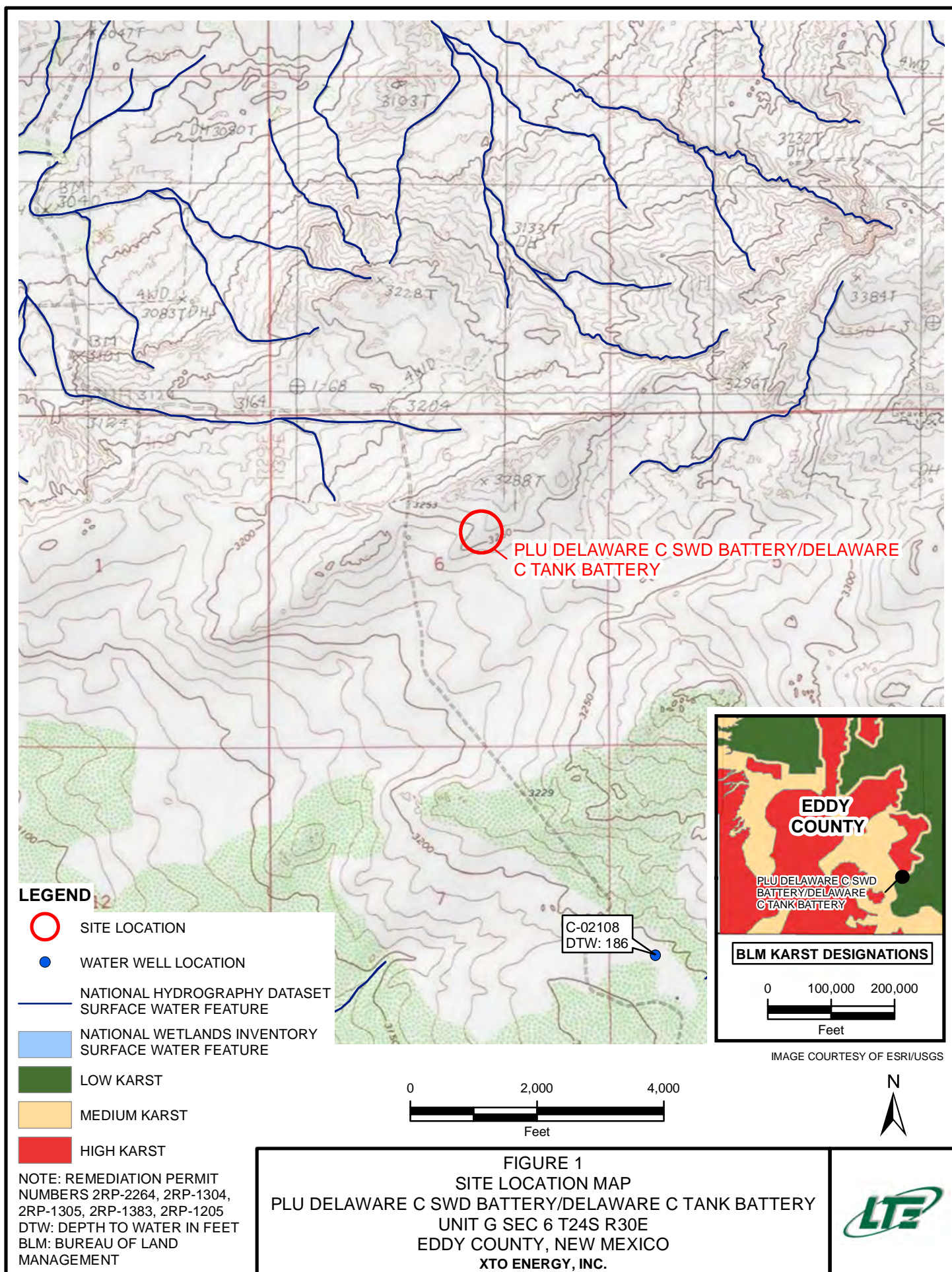
Attachments:

Figure 1 Site Location Map  
Figure 2 Preliminary Soil Sample Locations  
Figure 3 Delineation Soil Sample Locations  
Table 1 Soil Analytical Results  
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-1205, 2RP-1304, 2RP-1305, 2RP-1383, and 2RP-2264)  
Attachment 2 Lithologic / Soil Sample Logs  
Attachment 3 Photographic Log  
Attachment 4 Laboratory Analytical Reports

FIGURES

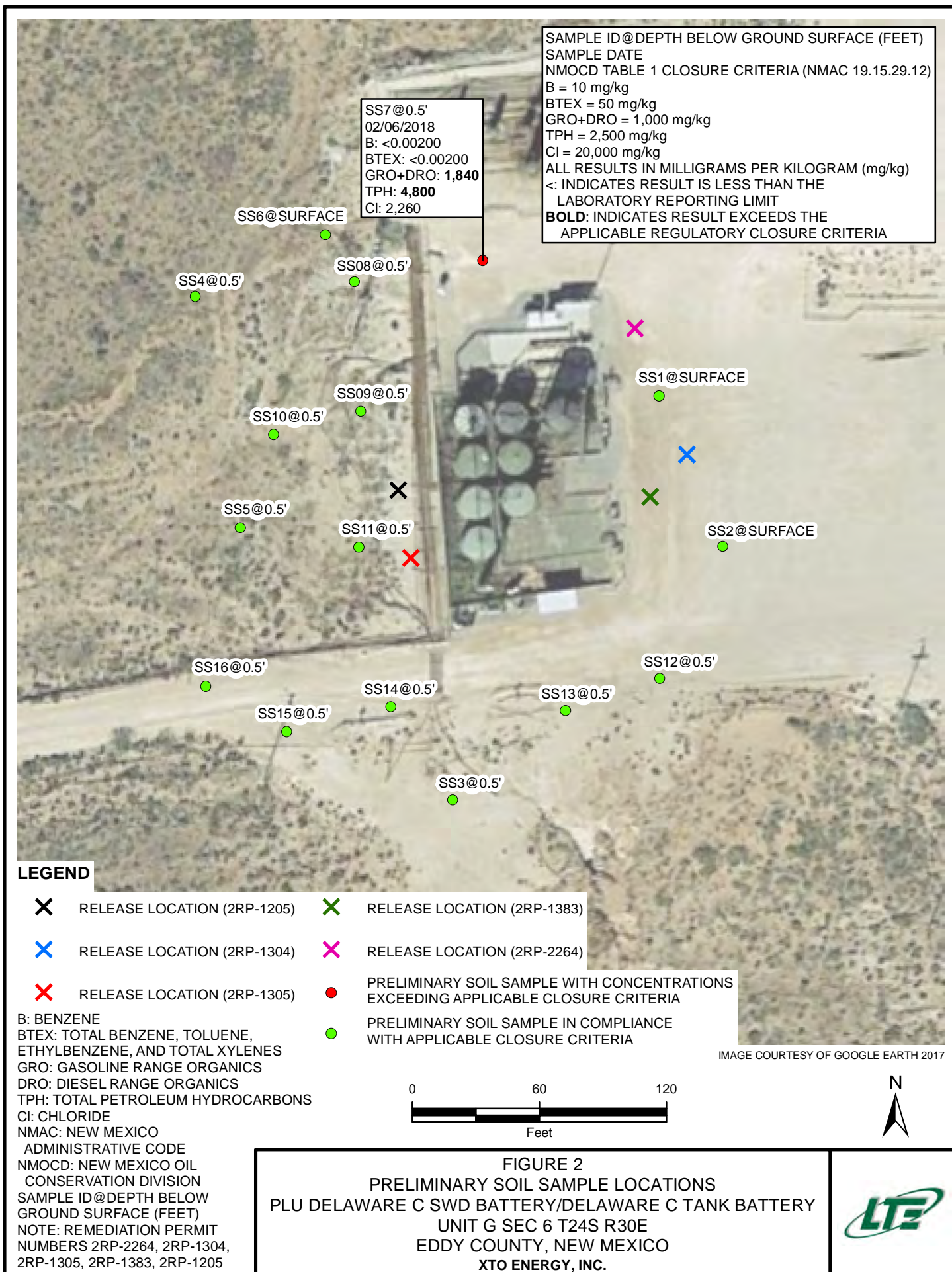






P:\XTO Energy\GIS\MXD\012918038\_DELAWARE C SWD\012918038\_FIG01\_RECEPTOR\_SL\_2020.mxd









## LEGEND



RELEASE LOCATION  
(2RP-1205)



RELEASE LOCATION  
(2RP-1304)



RELEASE LOCATION  
(2RP-1305)



RELEASE LOCATION  
(2RP-1383)



RELEASE LOCATION  
(2RP-2264)

SAMPLE ID@DEPTH BELOW  
GROUND SURFACE (FEET)  
NOTE: REMEDIATION PERMIT  
NUMBERS 2RP-2264, 2RP-1304,  
2RP-1305, 2RP-1383, 2RP-1205



DELINEATION SOIL SAMPLE IN COMPLIANCE  
WITH APPLICABLE CLOSURE CRITERIA

**FIGURE 3**  
**DELINEATION SOIL SAMPLE LOCATIONS**  
**PLU DELAWARE C SWD BATTERY/DELAWARE C TANK BATTERY**  
**UNIT G SEC 6 T24S R30E**  
**EDDY COUNTY, NEW MEXICO**  
**XTO ENERGY, INC.**





TABLES



**TABLE 1**  
**SOIL ANALYTICAL RESULTS**

**PLU DELAWARE C SWD BATTERY/DELAWARE C TANK BATTERY**  
**REMEDIATION PERMIT NUMBER 2RP-1205, 2RP-1304, 2RP-1305, 2RP-1383, and 2RP-2264**  
**EDDY COUNTY, NEW MEXICO**  
**XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
<b>NMOC Table 1 Closure Criteria</b>			<b>10</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
SS1	Surface	02/06/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	58.1	37.3	58.1	95.4	2,140
SS2	Surface	02/06/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	25.2	<15.0	25.2	25.2	6,270
SS3	0.5	02/06/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	23.2*
SS4	0.5	02/06/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99*
SS5	0.5	02/06/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99*
SS6	Surface	02/06/2018	<0.00355	<0.00355	<0.00355	<0.00355	<0.00355	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98*
SS7	0.5	02/06/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	1,840	410	<b>1,840</b>	<b>4,800</b>	2,260
SS08	0.5	08/20/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	61.9	<15.0	61.9	61.9	<1.00*
SS09	0.5	08/20/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	6.32*
SS10	0.5	08/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	<4.99*
SS11	0.5	08/20/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	64.4*
SS12	0.5	08/21/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	81.5	<15.0	81.5	81.5	1,800
SS13	0.5	08/21/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	15.5	<14.9	15.5	15.5	258
SS14	0.5	08/21/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	183
SS15	0.5	08/21/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	82.0
SS16	0.5	08/21/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	491
BH01	14	08/17/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	77.2
BH02	5.5	08/17/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	74.4
BH03	4	08/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	51.7
BH04	9.5	08/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	188
BH05	6	08/17/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	172
BH06	9	08/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	71.6
BH07	12	08/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	2,550
BH08	2	08/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	24.1*
BH09	2	08/20/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	<1.00*
BH10	2	08/20/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	3.07*
BH11	2	08/20/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	147*
BH12	2	08/20/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	500*
BH13	12	08/20/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	90.0

TABLE 1  
SOIL ANALYTICAL RESULTS

PLU DELAWARE C SWD BATTERY/DELAWARE C TANK BATTERY  
REMEDIATION PERMIT NUMBER 2RP-1205, 2RP-1304, 2RP-1305, 2RP-1383, and 2RP-2264  
EDDY COUNTY, NEW MEXICO  
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
<b>NMOC D Table 1 Closure Criteria</b>			<b>10</b>	NE	NE	NE	<b>50</b>	NE	NE	NE	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
BH14	3	08/21/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	60.7	<15.0	60.7	60.7	317
BH15	2	08/21/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,080
BH16	2	08/21/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	20.6	<14.9	20.6	20.6	453
PH17	1	10/24/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	912
PH17A	2	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	577
PH18	1	10/24/2019	<0.00208	<0.00208	<0.00208	<0.00208	<0.00208	<50.0	<50.0	<50.0	<50.0	<50.0	519
PH18A	2	10/24/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	13.8
PH19	1	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	614
PH19A	2	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	16.3
PH20	1	10/24/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	579
PH20A	2	10/24/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	1,200
PH21	1	10/24/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	833
PH21A	2	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	1,480
PH22	1	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,060
PH22A	2	10/24/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	931
PH23	1	10/24/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH23A	2	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH24	1	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	384
PH24A	2	10/24/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	319

**Notes:**

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

ORO - oil range organics

NMAC - New Mexico Administrative Code

NMOC D - New Mexico Oil Conservation Division

NE - not established

TPH - total petroleum hydrocarbons

**Bold** - indicates result exceeds the applicable regulatory standard

< indicates result is below laboratory reporting limits

Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

\* - indicates sample was collected in area to be reclaimed after remediation is complete;  
closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-1205, 2RP-1305, 2RP-1304, 2RP-1383, and 2RP-2264)



District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

### Release Notification and Corrective Action

**OPERATOR** ☒ Initial Report ☐ Final Report

**nJMW 1219345739**

Name of Company BOPCO, L.P.	260737	Contact Tony Savoie
Address 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Telephone No. 432-556-8730
Facility Name: Poker Lake Unit Delaware C SWD Battery		Facility Type E&P

Surface Owner Federal	Mineral Owner Federal	Lease No 8910003031 <b>API #</b>
-----------------------	-----------------------	----------------------------------

**Poker Lake Unit #153**

**LOCATION OF RELEASE** **30-015-31412**

Unit Letter G	Section 6	Township 24S	Range 30E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
------------------	--------------	-----------------	--------------	---------------	------------------	---------------	----------------	----------------

Latitude N 32.248850 Longitude W 103.919067

### NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 25 bbls of produced water	Volume Recovered: None
Source of Release: Produced water storage tank	Date and Hour of Occurrence 5/30/12, Hour unknown	Date and Hour of Discovery 5/30/12 8:30 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOCD Emergency #104 and Jim Amos with the BLM	
By Whom? Tony Savoie	Date and Hour 6/1/12, NMOCD at 11:41 a.m. BLM at 11:45 a.m. The report was delayed due to a medical situation with T.S.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* A pipe fitting on the discharge line from the SWD pump broke, the pipe connection was replaced the same day.

Describe Area Affected and Cleanup Action Taken.. Approximately 1960 sq.ft. of pasture land was impacted west of the tank battery, this area has had several flow line spills in the same area that the release covered. All of the fluid soaked into the ground before it could be recovered. A remediation plan will be developed in accordance with the NMOCD and BLM remediation guidelines.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: <u>Tony Savoie</u>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie	Approved by District Supervisor:	Signed By <u>Mike Brannon</u>
Title: Waste Mgmt. & Remediation Specialist	Approval Date: <b>JUL 11 2012</b>	Expiration Date:
E-mail Address: TASavoie@BassPet.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 6/24/12	Phone: 432-556-8730	

\* Attach Additional Sheets If Necessary

Remediation per OCD Rules &  
Guidelines. **SUBMIT REMEDIATION  
PROPOSAL NOT LATER THAN:**

8/11/12

**2RP-1205**  
**RECEIVED**  
JUN 26 2012  
NMOCD ARTESIA

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

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

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

Incident ID	
District RP	2RP-1205
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-1205
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.248850 Longitude -103.919067  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake Unit Delaware C SWD Battery	Site Type Exploration and Production
Date Release Discovered 5/30/2012	API# (if applicable) 30-015-31412

Unit Letter	Section	Township	Range	County
G	6	24S	30E	Eddy

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 25 bbls	Volume Recovered (bbls) 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A pipe fitting on the discharge line from the SWD pump broke. The fitting was replaced the same day. An area covering approximately 1,960 sq. ft of pasture land was affected west of the tank battery.

Incident ID	
District RP	2RP-1205
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? Yes, by Tony Savoie to NMOCD Emergency Response #104 and Jim Amos (BLM) on 6/1/2012 at 11:41 a.m.	

## Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:          	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&amp;E Supervisor</u>
Signature: _____	Date: <u>3/20/2020</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<b><u>OCD Only</u></b>  Received by: _____ Date: _____	

Incident ID	
District RP	2RP-1205
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-1205
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



Incident ID	
District RP	2RP-1205
Facility ID	
Application ID	

## Closure

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

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

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: 432-221-7331

### OCD Only

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

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

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

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

### Release Notification and Corrective Action

nJMW 1228428008		OPERATOR	<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Name of Company: BOPCO, L.P. 260737		Contact: Tony Savoie		
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220		Telephone No. 575-887-7329		
Facility Name: Delaware "C" Tank Battery, same well pad as the PLU-153		Facility Type: Exploration and Production		
Surface Owner: Federal		Mineral Owner: Federal		API No. 30-015-31412

### LOCATION OF RELEASE

Unit Letter G	Section 6	Township 24S	Range 30 E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
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Latitude N 32.248735 Longitude W 103.918797

### NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 200 bbls produced water	Volume Recovered: 5 bbls
Source of Release: Truck load line	Date and Hour of Occurrence: 9/2/12 time unknown	Date and Hour of Discovery: 9/2/12 8:00 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Artesia NMOCD emergency #104	
By Whom? Tony Savoie	Date and Hour: 9/2/12 at 12:19 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

**RECEIVED**

SEP 06 2012

**NMOCD ARTESIA**

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

The truck load line valve was left open allowing the produced water to spill out onto the tank battery pad. The valve was closed upon discovery.

Describe Area Affected and Cleanup Action Taken.\*

Approximately 11,770 sq.ft. of caliche pad and lease road and approximately 7060 sq.ft. of pasture was affected by the release, all of the fluid that was released into the pasture soaked in, the free standing fluid was removed with a backhoe and the saturated soil on the caliche pad was scraped up and stockpiled on-site. The spill will be remediated in accordance to the NMOCD recommended guidelines for spills.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: <u>Tony Savoie</u>		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie		Approved by Environmental Specialist: Signed By <u>M. L. Brannon</u>	
Title: Waste Management and Remediation Specialist		Approval Date: <u>OCT 10 2012</u>	Expiration Date:
E-mail Address: <u>tasavoie@basspet.com</u>		Conditions of Approval:	
Date: 9/5/12	Phone: 432-556-8730	Attached <input type="checkbox"/>	

\* Attach Additional Sheets If Necessary

Remediation per OCD Rules &  
Guidelines. **SUBMIT REMEDIATION  
PROPOSAL NOT LATER THAN:**

November 10, 2012

2RP-1304

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

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

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

Incident ID	
District RP	2RP-1304
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-1304
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.248735 Longitude -103.918797  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Delaware "C" Tank Battery	Site Type Exploration and Production
Date Release Discovered 9/2/2012	API# (if applicable) 30-015-31412

Unit Letter	Section	Township	Range	County
G	6	24S	30E	Eddy

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 200 bbls	Volume Recovered (bbls) 5 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The truck load line valve was left open allowing the produced water to spill out onto the tank battery pad. The valve was closed upon discovery. Approximately 11,770 square feet of caliche pad and lease road, and approximately 7,060 square feet of pasture land was affected by the release. Free standing fluid was removed with a backhoe and the saturated soil on the caliche pad was scraped up and stockpiled on-site.

Incident ID	
District RP	2RP-1304
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? Yes, by Tony Savoie to Emergency Response #104 on 9/2/2012 at 12:19 p.m.	

## Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:          	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&amp;E Supervisor</u>
Signature: _____	Date: <u>3/20/2020</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<b><u>OCD Only</u></b>  Received by: _____ Date: _____	

Incident ID	
District RP	2RP-1304
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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



State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-1304
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	2RP-1304
Facility ID	
Application ID	

## Closure

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

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

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: 432-221-7331

### **OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

1025 N. Francis Dr., Albuquerque, NM 87106

## Energy Minerals and Natural Resources

Revised August 8, 2011

## District II

811 S. First St., Artesia, NM 88210

## District III

1000 Rio Brazos Road, Aztec, NM 87410

## District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

## Oil Conservation Division

1220 South St. Francis Dr.

Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

## Release Notification and Corrective Action

JMW 1228429248

## OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. 260 737

Contact: Tony Savoie

Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220

Telephone No. 575-887-7329

Facility Name: Delaware "C" Tank Battery, same well pad as  
the PLU-153

Facility Type: Exploration and Production

Surface Owner: Federal

Mineral Owner: Federal

API No. 30-015-31412

## LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	6	24S	30 E					Eddy

Latitude N 32.248735 Longitude W 103.918797

## NATURE OF RELEASE

Type of Release: Crude oil and produced water	Volume of Release: 10 bbls crude oil and 20 bbls produced water	Volume Recovered: None
Source of Release: Produced water tank	Date and Hour of Occurrence: 8/18/12 at 4:00 p.m.	Date and Hour of Discovery: 8/18/12 4:00 p.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Late notification in person to Randy Dade	
By Whom?	Date and Hour: 8/20/12 8:30 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

RECEIVED

SEP 06 2012

NMOCD ARTESIA

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

The water transfer pumps failed causing the water tanks to over-flow, an equalizer line was opened within 20 minutes after the tanks started to spill over. This action stopped the spill until the pumps could be repaired.

Describe Area Affected and Cleanup Action Taken.\*

The 0 perm containment was being repaired at the time of the spill, the spill affected an area of approximately 900 sq. ft inside the containment area, and approximately 2000 sq. ft pasture area west of the tank battery. All of the impacted soil that could be removed around the tanks was hand excavated and placed on the pad area near the tank battery, approximately 40 cubic yards of soil was removed, the area was sampled and backfilled to allow for the containment to be re-built, and the liner installed. The area outside the containment will be remediated at a later date following the NMOCD guidelines for remediation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

## OIL CONSERVATION DIVISION

Signature: Tony Savoie

Printed Name: Tony Savoie

Approved by Environmental Specialist: Signed By Mike Benavides

Title: Waste Management and Remediation Specialist

Approval Date: OCT 10 2012 Expiration Date:

E-mail Address: tasavoie@basspet.com

Conditions of Approval:

Attached ☐

Date: 9/5/12

Phone: 432-556-8730

Remediation per OCD Rules &  
Guidelines. **SUBMIT REMEDIATION  
PROPOSAL NOT LATER THAN:**

November 10, 2012

2RP-1305

\* Attach Additional Sheets If Necessary

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

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

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

Incident ID	
District RP	2RP-1305
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-1305
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.248735 Longitude -103.918797  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Delaware "C" Tank Battery	Site Type Exploration and Production
Date Release Discovered 8/18/2012	API# (if applicable) 30-015-31412

Unit Letter	Section	Township	Range	County
G	6	24S	30E	Eddy

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

Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 10 bbls	Volume Recovered (bbls) 0 bbls
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 20 bbls	Volume Recovered (bbls) 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The water transfer pumps failed causing the water tanks to overflow, an equalizer line was opened within 20 minutes after the tanks started to spill over. The release affected approximately 900 square feet inside the containment area and approximately 2,000 square feet of pasture area west of the tank battery. All of the impacted soil that could be removed around the tanks was excavated. The area was sampled and backfilled to allow for the containment to be re-built, and the liner installed.

Incident ID	
District RP	2RP-1305
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? No, late notification was given in person to Randy Dade on 8/20/2012 at 8:30 a.m.	

## Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:          
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.  Printed Name: <u>Kyle Littrell</u> Title: <u>SH&amp;E Supervisor</u>  Signature: _____ Date: <u>3/20/2020</u>  email: <u>Kyle_Littrell@xtoenergy.com</u> Telephone: <u>432-221-7331</u>
<b><u>OCD Only</u></b>  Received by: _____ Date: _____



Incident ID	
District RP	2RP-1305
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-1305
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	2RP-1305
Facility ID	
Application ID	

## Closure

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

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

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: 432-221-7331

### OCD Only

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

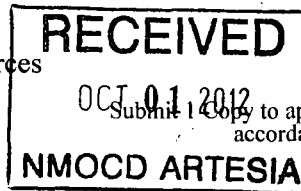
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

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

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



Form C-141  
Revised August 8, 2011

### Release Notification and Corrective Action

nJM W 12311 29593

#### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: BOPCO, L.P. <b>260737</b>	Contact: Tony Savoie
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 575-887-7329
Facility Name: Delaware "C" Tank Battery, same well pad as the PLU-153	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-31412
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#### LOCATION OF RELEASE

Unit Letter G	Section 6	Township 24S	Range 30 E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
------------------	--------------	-----------------	---------------	---------------	------------------	---------------	----------------	----------------

Latitude N 32.248735 Longitude W 103.918797

#### NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 650 bbls produced water	Volume Recovered: 0 bbls
Source of Release: 8" suction line to SWD H-pump	Date and Hour of Occurrence: 8/19/12 time approximately 12:00 a.m. 9/19/12	Date and Hour of Discovery: 8/19/12 2:00 a.m. 9/19/12
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Artesia NMOC D emergency #104 and Jim Amos with the BLM	
By Whom? Tony Savoie	Date and Hour: 8/19/12 at 8:52 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

A connection going from the charge pumps to the H-pump failed, the pumps were shut down upon discovery and the line was repaired the next morning.

Describe Area Affected and Cleanup Action Taken.\*

The area around the SWD battery, the road and pasture were impacted by the new release, the same areas involved had been impacted by recent releases at the same location. A rig is being scheduled to determine the vertical extent under the containment and all of the impacted areas. The spill will be remediated in accordance to the NMOC D recommended guidelines for spills.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC D 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 NMOC D marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC D 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.

Signature: <i>Tony Savoie</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Tony Savoie	Approved by Environmental Specialist Signed By <i>Mike Brandon</i>	
Title: Waste Management and Remediation Specialist	NOV 06 2012 Approval Date:	Expiration Date:
E-mail Address: tasavoie@basspet.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 9/28/12 Phone: 432-556-8730		

\* Attach Additional Sheets If Necessary

Remediation per OCD Rules & Guidelines. **SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:**

*December 6<sup>th</sup> 2012*

*2RP-1382*

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

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

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

Incident ID	
District RP	2RP-1383
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-1383
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.248735 Longitude -103.918797  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Delaware "C" Tank Battery	Site Type Exploration and Production
Date Release Discovered 9/19/2012	API# (if applicable) 30-015-31412

Unit Letter	Section	Township	Range	County
G	6	24S	30E	Eddy

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 650 bbls	Volume Recovered (bbls) 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A connection going from the charge pumps to the H-pump failed. The pumps were shut down upon discovery and the line was repaired. The area around the SWD battery, the road, and the pasture were impacted by the release.



Incident ID	
District RP	2RP-1383
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? Yes, by Tony Savoie to NMOCE Emergency Response #104 and Jim Amos (BLM) on 9/19/2012 at 8:52 a.m..	

## Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:          	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&amp;E Supervisor</u>
Signature: _____	Date: <u>3/20/2020</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<b><u>OCD Only</u></b>  Received by: _____ Date: _____	

Incident ID	
District RP	2RP-1383
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-1383
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	2RP-1383
Facility ID	
Application ID	

## Closure

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

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

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: 432-221-7331

### OCD Only

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

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

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

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

### Release Notification and Corrective Action

*nHMP1411828179*

Name of Company: BOPCO, L.P. <i>260737</i>	OPERATOR <input checked="" type="checkbox"/> Initial Report <input type="checkbox"/> Final Report
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Contact: Tony Savoie
Facility Name: Delaware "C" Tank Battery, same well pad as the PLU-153	Telephone No. 575-887-7329
	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-31412
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### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	6	24S	30 E	1830	North	1980	East	Eddy

Latitude N 32.248866 Longitude W 103.919096

### NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 200 bbls	Volume Recovered: 15 bbls
Source of Release: 3" SWD injection line	Date and Hour of Occurrence: 4/21/14 time unknown	Date and Hour of Discovery: 4/21/14 at 12:30 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOCD emergency #104 and the BLM	
By Whom? Tony Savoie	Date and Hour: 4/21/14 at 2:30 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

A 3" high pressure fiberglass line coupling broke in the coupling threads. The connection was replaced.

Describe Area Affected and Cleanup Action Taken.\*

The spill impacted approximately 4000 sq.ft. of pad area at the SWD location, approximately 4200 sq.ft. of pasture area and approximately 1300 sq.ft. of lease road. The spill ponded and followed a spill path almost identical to a spill at the same pump location on 5/30/12 reference 2RP-1205. The SWD is scheduled to be dismantled and the oil production battery re-located this year. There are several open C-141's for this facility that will be addressed at the time the battery is re-located.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: <i>Tony Savoie</i>		OIL CONSERVATION DIVISION	
Printed Name: Tony Savoie		Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Waste Management and Remediation Specialist		Approval Date: <i>4/28/14</i>	Expiration Date: <i>NA</i>
E-mail Address: <i>tasavoie@basspet.com</i>		Conditions of Approval:	
Date: 4/24/14	Phone: 432-556-8730	Remediation per OCD Rule & Guidelines, & like approval by BLM. <b>SUBMIT REMEDIATION PROPOSAL NO LATER THAN:</b>	

\* Attach Additional Sheets If Necessary

**PROPOSAL NO LATER THAN:**

*5/28/14*

Attached ☐

*2RP-2264*



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

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

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

Incident ID	
District RP	2RP-2264
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-2264
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.248866 Longitude -103.919096  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Delaware "C" Tank Battery	Site Type Exploration and Production
Date Release Discovered 4/21/2014	API# (if applicable) 30-015-31412

Unit Letter	Section	Township	Range	County
G	6	24S	30E	Eddy

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 200 bbls	Volume Recovered (bbls) 15 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A 3" high pressure fiberglass line coupling broke in the coupling threads. The connection was replaced. The release impacted approximately 4000 square feet of pad area, approximately 4200 square feet of pasture area, and approximately 1300 square feet of lease road. The release ponded and followed a spill path identical to a spill at the same pump location reference 2RP-1205. The SWD is scheduled to be dismantled, all open releases will be addressed at that time.

Incident ID	
District RP	2RP-2264
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? Yes, by Tony Savoie to NMOCD Emergency Response #104 and BLM on 4/21/2014 at 2:30 p.m.	

## Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:          	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&amp;E Supervisor</u>
Signature: _____	Date: <u>3/20/2020</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<b><u>OCD Only</u></b>  Received by: _____ Date: _____	

Incident ID	
District RP	2RP-2264
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-2264
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	2RP-2264
Facility ID	
Application ID	

## Closure

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

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

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: \_\_\_\_\_ Date: 3/20/2020

email: Kyle\_Littrell@xtoenergy.com Telephone: 432-221-7331

### OCD Only

Received by: \_\_\_\_\_ Date: \_\_\_\_\_


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


Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_


Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_




ATTACHMENT 2: LITHOLOGIC/SOIL SAMPLING LOGS


 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH08		8/20/2018				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
dry	1	0.7			2'	0		Reddish brown clay with silt
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
12								


 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH09		8/20/2018				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
dry	0.8	1.0			2'	0		Reddish brown clay with silt
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
12								


 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH10		8/20/2018				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>				Logged By: JH				
Lat/Long:		Field Screening:		Method:				
		Chloride, PID		Hole Diameter:				
				Total Depth:				
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
dry	1.2	1.9			2'	0		Reddish brown clay with silt
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
12								


 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH11		8/20/2018				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
dry	1.0	1.4			2'	0		Reddish brown clay with silt
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
12								




 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH12		8/20/2018				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>				Logged By: JH				
Lat/Long:		Field Screening:		Method:				
		Chloride, PID		Hole Diameter:				
				Total Depth:				
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
dry	1.6	1.8			2'	0		Reddish brown clay with silt
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
12								

 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:	Date:					
		BH13	8/20/2018					
		Site Name:	PLU Delaware C SWD					
		RP or Incident Number:	2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383					
		LTE Job Number:	2RP-2264					
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>		Logged By: JH	Method:					
Lat/Long:	Field Screening:	Hole Diameter:	Total Depth:					
Chloride, PID								
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
						1		
	7.2	1.5			2'	2		light tan, sandy loam with caliche
	6.2	0.8			3'	3		Same as above
	8.2	0.5			4'	4		Same as above
						5		
						6		
	5.2	0.4			7'	7		medium tan, sandy loam with caliche
						8		
						9		
	3.0	0.3			10'	10		Same as above
						11		
	1	0.5			12'	12		Medium tan sandy loam

 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH14		8/21/2018				
		Site Name: PLU Delaware C SWD						
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
						1		
	2.6	2.7			2'	2		med. Brown silty sand loam
	1.8	2.8			3'	3		same as above
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH15		8/21/2018				
		Site Name: PLU Delaware C SWD						
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
	2	0.5			2'	0		reddish brown clay
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or PH Name:		Date:				
		BH16		8/21/2018				
		Site Name: PLU Delaware C SWD						
		RP or Incident Number:		2RP-1304, 2RP-1205, 2RP-1305, 2RP-1383				
		LTE Job Number:		2RP-2264				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Logged By: JH				
		Chloride, PID		Method:				
Hole Diameter:		Total Depth:						
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
	1.0	0.4			2'	0		silt loam, sandy in parts
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		





**LT Environmental, Inc.**  
508 West Stevens Street  
Carlsbad, New Mexico 88220

Identifier:

PH 17

Date:

10.24.19

Project Name:

PLU Delaware C

RP Number: REP-

1205, 1304, 1305, 1303, 2064

## LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

PID

Chloride

Logged By: SL

Method: trackhoe


Hole Diameter:

Total Depth: 2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1000	D 616	0.0	2	PH17	1	1	SP-3M	1-2 Sand, Brown, no odor, no stain, m-f, poorly graded trace silt
1010	D 493	0.0	2	PH17A	2	2		
					3			TD @ 2'
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH108	Date: 10.24.19
		Project Name: PLU Delaware C	RP Number: 2RP 1205, 1304, 1305, 1383, 2264
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>			
Lat/Long:		Field Screening: PH108 Chloride	Logged By: SL Method: Trackhoe
Comments:		Hole Diameter:	Total Depth: 2'

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
125	D	554	0.0	N	PH108	1	SP-SM	1-2 sand, brown, no odor, no stain, m-f, poorly graded trace silt
1430	D	554	0.0	N	PH108A	2		
TD @ 2'								
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



**LT Environmental, Inc.**  
508 West Stevens Street  
Carlsbad, New Mexico 88220

Identifier:

PH19

Date:

10.24.19

Project Name:

DLV Delaware C

RP Number: 2 RP.

1205, 1304, 1305, 1383, 2264

**LITHOLOGIC / SOIL SAMPLING LOG**

Lat/Long:

Field Screening:

PID

Chloride

Logged By: SL

Method: Trackhoe

Hole Diameter:


Total Depth:

2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1035	D	557	0.0	N	PH19	1	sp. sm	1-2 Sand, Brown no odor, med. poorly graded, trace silt
1040	D	750	0.0	N	PH19A	2		
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			




 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH 20	Date: 10.24.19
		Project Name: PLU Delaware C	RP Number: 2RP 1205, 1304, 1305, 1303, 2264
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>			
Lat/Long:		Field Screening: PID Chloride	Logged By: SL Method: track hoe
Comments:		Hole Diameter:	Total Depth: 2'


  


Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1030 D	554	0.0	N	PH20	1	1	SP-SM	1-2 Sand, Brown, no odor, no stain, m-f, poorly graded trace silt
1055 D	342	0.0	N	PH20A	2	2		
					3			Top of 2'
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			




		<b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH 21		Date: 10-24-19	
				Project Name: PLU Delance C		RP Number: 2RP 1205, 1204, 1203, 1383, 2264	
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							
Lat/Long:		Field Screening:		Logged By: SL		Method: Truckhoe	
		PHD Chloride		Hole Diameter:		Total Depth: 2'	
Comments:							
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type
					0		
120	D 179	0.0	N	PH 21	1	1	SP-sym
125	D 1075	0.0	N	PH 114	2	2	
Lithology/Remarks							
102 Sand, Brown, no odor, no stain, m-f, poorly graded, trace silt							
TD @ 2'							
					3		
					4		
					5		
					6		
					7		
					8		
					9		
					10		
					11		
					12		



		<b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH22		Date: 10.24.19	
				Project Name: PW Delancey C		RP Number: 200 1205, 1304, 1305, 1303, 2204	
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							
Lat/Long:		Field Screening:		Logged By: SL		Method: Trackhoe	
		PID Chloride		Hole Diameter:		Total Depth: 2'	
Comments:							
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type
					0		
0	342	0.0	N	PH22	1	1	SP-SM
0	150	0.0	N	PH22A	2	2	
1-2 Sand, Brown, no odor, no stain m-f, poorly graded, trace silt							
TD @ 2'							
					3		
					4		
					5		
					6		
					7		
					8		
					9		
					10		
					11		
					12		

		<b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH23		Date: 10.24.19	
				Project Name: PLU Delaware C		RP Number: 2RP 1205, 1304, 1305, 1307, 2264	
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							
Lat/Long:		Field Screening:		Logged By: SL		Method: Track hoe	
		PID Chloride		Hole Diameter:		Total Depth: 2'	
Comments:							
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type
					0		
1245 D	991	0.0	N	PH23	1	1	SP-SM
1250 D	991	0.0	N	PH23A	2	2	
Lithology/Remarks							
1-2 sand, brown, no odor, no stain, m-f, poorly graded. trace silt  TD @ 2'							
					3		
					4		
					5		
					6		
					7		
					8		
					9		
					10		
					11		
					12		



 <b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220		Identifier: PH24	Date: 10.24.19					
		Project Name: PLV Delaware C	RP Number: WAP 1205, 1304, 1305, 1383, 2264					
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:	Logged By: SL Hole Diameter:					
		<input checked="" type="checkbox"/> PID <input checked="" type="checkbox"/> Chloride	Method: Truck hoe Total Depth: 2'					
Comments:								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1310 D	431	0.0	N	PH24	1	1	JSon	1-2 Sand, Brown, no odor, no staining, m-f poorly graded trace silt
1320 D	252	0.0	N	PH24	2	2		
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

TO @ 2'

ATTACHMENT 3: PHOTOGRAPHIC LOGS





## PHOTOGRAPHIC LOG



**Photograph 1:** View of lease road leading to pad – looking east.



**Photograph 2:** View of pad and SWD tank battery – looking west



**Photograph 3:** View of well vegetated western pasture area.



**Photograph 4:** View of pad and SWD tank battery – looking south.

PLU DELAWARE C SWD BATTERY/DELAWARE C TANK BATTERY  
32.248850, -103.919067



ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS



# Analytical Report 575577

for  
LT Environmental, Inc.

Project Manager: Adrian Baker

Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

18-DEC-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)

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-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



18-DEC-18

Project Manager: **Adrian Baker**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **575577**

**Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264**

Project Address: Carlsbad, NM

**Adrian Baker:**

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) 575577. 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. 575577 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

**Jessica Kramer**

Project Assistant

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

*Certified and approved by numerous States and Agencies.*

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

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

**Sample Cross Reference 575577****LT Environmental, Inc., Arvada, CO**

Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS1	S	02-06-18 15:56		575577-001
SS2	S	02-06-18 15:57		575577-002
SS3	S	02-06-18 15:59	6"	575577-003
SS4	S	02-06-18 16:01	6"	575577-004
SS5	S	02-06-18 16:02	6"	575577-005
SS6	S	02-06-18 16:04		575577-006
SS7	S	02-06-18 15:35	6"	575577-007

**CASE NARRATIVE****Client Name: LT Environmental, Inc.****Project Name: Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264**

Project ID:

Report Date: 18-DEC-18

Work Order Number(s): 575577

Date Received: 02/07/2018

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**Sample receipt non conformances and comments:**

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3040647 BTEX by EPA 8021B

Lab Sample ID 575577-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 575577-001, -002, -003, -004, -005, -007.

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

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

Batch: LBA-3040738 BTEX by EPA 8021B

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

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

Samples affected are: 575577-006.





# Certificate of Analysis Summary 575577

LT Environmental, Inc., Arvada, CO

Project Name: Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Wed Feb-07-18 08:00 am

Report Date: 18-DEC-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	575577-001	575577-002	575577-003	575577-004	575577-005	575577-006
	<i>Field Id:</i>	SS1	SS2	SS3	SS4	SS5	SS6
	<i>Depth:</i>			6"-	6"-	6"-	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-06-18 15:56	Feb-06-18 15:57	Feb-06-18 15:59	Feb-06-18 16:01	Feb-06-18 16:02	Feb-06-18 16:04
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Feb-07-18 14:10	Feb-07-18 14:10	Feb-07-18 14:10	Feb-07-18 14:10	Feb-07-18 14:10	Feb-08-18 08:45
	<i>Analyzed:</i>	Feb-08-18 07:22	Feb-08-18 07:42	Feb-08-18 08:01	Feb-08-18 08:20	Feb-08-18 08:39	Feb-12-18 12:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
Toluene		<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
Ethylbenzene		<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
m,p-Xylenes		<0.00396 0.00396	<0.00404 0.00404	<0.00403 0.00403	<0.00402 0.00402	<0.00396 0.00396	<0.00709 0.00709
o-Xylene		<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
Total Xylenes		<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
Total BTEX		<0.00198 0.00198	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00355 0.00355
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Feb-13-18 15:00	Feb-13-18 15:00	Feb-13-18 15:00	Feb-13-18 15:00	Feb-13-18 15:00	Feb-13-18 15:00
	<i>Analyzed:</i>	Feb-13-18 19:46	Feb-13-18 19:53	Feb-13-18 20:14	Feb-13-18 20:21	Feb-13-18 20:28	Feb-13-18 20:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2140 24.9	6270 49.8	23.2 4.93	<4.99 4.99	<4.99 4.99	<4.98 4.98
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Feb-07-18 09:00	Feb-07-18 09:00	Feb-07-18 09:00	Feb-07-18 09:00	Feb-07-18 09:00	Feb-07-18 09:00
	<i>Analyzed:</i>	Feb-07-18 16:00	Feb-07-18 16:40	Feb-07-18 16:59	Feb-07-18 17:19	Feb-07-18 17:39	Feb-07-18 17:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		58.1 15.0	25.2 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		37.3 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		95.4 15.0	25.2 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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

*Jessica Kramer*

Jessica Kramer  
Project Assistant



# Certificate of Analysis Summary 575577

LT Environmental, Inc., Arvada, CO

Project Name: Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Wed Feb-07-18 08:00 am

Report Date: 18-DEC-18

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	575577-007					
	<b>Field Id:</b>	SS7					
	<b>Depth:</b>	6"-					
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Feb-06-18 15:35					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Feb-07-18 14:10					
	<b>Analyzed:</b>	Feb-08-18 09:17					
	<b>Units/RL:</b>	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		<0.00200 0.00200					
Ethylbenzene		<0.00200 0.00200					
m,p-Xylenes		<0.00401 0.00401					
o-Xylene		<0.00200 0.00200					
Total Xylenes		<0.00200 0.00200					
Total BTEX		<0.00200 0.00200					
<b>Inorganic Anions by EPA 300</b>	<b>Extracted:</b>	Feb-13-18 15:00					
	<b>Analyzed:</b>	Feb-13-18 20:42					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		2260 24.9					
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	Feb-07-18 09:00					
	<b>Analyzed:</b>	Feb-07-18 18:19					
	<b>Units/RL:</b>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9					
Diesel Range Organics (DRO)		1840 14.9					
Motor Oil Range Hydrocarbons (MRO)		410 14.9					
Total TPH		2250 14.9					

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

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

Jessica Kramer  
Project Assistant



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS1** Matrix: **Soil** Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-001 Date Collected: 02.06.18 15.56

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: JUM % Moisture:  
 Analyst: JUM Date Prep: 02.13.18 15.00 Basis: Wet Weight  
 Seq Number: 3040997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2140	24.9	mg/kg	02.13.18 19.46		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 02.07.18 09.00 Basis: Wet Weight  
 Seq Number: 3040461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 16.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	58.1	15.0	mg/kg	02.07.18 16.00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	37.3	15.0	mg/kg	02.07.18 16.00		1
Total TPH	PHC635	95.4	15.0	mg/kg	02.07.18 16.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.07.18 16.00	
o-Terphenyl	84-15-1	100	%	70-135	02.07.18 16.00	



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS1**  
 Lab Sample Id: 575577-001

Matrix: **Soil**  
 Date Collected: 02.06.18 15.56

Date Received: 02.07.18 08.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: **ALJ**

% Moisture:

Analyst: **ALJ**

Date Prep: 02.07.18 14.10

Basis: **Wet Weight**

Seq Number: 3040647

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.08.18 07.22	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.08.18 07.22	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.08.18 07.22	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.08.18 07.22	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.08.18 07.22	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.08.18 07.22	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.08.18 07.22	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	85	%	80-120	02.08.18 07.22		
4-Bromofluorobenzene	460-00-4	92	%	80-120	02.08.18 07.22		



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS2** Matrix: Soil Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-002 Date Collected: 02.06.18 15.57

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: JUM % Moisture:  
 Analyst: JUM Date Prep: 02.13.18 15.00 Basis: Wet Weight  
 Seq Number: 3040997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6270	49.8	mg/kg	02.13.18 19.53		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 02.07.18 09.00 Basis: Wet Weight  
 Seq Number: 3040461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 16.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	25.2	15.0	mg/kg	02.07.18 16.40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.18 16.40	U	1
Total TPH	PHC635	25.2	15.0	mg/kg	02.07.18 16.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.07.18 16.40	
o-Terphenyl	84-15-1	90	%	70-135	02.07.18 16.40	





## Certificate of Analytical Results 575577

**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS2**  
 Lab Sample Id: 575577-002

Matrix: **Soil**  
 Date Collected: 02.06.18 15.57

Date Received: 02.07.18 08.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: **ALJ**

% Moisture:

Analyst: **ALJ**

Date Prep: 02.07.18 14.10

Basis: **Wet Weight**

Seq Number: 3040647

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.08.18 07.42	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.08.18 07.42	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.08.18 07.42	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.08.18 07.42	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.08.18 07.42	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.08.18 07.42	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.08.18 07.42	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	97	%	80-120	02.08.18 07.42		
1,4-Difluorobenzene	540-36-3	85	%	80-120	02.08.18 07.42		



# Certificate of Analytical Results 575577

## LT Environmental, Inc., Arvada, CO Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS3** Matrix: **Soil** Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-003 Date Collected: 02.06.18 15.59 Sample Depth: 6"  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: **JUM** % Moisture:  
 Analyst: **JUM** Date Prep: 02.13.18 15.00 Basis: **Wet Weight**  
 Seq Number: 3040997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.2	4.93	mg/kg	02.13.18 20.14		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: **ARM** % Moisture:  
 Analyst: **ARM** Date Prep: 02.07.18 09.00 Basis: **Wet Weight**  
 Seq Number: 3040461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 16.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.18 16.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.18 16.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.18 16.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.07.18 16.59	
o-Terphenyl	84-15-1	96	%	70-135	02.07.18 16.59	



# Certificate of Analytical Results 575577



**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS3**  
 Lab Sample Id: 575577-003

Matrix: **Soil**  
 Date Collected: 02.06.18 15.59

Date Received: 02.07.18 08.00  
 Sample Depth: 6"

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: **ALJ**

% Moisture:

Analyst: **ALJ**

Date Prep: 02.07.18 14.10

Basis: **Wet Weight**

Seq Number: 3040647

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.08.18 08.01	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.08.18 08.01	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.08.18 08.01	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.08.18 08.01	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.08.18 08.01	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.08.18 08.01	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.08.18 08.01	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	84	%	80-120	02.08.18 08.01		
4-Bromofluorobenzene	460-00-4	98	%	80-120	02.08.18 08.01		



# Certificate of Analytical Results 575577

**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: <b>SS4</b>	Matrix: Soil	Date Received: 02.07.18 08.00
Lab Sample Id: 575577-004	Date Collected: 02.06.18 16.01	Sample Depth: 6"
Analytical Method: Inorganic Anions by EPA 300		Prep Method: E300P
Tech: JUM		% Moisture:
Analyst: JUM	Date Prep: 02.13.18 15.00	Basis: Wet Weight
Seq Number: 3040997		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	02.13.18 20.21	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 02.07.18 09.00
Seq Number: 3040461	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 17.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.18 17.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.18 17.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.18 17.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.07.18 17.19	
o-Terphenyl	84-15-1	92	%	70-135	02.07.18 17.19	



# Certificate of Analytical Results 575577

**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: <b>SS4</b>	Matrix: <b>Soil</b>	Date Received: 02.07.18 08.00
Lab Sample Id: 575577-004	Date Collected: 02.06.18 16.01	Sample Depth: 6"
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: <b>ALJ</b>		% Moisture:
Analyst: <b>ALJ</b>	Date Prep: 02.07.18 14.10	Basis: <b>Wet Weight</b>
Seq Number: 3040647		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.08.18 08.20	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.08.18 08.20	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.08.18 08.20	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.08.18 08.20	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.08.18 08.20	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.08.18 08.20	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.08.18 08.20	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	102	%	80-120	02.08.18 08.20		
1,4-Difluorobenzene	540-36-3	89	%	80-120	02.08.18 08.20		





# Certificate of Analytical Results 575577

## LT Environmental, Inc., Arvada, CO Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS5** Matrix: **Soil** Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-005 Date Collected: 02.06.18 16.02 Sample Depth: 6"  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: **JUM** % Moisture:  
 Analyst: **JUM** Date Prep: 02.13.18 15.00 Basis: **Wet Weight**  
 Seq Number: 3040997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	02.13.18 20.28	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: **ARM** % Moisture:  
 Analyst: **ARM** Date Prep: 02.07.18 09.00 Basis: **Wet Weight**  
 Seq Number: 3040461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 17.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.18 17.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.18 17.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.18 17.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.07.18 17.39	
o-Terphenyl	84-15-1	90	%	70-135	02.07.18 17.39	



# Certificate of Analytical Results 575577

**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: <b>SS5</b>	Matrix: <b>Soil</b>	Date Received: 02.07.18 08.00
Lab Sample Id: 575577-005	Date Collected: 02.06.18 16.02	Sample Depth: 6"
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: <b>ALJ</b>		% Moisture:
Analyst: <b>ALJ</b>	Date Prep: 02.07.18 14.10	Basis: <b>Wet Weight</b>
Seq Number: 3040647		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.08.18 08.39	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.08.18 08.39	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.08.18 08.39	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.08.18 08.39	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.08.18 08.39	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.08.18 08.39	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.08.18 08.39	U	1
<b>Surrogate</b>							
	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	97	%	80-120	02.08.18 08.39		
1,4-Difluorobenzene	540-36-3	86	%	80-120	02.08.18 08.39		



## Certificate of Analytical Results 575577

**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS6** Matrix: **Soil** Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-006 Date Collected: 02.06.18 16.04  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: **JUM** % Moisture:  
 Analyst: **JUM** Date Prep: 02.13.18 15.00 Basis: **Wet Weight**  
 Seq Number: 3040997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	02.13.18 20.35	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: **ARM** % Moisture:  
 Analyst: **ARM** Date Prep: 02.07.18 09.00 Basis: **Wet Weight**  
 Seq Number: 3040461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.07.18 17.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.07.18 17.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	02.07.18 17.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.07.18 17.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.07.18 17.59	
o-Terphenyl	84-15-1	90	%	70-135	02.07.18 17.59	



# Certificate of Analytical Results 575577

**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS6**  
 Lab Sample Id: 575577-006

Matrix: Soil  
 Date Collected: 02.06.18 16.04

Date Received: 02.07.18 08.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 02.08.18 08.45

Basis: Wet Weight

Seq Number: 3040738

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00355	0.00355	mg/kg	02.12.18 12.11	U	1
Toluene	108-88-3	<0.00355	0.00355	mg/kg	02.12.18 12.11	U	1
Ethylbenzene	100-41-4	<0.00355	0.00355	mg/kg	02.12.18 12.11	U	1
m,p-Xylenes	179601-23-1	<0.00709	0.00709	mg/kg	02.12.18 12.11	U	1
o-Xylene	95-47-6	<0.00355	0.00355	mg/kg	02.12.18 12.11	U	1
Total Xylenes	1330-20-7	<0.00355	0.00355	mg/kg	02.12.18 12.11	U	1
Total BTEX		<0.00355	0.00355	mg/kg	02.12.18 12.11	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	78	%	80-120	02.12.18 12.11	**	
1,4-Difluorobenzene	540-36-3	81	%	80-120	02.12.18 12.11		



# Certificate of Analytical Results 575577

## LT Environmental, Inc., Arvada, CO Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: **SS7** Matrix: Soil Date Received: 02.07.18 08.00  
 Lab Sample Id: 575577-007 Date Collected: 02.06.18 15.35 Sample Depth: 6"  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: JUM % Moisture:  
 Analyst: JUM Date Prep: 02.13.18 15.00 Basis: Wet Weight  
 Seq Number: 3040997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2260	24.9	mg/kg	02.13.18 20.42		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 02.07.18 09.00 Basis: Wet Weight  
 Seq Number: 3040461

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.07.18 18.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	1840	14.9	mg/kg	02.07.18 18.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	410	14.9	mg/kg	02.07.18 18.19		1
Total TPH	PHC635	2250	14.9	mg/kg	02.07.18 18.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.07.18 18.19	
o-Terphenyl	84-15-1	117	%	70-135	02.07.18 18.19	





# Certificate of Analytical Results 575577

**LT Environmental, Inc., Arvada, CO**  
 Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

Sample Id: <b>SS7</b>	Matrix: Soil	Date Received: 02.07.18 08.00
Lab Sample Id: 575577-007	Date Collected: 02.06.18 15.35	Sample Depth: 6"
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: ALJ		% Moisture:
Analyst: ALJ	Date Prep: 02.07.18 14.10	Basis: Wet Weight
Seq Number: 3040647		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.08.18 09.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.08.18 09.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.08.18 09.17	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.08.18 09.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.08.18 09.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.08.18 09.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.08.18 09.17	U	1
<b>Surrogate</b>							
	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	85	%	80-120	02.08.18 09.17		
4-Bromofluorobenzene	460-00-4	94	%	80-120	02.08.18 09.17		



## 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      **SQL** 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



## LT Environmental, Inc.

Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040997

Matrix: Solid

Prep Method: E300P

MB Sample Id: 7639086-1-BLK

LCS Sample Id: 7639086-1-BKS

Date Prep: 02.13.18

LCSD Sample Id: 7639086-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	274	110	271	108	90-110	1	20	mg/kg	02.13.18 18:57	

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040997

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 575576-004

MS Sample Id: 575576-004 S

Date Prep: 02.13.18

MSD Sample Id: 575576-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	23.6	250	296	109	310	115	90-110	5	20	mg/kg	02.13.18 19:18	X

## Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3040997

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 575578-001

MS Sample Id: 575578-001 S

Date Prep: 02.13.18

MSD Sample Id: 575578-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	701	249	940	96	960	104	90-110	2	20	mg/kg	02.13.18 20:56	

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3040461

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 7638719-1-BLK

LCS Sample Id: 7638719-1-BKS

Date Prep: 02.07.18

LCSD Sample Id: 7638719-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	972	97	1090	109	70-135	11	35	mg/kg	02.07.18 09:31	
Diesel Range Organics (DRO)	<8.13	1000	1100	110	1150	115	70-135	4	35	mg/kg	02.07.18 09:31	

## Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		109		129		70-135	%	02.07.18 09:31
o-Terphenyl	111		107		114		70-135	%	02.07.18 09:31

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



## LT Environmental, Inc.

Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3040461

Parent Sample Id: 575430-001

Matrix: Soil

MS Sample Id: 575430-001 S

Prep Method: TX1005P

Date Prep: 02.07.18

MSD Sample Id: 575430-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	974	98	1090	109	70-135	11	35	mg/kg	02.07.18 10:34	
Diesel Range Organics (DRO)	14.4	998	1000	99	1120	111	70-135	11	35	mg/kg	02.07.18 10:34	

## Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		118		70-135	%	02.07.18 10:34
o-Terphenyl	112		100		70-135	%	02.07.18 10:34

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040647

MB Sample Id: 7638867-1-BLK

Matrix: Solid

LCS Sample Id: 7638867-1-BKS

Prep Method: SW5030B

Date Prep: 02.07.18

LCSD Sample Id: 7638867-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0789	78	0.0706	71	70-130	11	35	mg/kg	02.07.18 23:07	
Toluene	<0.00202	0.101	0.0831	82	0.0737	74	70-130	12	35	mg/kg	02.07.18 23:07	
Ethylbenzene	<0.00202	0.101	0.0937	93	0.0851	85	71-129	10	35	mg/kg	02.07.18 23:07	
m,p-Xylenes	<0.00403	0.202	0.184	91	0.168	84	70-135	9	35	mg/kg	02.07.18 23:07	
o-Xylene	<0.00202	0.101	0.0921	91	0.0858	86	71-133	7	35	mg/kg	02.07.18 23:07	

## Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		90		90		80-120	%	02.07.18 23:07
4-Bromofluorobenzene	102		102		112		80-120	%	02.07.18 23:07

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040738

MB Sample Id: 7638875-1-BLK

Matrix: Solid

LCS Sample Id: 7638875-1-BKS

Prep Method: SW5030B

Date Prep: 02.08.18

LCSD Sample Id: 7638875-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0821	83	0.0760	76	70-130	8	35	mg/kg	02.12.18 12:11	
Toluene	<0.00199	0.0994	0.0844	85	0.0813	81	70-130	4	35	mg/kg	02.12.18 12:11	
Ethylbenzene	<0.00199	0.0994	0.0895	90	0.0861	86	71-129	4	35	mg/kg	02.12.18 12:11	
m,p-Xylenes	<0.00398	0.199	0.174	87	0.167	84	70-135	4	35	mg/kg	02.12.18 12:11	
o-Xylene	<0.00199	0.0994	0.0884	89	0.0855	86	71-133	3	35	mg/kg	02.12.18 12:11	

## Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		95		93		80-120	%	02.12.18 12:11
4-Bromofluorobenzene	98		102		99		80-120	%	02.12.18 12:11

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



## LT Environmental, Inc.

Delaware C SWD 2RP-1305, 1304, 1383, 1205, 2264

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040647

Parent Sample Id: 575577-001

Matrix: Soil

MS Sample Id: 575577-001 S

Prep Method: SW5030B

Date Prep: 02.07.18

MSD Sample Id: 575577-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0703	70	0.0632	63	70-130	11	35	mg/kg	02.07.18 23:45	X
Toluene	<0.00200	0.0998	0.0700	70	0.0624	62	70-130	11	35	mg/kg	02.07.18 23:45	X
Ethylbenzene	<0.00200	0.0998	0.0719	72	0.0618	62	71-129	15	35	mg/kg	02.07.18 23:45	X
m,p-Xylenes	<0.00399	0.200	0.139	70	0.119	59	70-135	16	35	mg/kg	02.07.18 23:45	X
o-Xylene	<0.00200	0.0998	0.0724	73	0.0629	63	71-133	14	35	mg/kg	02.07.18 23:45	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		87		80-120	%	02.07.18 23:45
4-Bromofluorobenzene	106		99		80-120	%	02.07.18 23:45

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3040738

Parent Sample Id: 575578-002

Matrix: Soil

MS Sample Id: 575578-002 S

Prep Method: SW5030B

Date Prep: 02.08.18

MSD Sample Id: 575578-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.103	102	0.125	125	70-130	19	35	mg/kg	02.12.18 12:11	
Toluene	<0.00202	0.101	0.0648	64	0.0677	68	70-130	4	35	mg/kg	02.12.18 12:11	X
Ethylbenzene	<0.00202	0.101	0.0603	60	0.0673	67	71-129	11	35	mg/kg	02.12.18 12:11	X
m,p-Xylenes	<0.00404	0.202	0.117	58	0.131	65	70-135	11	35	mg/kg	02.12.18 12:11	X
o-Xylene	<0.00202	0.101	0.0605	60	0.0674	67	71-133	11	35	mg/kg	02.12.18 12:11	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		96		80-120	%	02.12.18 12:11
4-Bromofluorobenzene	106		100		80-120	%	02.12.18 12:11

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





## CHAIN OF CUSTODY

Page 1 of 1

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[illegible]

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$75 will be applied to each project. Xenoco's liability will be limited to the cost of samples. Any samples received by Xenoco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

# Analytical Report 596449

for  
**LT Environmental, Inc.**

**Project Manager: Adrian Baker**

**PLU Deleware C SWD**

**27-AUG-18**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

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

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



27-AUG-18

Project Manager: **Adrian Baker**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **596449**

**PLU Delaware C SWD**

Project Address: NM. Eddy 2RP-1305,1383 1304

**Adrian Baker:**

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) 596449. 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. 596449 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

**Jessica Kramer**

Project Assistant

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

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**Sample Cross Reference 596449****LT Environmental, Inc., Arvada, CO**

PLU Deleware C SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	08-17-18 10:15	14 ft	596449-001
BH02	S	08-17-18 11:30	5.5 ft	596449-002
BH03	S	08-17-18 11:45	4 ft	596449-003
BH04	S	08-17-18 12:15	9.5 ft	596449-004
BH05	S	08-17-18 13:50	6 ft	596449-005
BH06	S	08-17-18 15:00	9 ft	596449-006
BH07	S	08-17-18 16:10	12 ft	596449-007





## CASE NARRATIVE

**Client Name:** *LT Environmental, Inc.*

**Project Name:** *PLU Deleware C SWD*

Project ID:

Work Order Number(s): 596449

Report Date: 27-AUG-18

Date Received: 08/21/2018

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**Sample receipt non conformances and comments:**

None

---

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3061313 BTEX by EPA 8021B

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





# Certificate of Analysis Summary 596449

LT Environmental, Inc., Arvada, CO

Project Name: PLU Deleware C SWD

Project Id:

Contact: Adrian Baker

Project Location: NM. Eddy 2RP-1305,1383 1304

Date Received in Lab: Tue Aug-21-18 10:35 am

Report Date: 27-AUG-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	596449-001	596449-002	596449-003	596449-004	596449-005	596449-006
	<i>Field Id:</i>	BH01	BH02	BH03	BH04	BH05	BH06
	<i>Depth:</i>	14- ft	5.5- ft	4- ft	9.5- ft	6- ft	9- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-17-18 10:15	Aug-17-18 11:30	Aug-17-18 11:45	Aug-17-18 12:15	Aug-17-18 13:50	Aug-17-18 15:00
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Aug-25-18 10:30	Aug-25-18 10:30	Aug-25-18 10:30	Aug-25-18 10:30	Aug-25-18 10:30	Aug-25-18 10:30
	<i>Analyzed:</i>	Aug-26-18 10:04	Aug-26-18 10:25	Aug-26-18 10:46	Aug-26-18 11:07	Aug-26-18 12:10	Aug-26-18 12:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00401 0.00401	<0.00399 0.00399	<0.00402 0.00402	<0.00400 0.00400
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Aug-21-18 17:30	Aug-21-18 17:30	Aug-21-18 17:30	Aug-21-18 17:30	Aug-21-18 17:30	Aug-21-18 17:30
	<i>Analyzed:</i>	Aug-21-18 21:57	Aug-21-18 22:02	Aug-21-18 22:19	Aug-21-18 22:24	Aug-21-18 22:40	Aug-21-18 22:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		77.2 4.96	74.4 4.96	51.7 4.96	188 4.96	172 4.95	71.6 4.99
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Aug-21-18 16:00	Aug-21-18 16:00	Aug-21-18 16:00	Aug-21-18 16:00	Aug-21-18 16:00	Aug-21-18 16:00
	<i>Analyzed:</i>	Aug-21-18 23:13	Aug-21-18 23:33	Aug-21-18 23:52	Aug-22-18 00:52	Aug-22-18 01:11	Aug-22-18 01:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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Jessica Kramer  
Project Assistant



# Certificate of Analysis Summary 596449

LT Environmental, Inc., Arvada, CO

Project Name: PLU Deleware C SWD

Project Id:

Contact: Adrian Baker

Project Location: NM. Eddy 2RP-1305,1383 1304

Date Received in Lab: Tue Aug-21-18 10:35 am

Report Date: 27-AUG-18

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	596449-007					
	<b>Field Id:</b>	BH07					
	<b>Depth:</b>	12- ft					
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Aug-17-18 16:10					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Aug-25-18 10:30					
	<b>Analyzed:</b>	Aug-26-18 12:52					
	<b>Units/RL:</b>	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		<0.00200 0.00200					
Ethylbenzene		<0.00200 0.00200					
m,p-Xylenes		<0.00401 0.00401					
o-Xylene		<0.00200 0.00200					
Total Xylenes		<0.00200 0.00200					
Total BTEX		<0.00200 0.00200					
<b>Inorganic Anions by EPA 300</b>	<b>Extracted:</b>	Aug-21-18 17:30					
	<b>Analyzed:</b>	Aug-21-18 22:51					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		2550 24.9					
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	Aug-21-18 16:00					
	<b>Analyzed:</b>	Aug-22-18 01:50					
	<b>Units/RL:</b>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9					
Diesel Range Organics (DRO)		<14.9 14.9					
Oil Range Hydrocarbons (ORO)		<14.9 14.9					
Total TPH		<14.9 14.9					

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

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Jessica Kramer  
Project Assistant



## Certificate of Analytical Results 596449

## LT Environmental, Inc., Arvada, CO

## PLU Deleware C SWD

Sample Id: **BH01**  
 Lab Sample Id: 596449-001

Matrix: Soil  
 Date Collected: 08.17.18 10.15

Date Received: 08.21.18 10.35  
 Sample Depth: 14 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	77.2	4.96	mg/kg	08.21.18 21.57		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.21.18 23.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.21.18 23.13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.21.18 23.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.21.18 23.13	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1-Chlorooctane	111-85-3	92	%	70-135	08.21.18 23.13		
o-Terphenyl	84-15-1	90	%	70-135	08.21.18 23.13		



## Certificate of Analytical Results 596449

## LT Environmental, Inc., Arvada, CO

## PLU Deleware C SWD

Sample Id: **BH01**  
 Lab Sample Id: 596449-001

Matrix: Soil  
 Date Collected: 08.17.18 10.15

Date Received: 08.21.18 10.35  
 Sample Depth: 14 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.26.18 10.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.26.18 10.04	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	101	%	70-130	08.26.18 10.04		
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.26.18 10.04		



# Certificate of Analytical Results 596449

## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH02** Matrix: Soil Date Received: 08.21.18 10.35  
 Lab Sample Id: 596449-002 Date Collected: 08.17.18 11.30 Sample Depth: 5.5 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: SCM % Moisture:  
 Analyst: SCM Date Prep: 08.21.18 17.30 Basis: Wet Weight  
 Seq Number: 3060822

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.4	4.96	mg/kg	08.21.18 22.02		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 08.21.18 16.00 Basis: Wet Weight  
 Seq Number: 3060852

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.21.18 23.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.21.18 23.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.21.18 23.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.21.18 23.33	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1-Chlorooctane	111-85-3	93	%	70-135	08.21.18 23.33		
o-Terphenyl	84-15-1	90	%	70-135	08.21.18 23.33		





# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH02**  
Lab Sample Id: 596449-002

Matrix: Soil  
Date Collected: 08.17.18 11.30

Date Received: 08.21.18 10.35  
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.26.18 10.25	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.26.18 10.25	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.26.18 10.25	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.26.18 10.25	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.26.18 10.25	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.26.18 10.25	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.26.18 10.25	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104		%	70-130	08.26.18 10.25	
1,4-Difluorobenzene	540-36-3	105		%	70-130	08.26.18 10.25	



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH03**  
Lab Sample Id: 596449-003

Matrix: Soil  
Date Collected: 08.17.18 11.45

Date Received: 08.21.18 10.35  
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.7	4.96	mg/kg	08.21.18 22.19		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.21.18 23.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.21.18 23.52	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.21.18 23.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.21.18 23.52	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1-Chlorooctane	111-85-3	89	%	70-135	08.21.18 23.52		
o-Terphenyl	84-15-1	86	%	70-135	08.21.18 23.52		



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH03**  
Lab Sample Id: 596449-003

Matrix: Soil  
Date Collected: 08.17.18 11.45

Date Received: 08.21.18 10.35  
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.26.18 10.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.26.18 10.46	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110		%	70-130	08.26.18 10.46	
4-Bromofluorobenzene	460-00-4	103		%	70-130	08.26.18 10.46	



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH04**  
Lab Sample Id: 596449-004

Matrix: Soil  
Date Collected: 08.17.18 12.15

Date Received: 08.21.18 10.35  
Sample Depth: 9.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	188	4.96	mg/kg	08.21.18 22.24		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.22.18 00.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.22.18 00.52	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.22.18 00.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.22.18 00.52	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1-Chlorooctane	111-85-3	89	%	70-135	08.22.18 00.52		
o-Terphenyl	84-15-1	86	%	70-135	08.22.18 00.52		



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH04**  
Lab Sample Id: 596449-004

Matrix: Soil  
Date Collected: 08.17.18 12.15

Date Received: 08.21.18 10.35  
Sample Depth: 9.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.26.18 11.07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.26.18 11.07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.26.18 11.07	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.26.18 11.07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.26.18 11.07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.26.18 11.07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.26.18 11.07	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.26.18 11.07		
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.26.18 11.07		





# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH05**  
Lab Sample Id: 596449-005

Matrix: Soil  
Date Collected: 08.17.18 13.50

Date Received: 08.21.18 10.35  
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3060822

Date Prep: 08.21.18 17.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	172	4.95	mg/kg	08.21.18 22.40		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3060852

Date Prep: 08.21.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.22.18 01.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.22.18 01.11	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.22.18 01.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.22.18 01.11	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1-Chlorooctane	111-85-3	90	%	70-135	08.22.18 01.11		
o-Terphenyl	84-15-1	87	%	70-135	08.22.18 01.11		



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH05**  
Lab Sample Id: 596449-005

Matrix: Soil  
Date Collected: 08.17.18 13.50

Date Received: 08.21.18 10.35  
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.26.18 12.10	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.26.18 12.10	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.26.18 12.10	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.26.18 12.10	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.26.18 12.10	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.26.18 12.10	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.26.18 12.10	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.26.18 12.10		
4-Bromofluorobenzene	460-00-4	100	%	70-130	08.26.18 12.10		



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH06** Matrix: Soil Date Received: 08.21.18 10.35  
 Lab Sample Id: 596449-006 Date Collected: 08.17.18 15.00 Sample Depth: 9 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: SCM % Moisture:  
 Analyst: SCM Date Prep: 08.21.18 17.30 Basis: Wet Weight  
 Seq Number: 3060822

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	71.6	4.99	mg/kg	08.21.18 22.46		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 08.21.18 16.00 Basis: Wet Weight  
 Seq Number: 3060852

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.22.18 01.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.22.18 01.31	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.22.18 01.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.22.18 01.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	08.22.18 01.31	
o-Terphenyl	84-15-1	85	%	70-135	08.22.18 01.31	



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH06**  
Lab Sample Id: 596449-006

Matrix: Soil  
Date Collected: 08.17.18 15.00

Date Received: 08.21.18 10.35  
Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	08.26.18 12.31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.26.18 12.31	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99		%	70-130	08.26.18 12.31	
1,4-Difluorobenzene	540-36-3	98		%	70-130	08.26.18 12.31	



# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Deleware C SWD

Sample Id: **BH07** Matrix: Soil Date Received: 08.21.18 10.35  
 Lab Sample Id: 596449-007 Date Collected: 08.17.18 16.10 Sample Depth: 12 ft  
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P  
 Tech: SCM % Moisture:  
 Analyst: SCM Date Prep: 08.21.18 17.30 Basis: Wet Weight  
 Seq Number: 3060822

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2550	24.9	mg/kg	08.21.18 22.51		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P  
 Tech: ARM % Moisture:  
 Analyst: ARM Date Prep: 08.21.18 16.00 Basis: Wet Weight  
 Seq Number: 3060852

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.22.18 01.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.22.18 01.50	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.22.18 01.50	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.22.18 01.50	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1-Chlorooctane	111-85-3	90	%	70-135	08.22.18 01.50		
o-Terphenyl	84-15-1	88	%	70-135	08.22.18 01.50		





# Certificate of Analytical Results 596449



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH07**  
 Lab Sample Id: 596449-007

Matrix: Soil  
 Date Collected: 08.17.18 16.10

Date Received: 08.21.18 10.35  
 Sample Depth: 12 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.26.18 12.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.26.18 12.52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.26.18 12.52	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.26.18 12.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.26.18 12.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.26.18 12.52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.26.18 12.52	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	92	%	70-130	08.26.18 12.52		
4-Bromofluorobenzene	460-00-4	75	%	70-130	08.26.18 12.52		



## 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      **SQL** 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



**LT Environmental, Inc.**  
PLU Deleware C SWD

**Analytical Method:** Inorganic Anions by EPA 300

Seq Number: 3060822

MB Sample Id: 7660857-1-BLK

Matrix: Solid

LCS Sample Id: 7660857-1-BKS

Prep Method: E300P

Date Prep: 08.21.18

LCSD Sample Id: 7660857-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	250	100	249	100	90-110	0	20	mg/kg	08.21.18 20:35	

**Analytical Method:** Inorganic Anions by EPA 300

Seq Number: 3060822

Parent Sample Id: 596446-008

Matrix: Soil

MS Sample Id: 596446-008 S

Prep Method: E300P

Date Prep: 08.21.18

MSD Sample Id: 596446-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	351	250	584	93	586	94	90-110	0	20	mg/kg	08.21.18 20:51	

**Analytical Method:** Inorganic Anions by EPA 300

Seq Number: 3060822

Parent Sample Id: 596449-002

Matrix: Soil

MS Sample Id: 596449-002 S

Prep Method: E300P

Date Prep: 08.21.18

MSD Sample Id: 596449-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Chloride	74.4	248	325	101	324	101	90-110	0	20	mg/kg	08.21.18 22:08	

**Analytical Method:** TPH by SW8015 Mod

Seq Number: 3060852

MB Sample Id: 7660865-1-BLK

Matrix: Solid

LCS Sample Id: 7660865-1-BKS

Prep Method: TX1005P

Date Prep: 08.21.18

LCSD Sample Id: 7660865-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	984	98	1000	100	70-135	2	20	mg/kg	08.21.18 19:38	
Diesel Range Organics (DRO)	<15.0	1000	989	99	1000	100	70-135	1	20	mg/kg	08.21.18 19:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		119		121		70-135	%	08.21.18 19:38
o-Terphenyl	95		102		102		70-135	%	08.21.18 19:38

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



**LT Environmental, Inc.**  
PLU Deleware C SWD

**Analytical Method:** TPH by SW8015 Mod

Seq Number: 3060852

Parent Sample Id: 596317-009

Matrix: Soil

MS Sample Id: 596317-009 S

Prep Method: TX1005P

Date Prep: 08.21.18

MSD Sample Id: 596317-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1000	100	995	100	70-135	1	20	mg/kg	08.22.18 06:58	
Diesel Range Organics (DRO)	<15.0	1000	1030	103	1010	101	70-135	2	20	mg/kg	08.22.18 06:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		125		70-135	%	08.22.18 06:58
o-Terphenyl	102		102		70-135	%	08.22.18 06:58

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061313

MB Sample Id: 7661181-1-BLK

Matrix: Solid

LCS Sample Id: 7661181-1-BKS

Prep Method: SW5030B

Date Prep: 08.25.18

LCSD Sample Id: 7661181-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0935	94	0.101	100	70-130	8	35	mg/kg	08.26.18 02:22	
Toluene	<0.00200	0.100	0.0863	86	0.0948	94	70-130	9	35	mg/kg	08.26.18 02:22	
Ethylbenzene	<0.00200	0.100	0.0976	98	0.104	103	70-130	6	35	mg/kg	08.26.18 02:22	
m,p-Xylenes	<0.00401	0.200	0.217	109	0.233	116	70-130	7	35	mg/kg	08.26.18 02:22	
o-Xylene	<0.00200	0.100	0.106	106	0.114	113	70-130	7	35	mg/kg	08.26.18 02:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		107		109		70-130	%	08.26.18 02:22
4-Bromofluorobenzene	112		106		115		70-130	%	08.26.18 02:22

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061313

Parent Sample Id: 596319-008

Matrix: Soil

MS Sample Id: 596319-008 S

Prep Method: SW5030B

Date Prep: 08.25.18

MSD Sample Id: 596319-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP D	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0734	73	0.0633	63	70-130	15	35	mg/kg	08.26.18 03:04	X
Toluene	<0.00202	0.101	0.0649	64	0.0571	57	70-130	13	35	mg/kg	08.26.18 03:04	X
Ethylbenzene	<0.00202	0.101	0.0672	67	0.0608	61	70-130	10	35	mg/kg	08.26.18 03:04	X
m,p-Xylenes	<0.00403	0.202	0.148	73	0.131	66	70-130	12	35	mg/kg	08.26.18 03:04	X
o-Xylene	<0.00202	0.101	0.0689	68	0.0592	59	70-130	15	35	mg/kg	08.26.18 03:04	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		98		70-130	%	08.26.18 03:04
4-Bromofluorobenzene	101		124		70-130	%	08.26.18 03:04

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



***Setting the Standard since 1990***  
**Stafford, Texas (281-240-4200)**  
**Dallas Texas (214-902-0300)**

# CHAIN OF C STUDY

Page 1 of 1

Page 1 of 1

**San Antonio, Texas (210-509-3334)**  
**Midland, Texas (432-704-5251)**

**Phoenix, Arizona (480-355-0900)**

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes					
<b>Company Name / Branch:</b> LT Environmental, Inc. Permain Office <i>Midland TX</i>				<b>Project Name/Number:</b> PLD Delaware C SWP													
<b>Company Address:</b> 4302 N.H.St., Building Unit #103 Midland TX 79765				<b>Project Location:</b> NM - Eddy ZRP- 130S, 1383, 1304													
<b>Email:</b> abaker@ltenv.com 432-794-5178				<b>Invoice To:</b> XTO Energy Kyle Littlell													
<b>Phone No.:</b> 432-794-5178				<b>P.O Number:</b>													
<b>Sampler's Name:</b> Yada Lantier																	
No.	Field ID / Point or Collection	Sample Depth	Date	Time	Matrx	# of bottles	HCl	NaOH/Zn Acetate	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	NaHSO <sub>4</sub>	MEOH	NONE	BTEX 8021 (only BTEX)	TPH (MRO, GRO, DRO) 8015	Chloride (300.0)
1	BH01	14'	8/17/18	10:15	S	1								X	X	X	
2	BH02	5.5'		11:30	S	1								X	X	X	
3	BH03	4'		11:45	S	1								X	X	X	
4	BH04	9.5'		12:15	S	1								X	X	X	
5	BH05	6'		13:50	S	1								X	X	X	
6	BH06	9'		15:00	S	1								X	X	X	
7	BH07	12' V		16:10	S	1								X	X	X	
8																	
9																	
10																	
Turnaround Time (Business days)																	
Same Day TAT		<input type="checkbox"/> Same Day TAT		<input type="checkbox"/> Level II Std QC		<input type="checkbox"/> Level IV (Full Data Pkg raw data)											
Next Day EMERGENCY		<input type="checkbox"/> Next Day TAT		<input type="checkbox"/> Level III Std QC+ Forms		<input type="checkbox"/> TRRP Level IV											
2 Day EMERGENCY		<input checked="" type="checkbox"/> Contract TAT		<input type="checkbox"/> Level 3 (CLP Forms)		<input type="checkbox"/> UST / RG -411											
3 Day EMERGENCY				<input type="checkbox"/> TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm				FED-EX / UPS: Tracking # 77301897eyleo													
Relinquished by Sample:				Date Time: 8/20/18 9:45				Received By: [Signature]									
Relinquished by:				Date Time: 8/20/18 9:45				Received By: [Signature]									
Relinquished by:				Date Time:				Received By:									
Preserved where applicable				On Ice <input checked="" type="checkbox"/>				Cooler Temp. O.S.									
Thermo Corr. Factor																	

**Notice:** Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for loss of material and shall not be responsible for any other damages.

ORIGIN ID:MAFA (806) 794-1296 XENCO XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US		SHIP DATE: 20AUG18 ACTWT: 34.00 LB CAD: 10183706/NET14040 DIMS: 19x16x12 IN
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (806) 794-1296 INV: REF: PO: DEPT:		BILL RECEIPT

TRK# 7730 1897 6966

0201

**41 MAFA**

TX-US LBB

79701

TUE - 21 AUG 3:00P

STANDARD OVERNIGHT





552J1/3309/DCA5

**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

**Warning:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

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Client: LT Environmental, Inc.

Date/ Time Received: 08/21/2018 10:35:00 AM

Work Order #: 596449

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

## Sample Receipt Checklist

## Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 08/21/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/22/2018

# Analytical Report 596788

for  
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU Delaware C SWD

10-SEP-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):  
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)  
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)  
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)  
Xenco-Atlanta (LELAP Lab ID #04176)  
Xenco-Tampa: Florida (E87429)  
Xenco-Lakeland: Florida (E84098)



10-SEP-18

Project Manager: **Adrian Baker**  
**LT Environmental, Inc.**  
4600 W. 60th Avenue  
Arvada, CO 80003

Reference: XENCO Report No(s): **596788**  
**PLU Delaware C SWD**  
Project Address: Carlsbad, NM

**Adrian Baker:**

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) 596788. 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. 596788 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

**Jessica Kramer**  
Project Assistant

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

*Certified and approved by numerous States and Agencies.*

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

**Sample Cross Reference 596788****LT Environmental, Inc., Arvada, CO**

PLU Delaware C SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH14	S	08-21-18 09:20	3 ft	596788-001
BH15	S	08-21-18 09:45	2 ft	596788-002
BH16	S	08-21-18 11:30	2 ft	596788-003
SS12	S	08-21-18 11:10	6 In	596788-004
SS13	S	08-21-18 11:15	6 In	596788-005
SS14	S	08-21-18 11:20	6 In	596788-006
SS15	S	08-21-18 11:25	6 In	596788-007
SS16	S	08-21-18 11:30	6 In	596788-008



## CASE NARRATIVE

*Client Name: LT Environmental, Inc.*

*Project Name: PLU Delaware C SWD*

Project ID:  
Work Order Number(s): 596788

Report Date: 10-SEP-18  
Date Received: 08/23/2018

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**Sample receipt non conformances and comments:**

PER CLIENT EMAIL, CORRECTED SAMPLE NAMES FOR SAMPLE 004,005,006,007,008 JKR  
09/10/18 NEW VERSION GENERATED

---

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3061313 BTEX by EPA 8021B

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

Batch: LBA-3061437 BTEX by EPA 8021B

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

Batch: LBA-3061634 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 596788

LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C SWD

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Thu Aug-23-18 11:00 am

Report Date: 10-SEP-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	596788-001	596788-002	596788-003	596788-004	596788-005	596788-006
	<i>Field Id:</i>	BH14	BH15	BH16	SS12	SS13	SS14
	<i>Depth:</i>	3- ft	2- ft	2- ft	6- In	6- In	6- In
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-21-18 09:20	Aug-21-18 09:45	Aug-21-18 11:30	Aug-21-18 11:10	Aug-21-18 11:15	Aug-21-18 11:20
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Aug-28-18 08:00	Aug-28-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00
	<i>Analyzed:</i>	Aug-28-18 17:43	Aug-28-18 18:04	Aug-29-18 11:18	Aug-29-18 11:38	Aug-29-18 11:58	Aug-29-18 12:19
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00402 0.00402	<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Aug-23-18 16:45	Aug-23-18 16:45	Aug-23-18 16:45	Aug-23-18 16:45	Aug-23-18 16:45	Aug-23-18 16:45
	<i>Analyzed:</i>	Aug-23-18 21:20	Aug-23-18 21:42	Aug-23-18 21:58	Aug-23-18 22:04	Aug-23-18 22:09	Aug-23-18 22:15
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Chloride		317 4.98	1080 4.97	453 4.96	1800 24.9	258 4.95	183 4.96
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00
	<i>Analyzed:</i>	Aug-24-18 09:31	Aug-24-18 09:51	Aug-24-18 10:52	Aug-24-18 11:11	Aug-24-18 11:31	Aug-24-18 11:51
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		60.7 15.0	<15.0 15.0	20.6 14.9	81.5 15.0	15.5 14.9	<15.0 15.0
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		60.7 15.0	<15.0 15.0	20.6 14.9	81.5 15.0	15.5 14.9	<15.0 15.0

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

*Jessica Kramer*

Jessica Kramer  
Project Assistant





# Certificate of Analysis Summary 596788

LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C SWD

**Project Id:**

**Contact:** Adrian Baker

**Project Location:** Carlsbad, NM

**Date Received in Lab:** Thu Aug-23-18 11:00 am

**Report Date:** 10-SEP-18

**Project Manager:** Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	596788-007	596788-008				
	<b>Field Id:</b>	SS15	SS16				
	<b>Depth:</b>	6- In	6- In				
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Aug-21-18 11:25	Aug-21-18 11:30				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Aug-25-18 10:30	Aug-29-18 08:00				
	<b>Analyzed:</b>	Aug-26-18 15:17	Aug-29-18 13:00				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Benzene		<0.00201 0.00201	<0.00201 0.00201				
Toluene		<0.00201 0.00201	<0.00201 0.00201				
Ethylbenzene		<0.00201 0.00201	<0.00201 0.00201				
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402				
o-Xylene		<0.00201 0.00201	<0.00201 0.00201				
Total Xylenes		<0.00201 0.00201	<0.00201 0.00201				
Total BTEX		<0.00201 0.00201	<0.00201 0.00201				
<b>Inorganic Anions by EPA 300</b>	<b>Extracted:</b>	Aug-23-18 16:45	Aug-23-18 16:45				
	<b>Analyzed:</b>	Aug-23-18 22:20	Aug-23-18 22:26				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		82.0 4.95	491 24.8				
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	Aug-24-18 07:00	Aug-24-18 07:00				
	<b>Analyzed:</b>	Aug-24-18 12:11	Aug-24-18 12:32				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0				
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer  
Project Assistant



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH14**  
Lab Sample Id: 596788-001

Matrix: Soil  
Date Collected: 08.21.18 09.20

Date Received: 08.23.18 11.00  
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	317	4.98	mg/kg	08.23.18 21.20		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 09.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	60.7	15.0	mg/kg	08.24.18 09.31		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 09.31	U	1
Total TPH	PHC635	60.7	15.0	mg/kg	08.24.18 09.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.24.18 09.31	
o-Terphenyl	84-15-1	92	%	70-135	08.24.18 09.31	



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH14**  
Lab Sample Id: 596788-001

Matrix: Soil  
Date Collected: 08.21.18 09.20

Date Received: 08.23.18 11.00  
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.28.18 08.00

Basis: Wet Weight

Seq Number: 3061437

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.28.18 17.43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.28.18 17.43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.28.18 17.43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.28.18 17.43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.28.18 17.43	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.28.18 17.43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.28.18 17.43	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	94	%	70-130	08.28.18 17.43		
1,4-Difluorobenzene	540-36-3	95	%	70-130	08.28.18 17.43		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH15**  
Lab Sample Id: 596788-002

Matrix: Soil  
Date Collected: 08.21.18 09.45

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1080	4.97	mg/kg	08.23.18 21.42		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 09.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 09.51	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 09.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 09.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	08.24.18 09.51	
o-Terphenyl	84-15-1	85	%	70-135	08.24.18 09.51	



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH15**  
Lab Sample Id: 596788-002

Matrix: Soil  
Date Collected: 08.21.18 09.45

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.28.18 08.00

Basis: Wet Weight

Seq Number: 3061437

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.28.18 18.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.28.18 18.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.28.18 18.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.28.18 18.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.28.18 18.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.28.18 18.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.28.18 18.04	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	87	%	70-130	08.28.18 18.04		
1,4-Difluorobenzene	540-36-3	94	%	70-130	08.28.18 18.04		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH16**  
Lab Sample Id: 596788-003

Matrix: Soil  
Date Collected: 08.21.18 11.30

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	453	4.96	mg/kg	08.23.18 21.58		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.24.18 10.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	20.6	14.9	mg/kg	08.24.18 10.52		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.24.18 10.52	U	1
Total TPH	PHC635	20.6	14.9	mg/kg	08.24.18 10.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.24.18 10.52	
o-Terphenyl	84-15-1	95	%	70-135	08.24.18 10.52	





# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH16**  
Lab Sample Id: 596788-003

Matrix: Soil  
Date Collected: 08.21.18 11.30

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.29.18 11.18	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.29.18 11.18	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.29.18 11.18	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.29.18 11.18	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.29.18 11.18	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.29.18 11.18	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.29.18 11.18	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.29.18 11.18		
1,4-Difluorobenzene	540-36-3	119	%	70-130	08.29.18 11.18		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS12**  
Lab Sample Id: 596788-004

Matrix: Soil  
Date Collected: 08.21.18 11.10

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1800	24.9	mg/kg	08.23.18 22.04		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 11.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	81.5	15.0	mg/kg	08.24.18 11.11		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 11.11	U	1
Total TPH	PHC635	81.5	15.0	mg/kg	08.24.18 11.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.24.18 11.11	
o-Terphenyl	84-15-1	99	%	70-135	08.24.18 11.11	



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS12**  
 Lab Sample Id: 596788-004

Matrix: Soil  
 Date Collected: 08.21.18 11.10

Date Received: 08.23.18 11.00  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.29.18 11.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.29.18 11.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.29.18 11.38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.29.18 11.38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.29.18 11.38	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.29.18 11.38	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.29.18 11.38	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	95	%	70-130	08.29.18 11.38		
4-Bromofluorobenzene	460-00-4	103	%	70-130	08.29.18 11.38		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS13**  
Lab Sample Id: 596788-005

Matrix: Soil  
Date Collected: 08.21.18 11.15

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	258	4.95	mg/kg	08.23.18 22.09		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.24.18 11.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.5	14.9	mg/kg	08.24.18 11.31		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.24.18 11.31	U	1
Total TPH	PHC635	15.5	14.9	mg/kg	08.24.18 11.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	08.24.18 11.31	
o-Terphenyl	84-15-1	97	%	70-135	08.24.18 11.31	



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS13**  
 Lab Sample Id: 596788-005

Matrix: Soil  
 Date Collected: 08.21.18 11.15

Date Received: 08.23.18 11.00  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.29.18 11.58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.29.18 11.58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.29.18 11.58	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.29.18 11.58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.29.18 11.58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.29.18 11.58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.29.18 11.58	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	86	%	70-130	08.29.18 11.58		
1,4-Difluorobenzene	540-36-3	95	%	70-130	08.29.18 11.58		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS14**  
Lab Sample Id: 596788-006

Matrix: Soil  
Date Collected: 08.21.18 11.20

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	183	4.96	mg/kg	08.23.18 22.15		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 11.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 11.51	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 11.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 11.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.24.18 11.51	
o-Terphenyl	84-15-1	100	%	70-135	08.24.18 11.51	





# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS14**  
Lab Sample Id: 596788-006

Matrix: Soil  
Date Collected: 08.21.18 11.20

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.29.18 12.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.29.18 12.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.29.18 12.19	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.29.18 12.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.29.18 12.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.29.18 12.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.29.18 12.19	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	97	%	70-130	08.29.18 12.19		
1,4-Difluorobenzene	540-36-3	96	%	70-130	08.29.18 12.19		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS15**  
Lab Sample Id: 596788-007

Matrix: Soil  
Date Collected: 08.21.18 11.25

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	82.0	4.95	mg/kg	08.23.18 22.20		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 12.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 12.11	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 12.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 12.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.24.18 12.11	
o-Terphenyl	84-15-1	95	%	70-135	08.24.18 12.11	



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS15**  
 Lab Sample Id: 596788-007

Matrix: Soil  
 Date Collected: 08.21.18 11.25

Date Received: 08.23.18 11.00  
 Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.25.18 10.30

Basis: Wet Weight

Seq Number: 3061313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.26.18 15.17	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.26.18 15.17	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.26.18 15.17	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.26.18 15.17	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.26.18 15.17	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.26.18 15.17	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.26.18 15.17	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	100	%	70-130	08.26.18 15.17		
1,4-Difluorobenzene	540-36-3	97	%	70-130	08.26.18 15.17		



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS16**  
Lab Sample Id: 596788-008

Matrix: Soil  
Date Collected: 08.21.18 11.30

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061062

Date Prep: 08.23.18 16.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	491	24.8	mg/kg	08.23.18 22.26		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 12.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 12.32	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 12.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 12.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.24.18 12.32	
o-Terphenyl	84-15-1	95	%	70-135	08.24.18 12.32	



# Certificate of Analytical Results 596788



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS16**  
Lab Sample Id: 596788-008

Matrix: Soil  
Date Collected: 08.21.18 11.30

Date Received: 08.23.18 11.00  
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.29.18 13.00	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.29.18 13.00	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.29.18 13.00	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.29.18 13.00	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.29.18 13.00	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.29.18 13.00	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.29.18 13.00	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	115	%	70-130	08.29.18 13.00		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.29.18 13.00		



## 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





**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061062

MB Sample Id: 7661018-1-BLK

Matrix: Solid

LCS Sample Id: 7661018-1-BKS

Prep Method: E300P

Date Prep: 08.23.18

LCSD Sample Id: 7661018-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	246	98	246	98	90-110	0	20	mg/kg	08.23.18 19:52	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061062

Parent Sample Id: 596788-001

Matrix: Soil

MS Sample Id: 596788-001 S

Prep Method: E300P

Date Prep: 08.23.18

MSD Sample Id: 596788-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	317	249	553	95	551	94	90-110	0	20	mg/kg	08.23.18 21:25	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061062

Parent Sample Id: 596792-001

Matrix: Soil

MS Sample Id: 596792-001 S

Prep Method: E300P

Date Prep: 08.23.18

MSD Sample Id: 596792-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.12	256	263	103	266	104	90-110	1	20	mg/kg	08.23.18 20:09	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3061228

MB Sample Id: 7661126-1-BLK

Matrix: Solid

LCS Sample Id: 7661126-1-BKS

Prep Method: TX1005P

Date Prep: 08.24.18

LCSD Sample Id: 7661126-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	923	92	909	91	70-135	2	20	mg/kg	08.24.18 08:51	
Diesel Range Organics (DRO)	<15.0	1000	958	96	944	94	70-135	1	20	mg/kg	08.24.18 08:51	

**Surrogate**

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		114		109		70-135	%	08.24.18 08:51
o-Terphenyl	105		100		102		70-135	%	08.24.18 08:51

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

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

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

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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method:** TPH by SW8015 Mod

Seq Number: 3061228

Parent Sample Id: 596788-002

Matrix: Soil

MS Sample Id: 596788-002 S

Prep Method: TX1005P

Date Prep: 08.24.18

MSD Sample Id: 596788-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	1000	100	902	90	70-135	10	20	mg/kg	08.25.18 12:31	
Diesel Range Organics (DRO)	<15.0	997	1050	105	944	94	70-135	11	20	mg/kg	08.25.18 12:31	

**Surrogate**

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		113		70-135	%	08.25.18 12:31
o-Terphenyl	112		99		70-135	%	08.25.18 12:31

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061313

MB Sample Id: 7661181-1-BLK

Matrix: Solid

LCS Sample Id: 7661181-1-BKS

Prep Method: SW5030B

Date Prep: 08.25.18

LCSD Sample Id: 7661181-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0935	94	0.101	100	70-130	8	35	mg/kg	08.26.18 02:22	
Toluene	<0.00200	0.100	0.0863	86	0.0948	94	70-130	9	35	mg/kg	08.26.18 02:22	
Ethylbenzene	<0.00200	0.100	0.0976	98	0.104	103	70-130	6	35	mg/kg	08.26.18 02:22	
m,p-Xylenes	<0.00401	0.200	0.217	109	0.233	116	70-130	7	35	mg/kg	08.26.18 02:22	
o-Xylene	<0.00200	0.100	0.106	106	0.114	113	70-130	7	35	mg/kg	08.26.18 02:22	

**Surrogate**

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		107		109		70-130	%	08.26.18 02:22
4-Bromofluorobenzene	112		106		115		70-130	%	08.26.18 02:22

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061437

MB Sample Id: 7661266-1-BLK

Matrix: Solid

LCS Sample Id: 7661266-1-BKS

Prep Method: SW5030B

Date Prep: 08.28.18

LCSD Sample Id: 7661266-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.103	102	0.0983	98	70-130	5	35	mg/kg	08.28.18 08:45	
Toluene	<0.00202	0.101	0.0972	96	0.0929	93	70-130	5	35	mg/kg	08.28.18 08:45	
Ethylbenzene	<0.00202	0.101	0.111	110	0.105	105	70-130	6	35	mg/kg	08.28.18 08:45	
m,p-Xylenes	<0.00403	0.202	0.214	106	0.203	101	70-130	5	35	mg/kg	08.28.18 08:45	
o-Xylene	<0.00202	0.101	0.0985	98	0.0938	94	70-130	5	35	mg/kg	08.28.18 08:45	

**Surrogate**

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		93		94		70-130	%	08.28.18 08:45
4-Bromofluorobenzene	94		93		92		70-130	%	08.28.18 08:45

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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061634

MB Sample Id: 7661378-1-BLK

Matrix: Solid

LCS Sample Id: 7661378-1-BKS

Prep Method: SW5030B

Date Prep: 08.29.18

LCSD Sample Id: 7661378-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.107	107	0.0937	94	70-130	13	35	mg/kg	08.29.18 08:15	
Toluene	<0.00200	0.0998	0.103	103	0.0902	90	70-130	13	35	mg/kg	08.29.18 08:15	
Ethylbenzene	<0.00200	0.0998	0.117	117	0.103	103	70-130	13	35	mg/kg	08.29.18 08:15	
m,p-Xylenes	<0.00399	0.200	0.224	112	0.197	98	70-130	13	35	mg/kg	08.29.18 08:15	
o-Xylene	<0.00200	0.0998	0.103	103	0.0906	91	70-130	13	35	mg/kg	08.29.18 08:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		97		95		70-130	%	08.29.18 08:15
4-Bromofluorobenzene	95		96		92		70-130	%	08.29.18 08:15

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061313

Parent Sample Id: 596319-008

Matrix: Soil

MS Sample Id: 596319-008 S

Prep Method: SW5030B

Date Prep: 08.25.18

MSD Sample Id: 596319-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0734	73	0.0633	63	70-130	15	35	mg/kg	08.26.18 03:04	X
Toluene	<0.00202	0.101	0.0649	64	0.0571	57	70-130	13	35	mg/kg	08.26.18 03:04	X
Ethylbenzene	<0.00202	0.101	0.0672	67	0.0608	61	70-130	10	35	mg/kg	08.26.18 03:04	X
m,p-Xylenes	<0.00403	0.202	0.148	73	0.131	66	70-130	12	35	mg/kg	08.26.18 03:04	X
o-Xylene	<0.00202	0.101	0.0689	68	0.0592	59	70-130	15	35	mg/kg	08.26.18 03:04	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		98		70-130	%	08.26.18 03:04
4-Bromofluorobenzene	101		124		70-130	%	08.26.18 03:04

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061437

Parent Sample Id: 596789-001

Matrix: Soil

MS Sample Id: 596789-001 S

Prep Method: SW5030B

Date Prep: 08.28.18

MSD Sample Id: 596789-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0530	53	0.0585	59	70-130	10	35	mg/kg	08.28.18 09:26	X
Toluene	<0.00200	0.0998	0.0511	51	0.0558	56	70-130	9	35	mg/kg	08.28.18 09:26	X
Ethylbenzene	<0.00200	0.0998	0.0580	58	0.0633	63	70-130	9	35	mg/kg	08.28.18 09:26	X
m,p-Xylenes	<0.00399	0.200	0.112	56	0.122	61	70-130	9	35	mg/kg	08.28.18 09:26	X
o-Xylene	<0.00200	0.0998	0.0516	52	0.0571	57	70-130	10	35	mg/kg	08.28.18 09:26	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		90		70-130	%	08.28.18 09:26
4-Bromofluorobenzene	90		90		70-130	%	08.28.18 09:26

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

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

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

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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061634

Parent Sample Id: 596847-001

Matrix: Soil

MS Sample Id: 596847-001 S

Prep Method: SW5030B

Date Prep: 08.29.18

MSD Sample Id: 596847-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0278	28	0.0346	34	70-130	22	35	mg/kg	08.29.18 08:56	X
Toluene	0.0129	0.100	0.0164	4	0.0608	47	70-130	115	35	mg/kg	08.29.18 08:56	XF
Ethylbenzene	0.00535	0.100	0.0118	6	0.0186	13	70-130	45	35	mg/kg	08.29.18 08:56	XF
m,p-Xylenes	0.0247	0.201	0.0299	3	0.0495	12	70-130	49	35	mg/kg	08.29.18 08:56	XF
o-Xylene	0.00639	0.100	0.0127	6	0.0133	7	70-130	5	35	mg/kg	08.29.18 08:56	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		90		70-130	%	08.29.18 08:56
4-Bromofluorobenzene	128		122		70-130	%	08.29.18 08:56

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



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5946788

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes											
Company Name / Branch: LT Environmental, Inc. - Permian Office		Project Name/Number: PLU Delaware C SWD															
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705		Project Location: Carlsbad, NM															
Email: Abaker@ltenv.com Project Contact: Adrian Baker Samplers Name: Joseph S. Hernandez		Phone No.: (432) 704-5178		Invoice To: XTO Energy - Kyle Litrell													
		PO Number:															
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	Notes		
1	BH14	3'	8/21/18	0920	S	1									X	BTEX EPA 8020	
2	BH15	2'	8/21/18	0945	S	1									X	TPH EPA 8015	
3	BH16	2'	8/21/18	1130	S	1									X	Chloride 300.1	
4	SS5A	6"	8/21/18	1110	S	1									X		
5	SS6A	6"	8/21/18	1115	S	1									X		
6	SS7A	6"	8/21/18	1120	S	1									X		
7	SS8A	6"	8/21/18	1125	S	1									X		
8	SS9A	6"	8/21/18	1130	S	1									X		
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Turnaround Time (Business days)																	
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<input type="checkbox"/> 2 Day EMERGENCY		<input type="checkbox"/> Contract TAT															
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TAT Starts Day received by Lab, if received by 5:00 pm																	
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Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:			
5				5				4				4					
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5				5				4				4					
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:			
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Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:			
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Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:			
5				5				4				4					
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:			
5				5				4				4					
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:			
5				5				4				4					
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:			
5				5				4				4					
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:			
5				5				4				4					
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:			
5				5				4				4					
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:			
5				5				4				4					
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Relinquished By:		Date Time:			
5				5													



ORIGIN ID:MAFA (806) 794-1296 XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US		SHIP DATE: 22AUG18 ACTWGT: 30.00 LB CAD: 101813706IN/ET4040 DIMS: 19x15x13 IN BILL RECIPIENT
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (806) 794-1296 REF:		
PO: DEPT:		
TRACK# 7730 4137 4152 0201		
THU - 23 AUG 3:00P STANDARD OVERNIGHT		
41 MAFA TX-US LBB 79701		



J182118061501en

552J113309/DCA5

**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

**Warning:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on [fedex.com](http://fedex.com). FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.





## Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08/23/2018 11:00:00 AM

Work Order #: 596788

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	2.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 08/23/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/23/2018

# Analytical Report 596789

for  
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU Delaware C SWD

10-SEP-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

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

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



10-SEP-18

Project Manager: **Adrian Baker**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **596789**

**PLU Delaware C SWD**

Project Address: Carlsbad, NM

**Adrian Baker:**

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) 596789. 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. 596789 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

**Jessica Kramer**

Project Assistant

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

*Certified and approved by numerous States and Agencies.*

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

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

**Sample Cross Reference 596789****LT Environmental, Inc., Arvada, CO**

PLU Delaware C SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH08	S	08-20-18 12:00	2 ft	596789-001
BH09	S	08-20-18 13:25	2 ft	596789-002
BH10	S	08-20-18 13:40	2 ft	596789-003
SS08	S	08-20-18 15:25	0.5 ft	596789-004



## CASE NARRATIVE

*Client Name: LT Environmental, Inc.*

*Project Name: PLU Delaware C SWD*

Project ID:  
Work Order Number(s): 596789

Report Date: 10-SEP-18  
Date Received: 08/23/2018

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**Sample receipt non conformances and comments:**

PER CLIENTS EMAIL, CORRECTED SAMPLE 004 NAME FROM SS1A TO SS08 JKR 09/10/18  
NEW VERSION GENERATED

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3061437 BTEX by EPA 8021B

Lab Sample ID 596789-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 596789-001.

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

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

Batch: LBA-3061634 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 596789

LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C SWD

**Project Id:**

**Contact:** Adrian Baker

**Project Location:** Carlsbad, NM

**Date Received in Lab:** Thu Aug-23-18 11:00 am

**Report Date:** 10-SEP-18

**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	596789-001	596789-002	596789-003	596789-004		
	<i>Field Id:</i>	BH08	BH09	BH10	SS08		
	<i>Depth:</i>	2- ft	2- ft	2- ft	0.5- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Aug-20-18 12:00	Aug-20-18 13:25	Aug-20-18 13:40	Aug-20-18 15:25		
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Aug-28-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00		
	<i>Analyzed:</i>	Aug-28-18 10:47	Aug-29-18 13:20	Aug-29-18 14:21	Aug-29-18 14:41		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Toluene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Ethylbenzene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
m,p-Xylenes		<0.00403 0.00403	<0.00404 0.00404	<0.00398 0.00398	<0.00399 0.00399		
o-Xylene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Total Xylenes		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
Total BTEX		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200		
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Aug-28-18 13:15	Aug-28-18 13:15	Aug-28-18 13:15	Aug-28-18 13:15		
	<i>Analyzed:</i>	Aug-28-18 14:41	Aug-28-18 14:47	Aug-28-18 15:08	Aug-28-18 14:14		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		24.1 1.00	<1.00 1.00	3.07 1.00	<1.00 1.00		
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00	Aug-24-18 07:00		
	<i>Analyzed:</i>	Aug-24-18 12:52	Aug-24-18 13:12	Aug-24-18 14:13	Aug-24-18 14:33		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	61.9 15.0		
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<14.9 14.9	<15.0 15.0	61.9 15.0		

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer  
Project Assistant





# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH08**  
Lab Sample Id: 596789-001

Matrix: Soil  
Date Collected: 08.20.18 12.00

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061510

Date Prep: 08.28.18 13.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.1	1.00	mg/kg	08.28.18 14.41		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 12.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 12.52	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 12.52	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 12.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	08.24.18 12.52	
o-Terphenyl	84-15-1	94	%	70-135	08.24.18 12.52	



# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH08**  
Lab Sample Id: 596789-001

Matrix: Soil  
Date Collected: 08.20.18 12.00

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.28.18 08.00

Basis: Wet Weight

Seq Number: 3061437

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.28.18 10.47	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.28.18 10.47	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.28.18 10.47	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	08.28.18 10.47	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.28.18 10.47	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.28.18 10.47	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.28.18 10.47	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	94	%	70-130	08.28.18 10.47		
4-Bromofluorobenzene	460-00-4	92	%	70-130	08.28.18 10.47		



# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH09**  
Lab Sample Id: 596789-002

Matrix: Soil  
Date Collected: 08.20.18 13.25

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061510

Date Prep: 08.28.18 13.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<1.00	1.00	mg/kg	08.28.18 14.47	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.24.18 13.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.24.18 13.12	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.24.18 13.12	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.24.18 13.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.24.18 13.12	
o-Terphenyl	84-15-1	86	%	70-135	08.24.18 13.12	



# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH09**  
Lab Sample Id: 596789-002

Matrix: Soil  
Date Collected: 08.20.18 13.25

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.29.18 13.20	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.29.18 13.20	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.29.18 13.20	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	08.29.18 13.20	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.29.18 13.20	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.29.18 13.20	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.29.18 13.20	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	128	%	70-130	08.29.18 13.20		
1,4-Difluorobenzene	540-36-3	98	%	70-130	08.29.18 13.20		



# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH10**  
Lab Sample Id: 596789-003

Matrix: Soil  
Date Collected: 08.20.18 13.40

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061510

Date Prep: 08.28.18 13.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.07	1.00	mg/kg	08.28.18 15.08		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 14.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 14.13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 14.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 14.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	08.24.18 14.13	
o-Terphenyl	84-15-1	89	%	70-135	08.24.18 14.13	



# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH10**  
Lab Sample Id: 596789-003

Matrix: Soil  
Date Collected: 08.20.18 13.40

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.29.18 14.21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.29.18 14.21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.29.18 14.21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.29.18 14.21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.29.18 14.21	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.29.18 14.21	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.29.18 14.21	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	92	%	70-130	08.29.18 14.21		
1,4-Difluorobenzene	540-36-3	93	%	70-130	08.29.18 14.21		





# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **SS08**  
Lab Sample Id: 596789-004

Matrix: Soil  
Date Collected: 08.20.18 15.25

Date Received: 08.23.18 11.00  
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061510

Date Prep: 08.28.18 13.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<1.00	1.00	mg/kg	08.28.18 14.14	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061228

Date Prep: 08.24.18 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 14.33	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>61.9</b>	15.0	mg/kg	08.24.18 14.33		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 14.33	U	1
<b>Total TPH</b>	PHC635	<b>61.9</b>	15.0	mg/kg	08.24.18 14.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	08.24.18 14.33	
o-Terphenyl	84-15-1	94	%	70-135	08.24.18 14.33	



# Certificate of Analytical Results 596789



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS08**  
 Lab Sample Id: 596789-004

Matrix: Soil  
 Date Collected: 08.20.18 15.25

Date Received: 08.23.18 11.00  
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.29.18 14.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.29.18 14.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.29.18 14.41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.29.18 14.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.29.18 14.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.29.18 14.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.29.18 14.41	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	90	%	70-130	08.29.18 14.41		
1,4-Difluorobenzene	540-36-3	95	%	70-130	08.29.18 14.41		



## 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      **SQL** 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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061510

MB Sample Id: 7661279-1-BLK

Matrix: Solid

LCS Sample Id: 7661279-1-BKS

Prep Method: E300P

Date Prep: 08.28.18

LCSD Sample Id: 7661279-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<1.00	50.0	50.4	101	51.0	102	90-110	1	20	mg/kg	08.28.18 14:03	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061510

Parent Sample Id: 596789-004

Matrix: Soil

MS Sample Id: 596789-004 S

Prep Method: E300P

Date Prep: 08.28.18

MSD Sample Id: 596789-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<1.00	50.0	49.4	99	49.5	99	90-110	0	20	mg/kg	08.28.18 14:19	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061510

Parent Sample Id: 596910-005

Matrix: Soil

MS Sample Id: 596910-005 S

Prep Method: E300P

Date Prep: 08.28.18

MSD Sample Id: 596910-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.6	50.0	64.1	97	64.1	97	90-110	0	20	mg/kg	08.28.18 15:41	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3061228

MB Sample Id: 7661126-1-BLK

Matrix: Solid

LCS Sample Id: 7661126-1-BKS

Prep Method: TX1005P

Date Prep: 08.24.18

LCSD Sample Id: 7661126-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	923	92	909	91	70-135	2	20	mg/kg	08.24.18 08:51	
Diesel Range Organics (DRO)	<15.0	1000	958	96	944	94	70-135	1	20	mg/kg	08.24.18 08:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		114		109		70-135	%	08.24.18 08:51
o-Terphenyl	105		100		102		70-135	%	08.24.18 08:51

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

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

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

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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method:** TPH by SW8015 Mod

Seq Number: 3061228

Parent Sample Id: 596788-002

Matrix: Soil

MS Sample Id: 596788-002 S

Prep Method: TX1005P

Date Prep: 08.24.18

MSD Sample Id: 596788-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	1000	100	902	90	70-135	10	20	mg/kg	08.25.18 12:31	
Diesel Range Organics (DRO)	<15.0	997	1050	105	944	94	70-135	11	20	mg/kg	08.25.18 12:31	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		113		70-135	%	08.25.18 12:31
o-Terphenyl	112		99		70-135	%	08.25.18 12:31

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061437

MB Sample Id: 7661266-1-BLK

Matrix: Solid

LCS Sample Id: 7661266-1-BKS

Prep Method: SW5030B

Date Prep: 08.28.18

LCSD Sample Id: 7661266-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.103	102	0.0983	98	70-130	5	35	mg/kg	08.28.18 08:45	
Toluene	<0.00202	0.101	0.0972	96	0.0929	93	70-130	5	35	mg/kg	08.28.18 08:45	
Ethylbenzene	<0.00202	0.101	0.111	110	0.105	105	70-130	6	35	mg/kg	08.28.18 08:45	
m,p-Xylenes	<0.00403	0.202	0.214	106	0.203	101	70-130	5	35	mg/kg	08.28.18 08:45	
o-Xylene	<0.00202	0.101	0.0985	98	0.0938	94	70-130	5	35	mg/kg	08.28.18 08:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		93		94		70-130	%	08.28.18 08:45
4-Bromofluorobenzene	94		93		92		70-130	%	08.28.18 08:45

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061634

MB Sample Id: 7661378-1-BLK

Matrix: Solid

LCS Sample Id: 7661378-1-BKS

Prep Method: SW5030B

Date Prep: 08.29.18

LCSD Sample Id: 7661378-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.107	107	0.0937	94	70-130	13	35	mg/kg	08.29.18 08:15	
Toluene	<0.00200	0.0998	0.103	103	0.0902	90	70-130	13	35	mg/kg	08.29.18 08:15	
Ethylbenzene	<0.00200	0.0998	0.117	117	0.103	103	70-130	13	35	mg/kg	08.29.18 08:15	
m,p-Xylenes	<0.00399	0.200	0.224	112	0.197	98	70-130	13	35	mg/kg	08.29.18 08:15	
o-Xylene	<0.00200	0.0998	0.103	103	0.0906	91	70-130	13	35	mg/kg	08.29.18 08:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		97		95		70-130	%	08.29.18 08:15
4-Bromofluorobenzene	95		96		92		70-130	%	08.29.18 08:15

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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061437

Parent Sample Id: 596789-001

Matrix: Soil

MS Sample Id: 596789-001 S

Prep Method: SW5030B

Date Prep: 08.28.18

MSD Sample Id: 596789-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0530	53	0.0585	59	70-130	10	35	mg/kg	08.28.18 09:26	X
Toluene	<0.00200	0.0998	0.0511	51	0.0558	56	70-130	9	35	mg/kg	08.28.18 09:26	X
Ethylbenzene	<0.00200	0.0998	0.0580	58	0.0633	63	70-130	9	35	mg/kg	08.28.18 09:26	X
m,p-Xylenes	<0.00399	0.200	0.112	56	0.122	61	70-130	9	35	mg/kg	08.28.18 09:26	X
o-Xylene	<0.00200	0.0998	0.0516	52	0.0571	57	70-130	10	35	mg/kg	08.28.18 09:26	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		90		70-130	%	08.28.18 09:26
4-Bromofluorobenzene	90		90		70-130	%	08.28.18 09:26

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061634

Parent Sample Id: 596847-001

Matrix: Soil

MS Sample Id: 596847-001 S

Prep Method: SW5030B

Date Prep: 08.29.18

MSD Sample Id: 596847-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0278	28	0.0346	34	70-130	22	35	mg/kg	08.29.18 08:56	X
Toluene	0.0129	0.100	0.0164	4	0.0608	47	70-130	115	35	mg/kg	08.29.18 08:56	XF
Ethylbenzene	0.00535	0.100	0.0118	6	0.0186	13	70-130	45	35	mg/kg	08.29.18 08:56	XF
m,p-Xylenes	0.0247	0.201	0.0299	3	0.0495	12	70-130	49	35	mg/kg	08.29.18 08:56	XF
o-Xylene	0.00639	0.100	0.0127	6	0.0133	7	70-130	5	35	mg/kg	08.29.18 08:56	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		90		70-130	%	08.29.18 08:56
4-Bromofluorobenzene	128		122		70-130	%	08.29.18 08:56

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





Setting the Standard since 1990  
 Stafford, Texas (281-240-4200)  
 Dallas Texas (214-902-0300)

# CHAIN OF CUSTODY

Page 1 of 1

San Antonio, Texas (210-509-3334)  
 Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes				
Company Name / Branch: LT Environmental, Inc. - Permian Office				Project Name/Number: PRV Delaware & SWP												
Company Address: 3300 North "A" Street, Building 1, Unit #103, Midland, TX 79705				Project Location: Carlsbad, NM												
Email: Abaker@lency.com (432) 704-5178				Invoice To: XTO Energy - Kyle Little												
Project Contact: Adrian Baker				PO Number:												
Sampler's Name: Joseph S. Hernandez																
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments	
1	BH08	2'	8/22/18	1200	S	1									X	BTEX EPA 8020
2	BH09	2'		1345	S	1									X	TPH EPA 8015
3	BH10	2'		1340	S	1									X	Chloride 300.1
4	SS1A	0.5'		1525	S	1									X	
5																
6																
7																
8																
9																
10																
Turnaround Time (Business days)				Data Deliverable Information				Notes:								
<input type="checkbox"/> Same Day TAT				<input checked="" type="checkbox"/> 5 Day TAT				<input type="checkbox"/> Level II Std QC				<input type="checkbox"/> Level IV (Full Data Pkg / raw data)				
<input type="checkbox"/> Next Day EMERGENCY				<input type="checkbox"/> 7 Day TAT				<input type="checkbox"/> Level III Std QC+ Forms				<input type="checkbox"/> TRRP Level IV				
<input type="checkbox"/> 2 Day EMERGENCY				<input type="checkbox"/> Contract TAT				<input type="checkbox"/> Level 3 (CLP Forms)				<input type="checkbox"/> UST / RG-411				
<input type="checkbox"/> 3 Day EMERGENCY								<input type="checkbox"/> TRRP Checklist								
TAT Starts Day received by Lab, if received by 5:00 pm																
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
1		8/22 9:36		1		8/22 9:36		3		8/22 15:30		4		8/23 11:00		
3				3				4				4				
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
5				5				5				5				
FED-EX / UPS: Tracking # 773041374152																
On Ice <input checked="" type="checkbox"/> Cooler Temp. 26°C Thermo. Corr. Factor 0.3°C																

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID:MAFA (806) 794-1296 XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US		SHIP DATE: 22AUG18 ACTWGT: 30.00 LB CAD: 101813706/NET 4040 DIMS: 19x15x13 IN BILL RECIPIENT
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (806) 794-1296 REF: PO: DEPT:		
		
		
552J11/3309/DC/A5		

TRK# 7730 4137 4152 0201 41 MAFA TX-US LBB 79701	THU - 23 AUG 3:00P STANDARD OVERNIGHT
--	--

**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

**Warning:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on [fedex.com](http://fedex.com). FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



Client: LT Environmental, Inc.

Date/ Time Received: 08/23/2018 11:00:00 AM

Work Order #: 596789

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	2.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 08/23/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/23/2018

# Analytical Report 596790

for  
LT Environmental, Inc.

Project Manager: Adrian Baker

PLU Delaware C SWD

10-SEP-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

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

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



10-SEP-18

Project Manager: **Adrian Baker**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **596790**

**PLU Delaware C SWD**

Project Address: Carlsbad, NM

**Adrian Baker:**

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) 596790. 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. 596790 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

**Jessica Kramer**

Project Assistant

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

*Certified and approved by numerous States and Agencies.*

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

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

**Sample Cross Reference 596790****LT Environmental, Inc., Arvada, CO**

PLU Delaware C SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS09	S	08-20-18 15:30	0.5 ft	596790-001
SS10	S	08-20-18 15:35	0.5 ft	596790-002
BH11	S	08-20-18 14:30	2 ft	596790-003
BH12	S	08-20-18 15:20	2 ft	596790-004
SS11	S	08-20-18 15:40	0.5 ft	596790-005
BH 13	S	08-20-18 16:30	12 ft	596790-006





## CASE NARRATIVE

*Client Name: LT Environmental, Inc.*

*Project Name: PLU Delaware C SWD*

Project ID:  
Work Order Number(s): 596790

Report Date: 10-SEP-18  
Date Received: 08/23/2018

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**Sample receipt non conformances and comments:**

PER CLIENTS EMAIL, CORRECTED SAMPLE NAMES FOR SAMPLE 001,002,005 JKR 09/10/18  
NEW VERSION GENERATED

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3061634 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 596790

LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C SWD

Project Id:

Contact: Adrian Baker

Project Location: Carlsbad, NM

Date Received in Lab: Thu Aug-23-18 11:00 am

Report Date: 10-SEP-18

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	596790-001	596790-002	596790-003	596790-004	596790-005	596790-006
	<i>Field Id:</i>	SS09	SS10	BH11	BH12	SS11	BH 13
	<i>Depth:</i>	0.5- ft	0.5- ft	2- ft	2- ft	0.5- ft	12- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Aug-20-18 15:30	Aug-20-18 15:35	Aug-20-18 14:30	Aug-20-18 15:20	Aug-20-18 15:40	Aug-20-18 16:30
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00	Aug-29-18 08:00
	<i>Analyzed:</i>	Aug-29-18 15:02	Aug-29-18 15:23	Aug-29-18 16:05	Aug-29-18 15:44	Aug-29-18 16:27	Aug-29-18 16:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
m,p-Xylenes		<0.00401 0.00401	<0.00403 0.00403	<0.00398 0.00398	<0.00398 0.00398	<0.00402 0.00402	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Aug-24-18 13:00	Aug-24-18 13:00	Aug-24-18 13:00	Aug-24-18 13:00	Aug-24-18 13:00	Aug-24-18 13:00
	<i>Analyzed:</i>	Aug-24-18 14:38	Aug-24-18 14:55	Aug-24-18 15:00	Aug-24-18 15:06	Aug-24-18 15:38	Aug-24-18 15:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		6.32 4.99	<4.99 4.99	147 4.99	500 5.00	64.4 4.96	90.0 4.95
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Aug-23-18 15:00	Aug-23-18 15:00	Aug-23-18 15:00	Aug-23-18 15:00	Aug-23-18 15:00	Aug-23-18 15:00
	<i>Analyzed:</i>	Aug-24-18 01:31	Aug-24-18 01:51	Aug-24-18 02:11	Aug-24-18 02:31	Aug-24-18 02:50	Aug-24-18 03:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Jessica Kramer  
Project Assistant



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS09**  
Lab Sample Id: 596790-001

Matrix: Soil  
Date Collected: 08.20.18 15.30

Date Received: 08.23.18 11.00  
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.32	4.99	mg/kg	08.24.18 14.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 01.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 01.31	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 01.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 01.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	08.24.18 01.31	
o-Terphenyl	84-15-1	103	%	70-135	08.24.18 01.31	



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS09**  
 Lab Sample Id: 596790-001

Matrix: Soil  
 Date Collected: 08.20.18 15.30

Date Received: 08.23.18 11.00  
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.29.18 15.02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.29.18 15.02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.29.18 15.02	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.29.18 15.02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.29.18 15.02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.29.18 15.02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.29.18 15.02	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	91	%	70-130	08.29.18 15.02		
4-Bromofluorobenzene	460-00-4	92	%	70-130	08.29.18 15.02		



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS10**  
Lab Sample Id: 596790-002

Matrix: Soil  
Date Collected: 08.20.18 15.35

Date Received: 08.23.18 11.00  
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	08.24.18 14.55	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 01.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 01.51	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 01.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 01.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	08.24.18 01.51	
o-Terphenyl	84-15-1	90	%	70-135	08.24.18 01.51	



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS10**  
 Lab Sample Id: 596790-002

Matrix: Soil  
 Date Collected: 08.20.18 15.35

Date Received: 08.23.18 11.00  
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.29.18 15.23	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.29.18 15.23	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.29.18 15.23	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	08.29.18 15.23	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.29.18 15.23	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.29.18 15.23	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.29.18 15.23	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	92	%	70-130	08.29.18 15.23		
1,4-Difluorobenzene	540-36-3	97	%	70-130	08.29.18 15.23		





# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH11**  
Lab Sample Id: 596790-003

Matrix: Soil  
Date Collected: 08.20.18 14.30

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	147	4.99	mg/kg	08.24.18 15.00		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 02.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 02.11	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 02.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 02.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.24.18 02.11	
o-Terphenyl	84-15-1	92	%	70-135	08.24.18 02.11	



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH11**  
Lab Sample Id: 596790-003

Matrix: Soil  
Date Collected: 08.20.18 14.30

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.29.18 16.05	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.29.18 16.05	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.29.18 16.05	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.29.18 16.05	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.29.18 16.05	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.29.18 16.05	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.29.18 16.05	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	97	%	70-130	08.29.18 16.05		
4-Bromofluorobenzene	460-00-4	91	%	70-130	08.29.18 16.05		



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH12**  
Lab Sample Id: 596790-004

Matrix: Soil  
Date Collected: 08.20.18 15.20

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	500	5.00	mg/kg	08.24.18 15.06		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 02.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 02.31	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 02.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 02.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.24.18 02.31	
o-Terphenyl	84-15-1	91	%	70-135	08.24.18 02.31	



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH12**  
Lab Sample Id: 596790-004

Matrix: Soil  
Date Collected: 08.20.18 15.20

Date Received: 08.23.18 11.00  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.29.18 15.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.29.18 15.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.29.18 15.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.29.18 15.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.29.18 15.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.29.18 15.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.29.18 15.44	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.29.18 15.44		
4-Bromofluorobenzene	460-00-4	94	%	70-130	08.29.18 15.44		



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS11**  
Lab Sample Id: 596790-005

Matrix: Soil  
Date Collected: 08.20.18 15.40

Date Received: 08.23.18 11.00  
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	64.4	4.96	mg/kg	08.24.18 15.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 02.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 02.50	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 02.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 02.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.24.18 02.50	
o-Terphenyl	84-15-1	93	%	70-135	08.24.18 02.50	



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **SS11**  
 Lab Sample Id: 596790-005

Matrix: Soil  
 Date Collected: 08.20.18 15.40

Date Received: 08.23.18 11.00  
 Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.29.18 16.27	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.29.18 16.27	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.29.18 16.27	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.29.18 16.27	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.29.18 16.27	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.29.18 16.27	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.29.18 16.27	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.29.18 16.27		
4-Bromofluorobenzene	460-00-4	95	%	70-130	08.29.18 16.27		





# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

PLU Delaware C SWD

Sample Id: **BH 13**  
Lab Sample Id: 596790-006

Matrix: Soil  
Date Collected: 08.20.18 16.30

Date Received: 08.23.18 11.00  
Sample Depth: 12 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061240

Date Prep: 08.24.18 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	90.0	4.95	mg/kg	08.24.18 15.54		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061132

Date Prep: 08.23.18 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.24.18 03.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.24.18 03.10	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.24.18 03.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.24.18 03.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	08.24.18 03.10	
o-Terphenyl	84-15-1	94	%	70-135	08.24.18 03.10	



# Certificate of Analytical Results 596790



## LT Environmental, Inc., Arvada, CO

### PLU Delaware C SWD

Sample Id: **BH 13**  
 Lab Sample Id: 596790-006

Matrix: Soil  
 Date Collected: 08.20.18 16.30

Date Received: 08.23.18 11.00  
 Sample Depth: 12 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.29.18 08.00

Basis: Wet Weight

Seq Number: 3061634

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.29.18 16.48	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.29.18 16.48	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.29.18 16.48	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.29.18 16.48	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.29.18 16.48	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.29.18 16.48	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.29.18 16.48	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	96	%	70-130	08.29.18 16.48		
4-Bromofluorobenzene	460-00-4	92	%	70-130	08.29.18 16.48		



## Flagging Criteria



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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061240

MB Sample Id: 7661143-1-BLK

Matrix: Solid

LCS Sample Id: 7661143-1-BKS

Prep Method: E300P

Date Prep: 08.24.18

LCSD Sample Id: 7661143-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	242	97	245	98	90-110	1	20	mg/kg	08.24.18 14:27	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061240

Parent Sample Id: 596790-001

Matrix: Soil

MS Sample Id: 596790-001 S

Prep Method: E300P

Date Prep: 08.24.18

MSD Sample Id: 596790-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.32	250	250	97	250	97	90-110	0	20	mg/kg	08.24.18 14:44	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061240

Parent Sample Id: 596977-003

Matrix: Soil

MS Sample Id: 596977-003 S

Prep Method: E300P

Date Prep: 08.24.18

MSD Sample Id: 596977-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	623	251	835	84	833	84	90-110	0	20	mg/kg	08.24.18 16:27	X

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3061132

MB Sample Id: 7661027-1-BLK

Matrix: Solid

LCS Sample Id: 7661027-1-BKS

Prep Method: TX1005P

Date Prep: 08.23.18

LCSD Sample Id: 7661027-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	967	97	945	95	70-135	2	20	mg/kg	08.23.18 18:59	
Diesel Range Organics (DRO)	<15.0	1000	1000	100	970	97	70-135	3	20	mg/kg	08.23.18 18:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		119		116		70-135	%	08.23.18 18:59
o-Terphenyl	99		99		94		70-135	%	08.23.18 18:59

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



**LT Environmental, Inc.**  
PLU Delaware C SWD

**Analytical Method:** TPH by SW8015 Mod

Seq Number: 3061132

Parent Sample Id: 596598-001

Matrix: Soil

MS Sample Id: 596598-001 S

Prep Method: TX1005P

Date Prep: 08.23.18

MSD Sample Id: 596598-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	27.6	1000	920	89	938	91	70-135	2	20	mg/kg	08.23.18 19:57	
Diesel Range Organics (DRO)	233	1000	1120	89	1140	91	70-135	2	20	mg/kg	08.23.18 19:57	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		123		70-135	%	08.23.18 19:57
o-Terphenyl	106		106		70-135	%	08.23.18 19:57

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061634

MB Sample Id: 7661378-1-BLK

Matrix: Solid

LCS Sample Id: 7661378-1-BKS

Prep Method: SW5030B

Date Prep: 08.29.18

LCSD Sample Id: 7661378-1-BSO

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.107	107	0.0937	94	70-130	13	35	mg/kg	08.29.18 08:15	
Toluene	<0.00200	0.0998	0.103	103	0.0902	90	70-130	13	35	mg/kg	08.29.18 08:15	
Ethylbenzene	<0.00200	0.0998	0.117	117	0.103	103	70-130	13	35	mg/kg	08.29.18 08:15	
m,p-Xylenes	<0.00399	0.200	0.224	112	0.197	98	70-130	13	35	mg/kg	08.29.18 08:15	
o-Xylene	<0.00200	0.0998	0.103	103	0.0906	91	70-130	13	35	mg/kg	08.29.18 08:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		97		95		70-130	%	08.29.18 08:15
4-Bromofluorobenzene	95		96		92		70-130	%	08.29.18 08:15

**Analytical Method:** BTEX by EPA 8021B

Seq Number: 3061634

Parent Sample Id: 596847-001

Matrix: Soil

MS Sample Id: 596847-001 S

Prep Method: SW5030B

Date Prep: 08.29.18

MSD Sample Id: 596847-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0278	28	0.0346	34	70-130	22	35	mg/kg	08.29.18 08:56	X
Toluene	0.0129	0.100	0.0164	4	0.0608	47	70-130	115	35	mg/kg	08.29.18 08:56	XF
Ethylbenzene	0.00535	0.100	0.0118	6	0.0186	13	70-130	45	35	mg/kg	08.29.18 08:56	XF
m,p-Xylenes	0.0247	0.201	0.0299	3	0.0495	12	70-130	49	35	mg/kg	08.29.18 08:56	XF
o-Xylene	0.00639	0.100	0.0127	6	0.0133	7	70-130	5	35	mg/kg	08.29.18 08:56	X

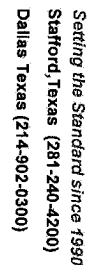
Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		90		70-130	%	08.29.18 08:56
4-Bromofluorobenzene	128		122		70-130	%	08.29.18 08:56

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

Page 1 Of 1

Midland, Texas (432-704-5251)

**Phoenix, Arizona (480-355-0900)**

[www.xenco.com](http://www.xenco.com)

**Xenco Quote #**

**Xenco Job #**

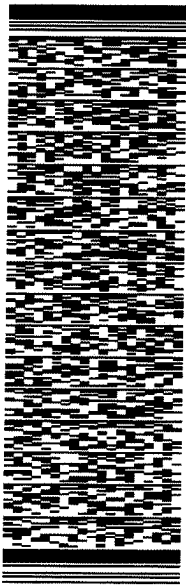
546790

Notice: Notice. Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for at losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



ORIGIN ID:MAFA (806) 794-1296 XENCO 1211 W. FLORIDA AVE MIDLAND, TX 79701 UNITED STATES US		SHIP DATE: 22AUG18 ACT WGT: 30.00 LB CAD: 107813706INET4040 DIMS: 19x15x13 IN
TO XENCO XENCO 1211 W. FLORIDA AVE MIDLAND TX 79701 (806) 794-1296 REF: INV: PO: DEPT:		BILL RECIPIENT

TRK# 7730 4137 4152 0201 THU - 23 AUG 3:00P STANDARD OVERNIGHT 41 MAFA TX-US LBB 79701	 
--	--


552J113309/DCA5

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Client: LT Environmental, Inc.

Date/ Time Received: 08/23/2018 11:00:00 AM

Work Order #: 596790

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	2.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 08/23/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/23/2018

# Analytical Report 641128

for  
LT Environmental, Inc.

**Project Manager: Dan Moir**

**PLU Delaware C**

**012919038**

**30-OCT-19**

Collected By: Client



**1089 N Canal Street  
Carlsbad, NM 88220**

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

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

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

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

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

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

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



30-OCT-19

Project Manager: **Dan Moir**  
**LT Environmental, Inc.**  
4600 W. 60th Avenue  
Arvada, CO 80003

Reference: XENCO Report No(s): **641128**  
**PLU Delaware C**  
Project Address:

**Dan Moir:**

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) 641128. 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. 641128 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

---

**Jessica Kramer**  
Project Assistant

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

*Certified and approved by numerous States and Agencies.*

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

**Sample Cross Reference 641128****LT Environmental, Inc., Arvada, CO**

PLU Delaware C

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
PH17	S	10-24-19 11:00	1 ft	641128-001
PH17A	S	10-24-19 11:10	2 ft	641128-002
PH18	S	10-24-19 11:25	1 ft	641128-003
PH18A	S	10-24-19 11:30	2 ft	641128-004
PH19	S	10-24-19 11:35	1 ft	641128-005
PH19A	S	10-24-19 11:40	2 ft	641128-006
PH20	S	10-24-19 11:50	1 ft	641128-007
PH20A	S	10-24-19 11:55	2 ft	641128-008
PH21	S	10-24-19 12:10	1 ft	641128-009
PH21A	S	10-24-19 12:15	2 ft	641128-010
PH22	S	10-24-19 12:25	1 ft	641128-011
PH22A	S	10-24-19 12:35	2 ft	641128-012
PH23	S	10-24-19 12:45	1 ft	641128-013
PH23A	S	10-24-19 12:50	2 ft	641128-014
PH24	S	10-24-19 13:10	1 ft	641128-015
PH24A	S	10-24-19 13:20	2 ft	641128-016



## CASE NARRATIVE

**Client Name:** LT Environmental, Inc.

**Project Name:** PLU Delaware C

Project ID: 012919038  
Work Order Number(s): 641128

Report Date: 30-OCT-19  
Date Received: 10/25/2019

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3105876 BTEX by EPA 8021B

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



## Certificate of Analysis Summary 641128



LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C

Project Id: 012919038

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-25-19 10:32 am

Report Date: 30-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641128-001	641128-002	641128-003	641128-004	641128-005	641128-006
	<i>Field Id:</i>	PH17	PH17A	PH18	PH18A	PH19	PH19A
	<i>Depth:</i>	1- ft	2- ft	1- ft	2- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-24-19 11:00	Oct-24-19 11:10	Oct-24-19 11:25	Oct-24-19 11:30	Oct-24-19 11:35	Oct-24-19 11:40
<b>BTEX by EPA 8021B SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00
	<i>Analyzed:</i>	Oct-30-19 00:43	Oct-30-19 01:03	Oct-30-19 01:23	Oct-30-19 01:44	Oct-30-19 02:04	Oct-30-19 02:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00402 0.00402	<0.00400 0.00400	<0.00417 0.00417	<0.00397 0.00397	<0.00399 0.00399	<0.00399 0.00399
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00208 0.00208	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
<b>Chloride by EPA 300 SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 11:25	Oct-28-19 11:25	Oct-28-19 11:25	Oct-28-19 11:25	Oct-28-19 11:25	Oct-28-19 13:20
	<i>Analyzed:</i>	Oct-28-19 14:35	Oct-28-19 14:41	Oct-28-19 14:46	Oct-28-19 14:52	Oct-28-19 14:58	Oct-28-19 15:56
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		912 4.97	577 4.97	519 5.04	13.8 4.98	614 5.00	16.3 4.96
<b>TPH by SW8015 Mod SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00
	<i>Analyzed:</i>	Oct-28-19 16:05	Oct-28-19 17:01	Oct-28-19 17:19	Oct-28-19 17:38	Oct-28-19 17:56	Oct-28-19 18:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8
Diesel Range Organics (DRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8
Total GRO-DRO		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8
Total TPH		<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8

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Jessica Kramer  
Project Assistant

## Certificate of Analysis Summary 641128



LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C

Project Id: 012919038

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-25-19 10:32 am

Report Date: 30-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641128-007	641128-008	641128-009	641128-010	641128-011	641128-012
	<i>Field Id:</i>	PH20	PH20A	PH21	PH21A	PH22	PH22A
	<i>Depth:</i>	1- ft	2- ft	1- ft	2- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Oct-24-19 11:50	Oct-24-19 11:55	Oct-24-19 12:10	Oct-24-19 12:15	Oct-24-19 12:25	Oct-24-19 12:35
<b>BTEX by EPA 8021B SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00
	<i>Analyzed:</i>	Oct-30-19 03:42	Oct-30-19 04:02	Oct-30-19 04:22	Oct-30-19 04:43	Oct-30-19 05:03	Oct-30-19 05:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00398 0.00398	<0.00397 0.00397	<0.00403 0.00403	<0.00399 0.00399	<0.00401 0.00401	<0.00396 0.00396
o-Xylene		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
<b>Chloride by EPA 300 SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20
	<i>Analyzed:</i>	Oct-28-19 16:01	Oct-28-19 16:17	Oct-28-19 16:22	Oct-28-19 16:37	Oct-28-19 16:42	Oct-28-19 16:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		579 4.98	1200 5.02	833 4.99	1480 24.9	1060 5.05	931 5.00
<b>TPH by SW8015 Mod SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00
	<i>Analyzed:</i>	Oct-28-19 18:34	Oct-28-19 18:52	Oct-28-19 19:11	Oct-28-19 19:30	Oct-28-19 20:08	Oct-28-19 20:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9
Total TPH		<50.0 50.0	<50.0 50.0	<49.8 49.8	<49.9 49.9	<50.0 50.0	<49.9 49.9

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Jessica Kramer  
Project Assistant

## Certificate of Analysis Summary 641128



LT Environmental, Inc., Arvada, CO

Project Name: PLU Delaware C

Project Id: 012919038

Contact: Dan Moir

Project Location:

Date Received in Lab: Fri Oct-25-19 10:32 am

Report Date: 30-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641128-013	641128-014	641128-015	641128-016		
	<i>Field Id:</i>	PH23	PH23A	PH24	PH24A		
	<i>Depth:</i>	1- ft	2- ft	1- ft	2- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Oct-24-19 12:45	Oct-24-19 12:50	Oct-24-19 13:10	Oct-24-19 13:20		
<b>BTEX by EPA 8021B SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00	Oct-29-19 14:00		
	<i>Analyzed:</i>	Oct-30-19 05:43	Oct-30-19 06:03	Oct-30-19 06:23	Oct-30-19 06:43		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00398 0.00398	<0.00400 0.00400	<0.00399 0.00399	<0.00399 0.00399		
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
<b>Chloride by EPA 300 SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20	Oct-28-19 13:20		
	<i>Analyzed:</i>	Oct-28-19 16:53	Oct-28-19 16:58	Oct-28-19 17:03	Oct-28-19 17:08		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		1260 5.05	1260 5.05	384 4.96	319 5.02		
<b>TPH by SW8015 Mod SUB: T104704400-19-19</b>	<i>Extracted:</i>	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00	Oct-28-19 13:00		
	<i>Analyzed:</i>	Oct-28-19 20:45	Oct-28-19 21:03	Oct-28-19 21:22	Oct-28-19 21:41		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0		
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0		
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0		
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0		
Total TPH		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0		

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Jessica Kramer  
Project Assistant



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH17**  
Lab Sample Id: 641128-001

Matrix: Soil  
Date Collected: 10.24.19 11.00

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3105644

Date Prep: 10.28.19 11.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	912	4.97	mg/kg	10.28.19 14.35		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 16.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 16.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 16.05	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 16.05	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 16.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.28.19 16.05	
o-Terphenyl	84-15-1	98	%	70-135	10.28.19 16.05	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH17**  
Lab Sample Id: 641128-001

Matrix: Soil  
Date Collected: 10.24.19 11.00

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.30.19 00.43	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.30.19 00.43	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.30.19 00.43	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.30.19 00.43	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.30.19 00.43	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.30.19 00.43	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.30.19 00.43	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	110	%	70-130	10.30.19 00.43		
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.30.19 00.43		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH17A**  
Lab Sample Id: 641128-002

Matrix: Soil  
Date Collected: 10.24.19 11.10

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3105644

Date Prep: 10.28.19 11.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	577	4.97	mg/kg	10.28.19 14.41		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.28.19 17.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.28.19 17.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.28.19 17.01	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.28.19 17.01	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.28.19 17.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.28.19 17.01	
o-Terphenyl	84-15-1	98	%	70-135	10.28.19 17.01	





# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH17A**  
Lab Sample Id: 641128-002

Matrix: Soil  
Date Collected: 10.24.19 11.10

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 01.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 01.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 01.03	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.30.19 01.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 01.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 01.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 01.03	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.30.19 01.03		
4-Bromofluorobenzene	460-00-4	106	%	70-130	10.30.19 01.03		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH18**  
Lab Sample Id: 641128-003

Matrix: Soil  
Date Collected: 10.24.19 11.25

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3105644

Date Prep: 10.28.19 11.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	519	5.04	mg/kg	10.28.19 14.46		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 17.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 17.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 17.19	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 17.19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 17.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	10.28.19 17.19	
o-Terphenyl	84-15-1	97	%	70-135	10.28.19 17.19	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH18**  
Lab Sample Id: 641128-003

Matrix: Soil  
Date Collected: 10.24.19 11.25

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Date Prep: 10.29.19 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00208	0.00208	mg/kg	10.30.19 01.23	U	1
Toluene	108-88-3	<0.00208	0.00208	mg/kg	10.30.19 01.23	U	1
Ethylbenzene	100-41-4	<0.00208	0.00208	mg/kg	10.30.19 01.23	U	1
m,p-Xylenes	179601-23-1	<0.00417	0.00417	mg/kg	10.30.19 01.23	U	1
o-Xylene	95-47-6	<0.00208	0.00208	mg/kg	10.30.19 01.23	U	1
Total Xylenes	1330-20-7	<0.00208	0.00208	mg/kg	10.30.19 01.23	U	1
Total BTEX		<0.00208	0.00208	mg/kg	10.30.19 01.23	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.30.19 01.23		
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.30.19 01.23		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH18A**  
Lab Sample Id: 641128-004

Matrix: Soil  
Date Collected: 10.24.19 11.30

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3105644

Date Prep: 10.28.19 11.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.8	4.98	mg/kg	10.28.19 14.52		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 17.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 17.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 17.38	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 17.38	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 17.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	10.28.19 17.38	
o-Terphenyl	84-15-1	100	%	70-135	10.28.19 17.38	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH18A**  
Lab Sample Id: 641128-004

Matrix: Soil  
Date Collected: 10.24.19 11.30

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Date Prep: 10.29.19 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.30.19 01.44	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.30.19 01.44	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.30.19 01.44	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.30.19 01.44	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.30.19 01.44	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.30.19 01.44	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.30.19 01.44	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	94	%	70-130	10.30.19 01.44		
4-Bromofluorobenzene	460-00-4	106	%	70-130	10.30.19 01.44		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH19**  
Lab Sample Id: 641128-005

Matrix: Soil  
Date Collected: 10.24.19 11.35

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3105644

Date Prep: 10.28.19 11.25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>614</b>	5.00	mg/kg	10.28.19 14.58		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 17.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 17.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 17.56	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 17.56	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 17.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	10.28.19 17.56	
o-Terphenyl	84-15-1	96	%	70-135	10.28.19 17.56	





# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH19**  
Lab Sample Id: 641128-005

Matrix: Soil  
Date Collected: 10.24.19 11.35

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 02.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 02.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 02.04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.30.19 02.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 02.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 02.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 02.04	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	116	%	70-130	10.30.19 02.04		
1,4-Difluorobenzene	540-36-3	96	%	70-130	10.30.19 02.04		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH19A**  
Lab Sample Id: 641128-006

Matrix: Soil  
Date Collected: 10.24.19 11.40

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300  
Tech: SPC  
Analyst: SPC  
Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.3	4.96	mg/kg	10.28.19 15.56		1

Analytical Method: TPH by SW8015 Mod  
Tech: DVM  
Analyst: ARM  
Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.28.19 18.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.28.19 18.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.28.19 18.15	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.28.19 18.15	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.28.19 18.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.28.19 18.15	
o-Terphenyl	84-15-1	100	%	70-135	10.28.19 18.15	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH19A**  
Lab Sample Id: 641128-006

Matrix: Soil  
Date Collected: 10.24.19 11.40

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 02.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 02.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 02.24	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.30.19 02.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 02.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 02.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 02.24	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	111	%	70-130	10.30.19 02.24		
1,4-Difluorobenzene	540-36-3	95	%	70-130	10.30.19 02.24		



# Certificate of Analytical Results 641128

LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH20**  
Lab Sample Id: 641128-007

Matrix: Soil  
Date Collected: 10.24.19 11.50

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300  
Tech: SPC  
Analyst: SPC  
Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	579	4.98	mg/kg	10.28.19 16.01		1

Analytical Method: TPH by SW8015 Mod  
Tech: DVM  
Analyst: ARM  
Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 18.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 18.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 18.34	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 18.34	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 18.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.28.19 18.34	
o-Terphenyl	84-15-1	95	%	70-135	10.28.19 18.34	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH20**  
Lab Sample Id: 641128-007

Matrix: Soil  
Date Collected: 10.24.19 11.50

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.30.19 03.42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.30.19 03.42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.30.19 03.42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.30.19 03.42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.30.19 03.42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.30.19 03.42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.30.19 03.42	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.30.19 03.42		
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.30.19 03.42		



# Certificate of Analytical Results 641128

LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH20A**  
Lab Sample Id: 641128-008

Matrix: Soil  
Date Collected: 10.24.19 11.55

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1200	5.02	mg/kg	10.28.19 16.17		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 18.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 18.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 18.52	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 18.52	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 18.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.28.19 18.52	
o-Terphenyl	84-15-1	98	%	70-135	10.28.19 18.52	





# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH20A**  
Lab Sample Id: 641128-008

Matrix: Soil  
Date Collected: 10.24.19 11.55

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Date Prep: 10.29.19 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.30.19 04.02	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.30.19 04.02	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.30.19 04.02	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.30.19 04.02	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.30.19 04.02	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.30.19 04.02	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.30.19 04.02	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	96	%	70-130	10.30.19 04.02		
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.30.19 04.02		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH21**  
Lab Sample Id: 641128-009

Matrix: Soil  
Date Collected: 10.24.19 12.10

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	833	4.99	mg/kg	10.28.19 16.22		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.28.19 19.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.28.19 19.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.28.19 19.11	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.28.19 19.11	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.28.19 19.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.28.19 19.11	
o-Terphenyl	84-15-1	97	%	70-135	10.28.19 19.11	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH21**  
Lab Sample Id: 641128-009

Matrix: Soil  
Date Collected: 10.24.19 12.10

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.30.19 04.22	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.30.19 04.22	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.30.19 04.22	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.30.19 04.22	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.30.19 04.22	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.30.19 04.22	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.30.19 04.22	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.30.19 04.22		
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.30.19 04.22		



# Certificate of Analytical Results 641128

LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH21A**  
Lab Sample Id: 641128-010

Matrix: Soil  
Date Collected: 10.24.19 12.15

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>1480</b>	24.9	mg/kg	10.28.19 16.37		5

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 19.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 19.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 19.30	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 19.30	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 19.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	10.28.19 19.30	
o-Terphenyl	84-15-1	96	%	70-135	10.28.19 19.30	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH21A**  
Lab Sample Id: 641128-010

Matrix: Soil  
Date Collected: 10.24.19 12.15

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 04.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 04.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 04.43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.30.19 04.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 04.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 04.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 04.43	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.30.19 04.43		
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.30.19 04.43		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH22**  
Lab Sample Id: 641128-011

Matrix: Soil  
Date Collected: 10.24.19 12.25

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<b>1060</b>	5.05	mg/kg	10.28.19 16.42		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 20.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 20.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 20.08	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 20.08	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 20.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.28.19 20.08	
o-Terphenyl	84-15-1	96	%	70-135	10.28.19 20.08	





# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH22**  
Lab Sample Id: 641128-011

Matrix: Soil  
Date Collected: 10.24.19 12.25

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 05.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 05.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 05.03	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.30.19 05.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 05.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 05.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 05.03	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.30.19 05.03		
4-Bromofluorobenzene	460-00-4	109	%	70-130	10.30.19 05.03		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH22A**  
Lab Sample Id: 641128-012

Matrix: Soil  
Date Collected: 10.24.19 12.35

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	931	5.00	mg/kg	10.28.19 16.48		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 20.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 20.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 20.26	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 20.26	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 20.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.28.19 20.26	
o-Terphenyl	84-15-1	98	%	70-135	10.28.19 20.26	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH22A**  
Lab Sample Id: 641128-012

Matrix: Soil  
Date Collected: 10.24.19 12.35

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.30.19 05.23	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.30.19 05.23	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.30.19 05.23	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	10.30.19 05.23	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.30.19 05.23	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.30.19 05.23	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.30.19 05.23	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.30.19 05.23		
4-Bromofluorobenzene	460-00-4	104	%	70-130	10.30.19 05.23		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH23**  
Lab Sample Id: 641128-013

Matrix: Soil  
Date Collected: 10.24.19 12.45

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1260	5.05	mg/kg	10.28.19 16.53		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 20.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 20.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 20.45	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 20.45	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 20.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.28.19 20.45	
o-Terphenyl	84-15-1	95	%	70-135	10.28.19 20.45	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH23**  
Lab Sample Id: 641128-013

Matrix: Soil  
Date Collected: 10.24.19 12.45

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.30.19 05.43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.30.19 05.43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.30.19 05.43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.30.19 05.43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.30.19 05.43	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.30.19 05.43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.30.19 05.43	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.30.19 05.43		
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.30.19 05.43		



# Certificate of Analytical Results 641128

LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH23A**  
Lab Sample Id: 641128-014

Matrix: Soil  
Date Collected: 10.24.19 12.50

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300  
Tech: SPC  
Analyst: SPC  
Seq Number: 3105654

Prep Method: E300P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1260	5.05	mg/kg	10.28.19 16.58		1

Analytical Method: TPH by SW8015 Mod  
Tech: DVM  
Analyst: ARM  
Seq Number: 3105660

Prep Method: SW8015P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 21.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 21.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 21.03	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 21.03	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 21.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	10.28.19 21.03	
o-Terphenyl	84-15-1	98	%	70-135	10.28.19 21.03	





# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH23A**  
Lab Sample Id: 641128-014

Matrix: Soil  
Date Collected: 10.24.19 12.50

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 06.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 06.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 06.03	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.30.19 06.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 06.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 06.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 06.03	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	101	%	70-130	10.30.19 06.03		
1,4-Difluorobenzene	540-36-3	95	%	70-130	10.30.19 06.03		



# Certificate of Analytical Results 641128

LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH24**  
Lab Sample Id: 641128-015

Matrix: Soil  
Date Collected: 10.24.19 13.10

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300  
Tech: SPC  
Analyst: SPC  
Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	384	4.96	mg/kg	10.28.19 17.03		1

Analytical Method: TPH by SW8015 Mod  
Tech: DVM  
Analyst: ARM  
Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P  
% Moisture:  
Basis: Wet Weight  
SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.19 21.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.19 21.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.19 21.22	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.19 21.22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.19 21.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.28.19 21.22	
o-Terphenyl	84-15-1	99	%	70-135	10.28.19 21.22	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH24**  
Lab Sample Id: 641128-015

Matrix: Soil  
Date Collected: 10.24.19 13.10

Date Received: 10.25.19 10.32  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: KTL

Analyst: KTL

Seq Number: 3105876

Prep Method: SW5030B

% Moisture:

Date Prep: 10.29.19 14.00

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 06.23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 06.23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 06.23	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.30.19 06.23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 06.23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 06.23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 06.23	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	104	%	70-130	10.30.19 06.23		
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.30.19 06.23		



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH24A**  
Lab Sample Id: 641128-016

Matrix: Soil  
Date Collected: 10.24.19 13.20

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3105654

Date Prep: 10.28.19 13.20

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	319	5.02	mg/kg	10.28.19 17.08		1

Analytical Method: TPH by SW8015 Mod

Tech: DVM

Analyst: ARM

Seq Number: 3105660

Date Prep: 10.28.19 13.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.19 21.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.19 21.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.19 21.41	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.19 21.41	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.19 21.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	10.28.19 21.41	
o-Terphenyl	84-15-1	100	%	70-135	10.28.19 21.41	



# Certificate of Analytical Results 641128

## LT Environmental, Inc., Arvada, CO

PLU Delaware C

Sample Id: **PH24A**  
Lab Sample Id: 641128-016

Matrix: Soil  
Date Collected: 10.24.19 13.20

Date Received: 10.25.19 10.32  
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 10.29.19 14.00

Basis: Wet Weight

Seq Number: 3105876

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.19 06.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.19 06.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.19 06.43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.30.19 06.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.19 06.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.19 06.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.19 06.43	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.30.19 06.43		
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.30.19 06.43		



## 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



**LT Environmental, Inc.**  
PLU Delaware C

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105644

MB Sample Id: 7688995-1-BLK

Matrix: Solid

LCS Sample Id: 7688995-1-BKS

Prep Method: E300P

Date Prep: 10.28.19

LCSD Sample Id: 7688995-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	243	97	245	98	90-110	1	20	mg/kg	10.28.19 12:09	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105644

MB Sample Id: 7689018-1-BLK

Matrix: Solid

LCS Sample Id: 7689018-1-BKS

Prep Method: E300P

Date Prep: 10.28.19

LCSD Sample Id: 7689018-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	263	105	262	105	90-110	0	20	mg/kg	10.28.19 14:39	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105644

Parent Sample Id: 640979-091

Matrix: Soil

MS Sample Id: 640979-091 S

Prep Method: E300P

Date Prep: 10.28.19

MSD Sample Id: 640979-091 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.0	249	255	96	261	99	90-110	2	20	mg/kg	10.28.19 12:27	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105644

Parent Sample Id: 641117-008

Matrix: Soil

MS Sample Id: 641117-008 S

Prep Method: E300P

Date Prep: 10.28.19

MSD Sample Id: 641117-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1140	199	1320	90	1330	95	90-110	1	20	mg/kg	10.28.19 13:48	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105644

Parent Sample Id: 641128-007

Matrix: Soil

MS Sample Id: 641128-007 S

Prep Method: E300P

Date Prep: 10.28.19

MSD Sample Id: 641128-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	579	249	803	90	806	91	90-110	0	20	mg/kg	10.28.19 16:07	

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





**LT Environmental, Inc.**  
PLU Delaware C

**Analytical Method: Chloride by EPA 300**

Seq Number: 3105654

Parent Sample Id: 641200-021

Matrix: Soil

MS Sample Id: 641200-021 S

Prep Method: E300P

Date Prep: 10.28.19

MSD Sample Id: 641200-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	218	250	479	104	471	101	90-110	2	20	mg/kg	10.28.19 14:55	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3105660

MB Sample Id: 7689072-1-BLK

Matrix: Solid

LCS Sample Id: 7689072-1-BKS

Prep Method: SW8015P

Date Prep: 10.28.19

LCSD Sample Id: 7689072-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1130	113	1110	111	70-135	2	20	mg/kg	10.28.19 15:27	
Diesel Range Organics (DRO)	<15.0	1000	1080	108	1060	106	70-135	2	20	mg/kg	10.28.19 15:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		129		124		70-135	%	10.28.19 15:27
o-Terphenyl	105		115		111		70-135	%	10.28.19 15:27

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3105660

Matrix: Solid

MB Sample Id: 7689072-1-BLK

Prep Method: SW8015P

Date Prep: 10.28.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.28.19 15:08	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3105660

Matrix: Soil

Parent Sample Id: 641128-001

MS Sample Id: 641128-001 S

Prep Method: SW8015P

Date Prep: 10.28.19

MSD Sample Id: 641128-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	1030	103	1050	105	70-135	2	20	mg/kg	10.28.19 16:23	
Diesel Range Organics (DRO)	<15.0	999	986	99	1000	100	70-135	1	20	mg/kg	10.28.19 16:23	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		123		70-135	%	10.28.19 16:23
o-Terphenyl	105		104		70-135	%	10.28.19 16:23

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

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

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

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



**LT Environmental, Inc.**  
PLU Delaware C

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3105876

MB Sample Id: 7689147-1-BLK

Matrix: Solid

LCS Sample Id: 7689147-1-BKS

Prep Method: SW5030B

Date Prep: 10.29.19

LCSD Sample Id: 7689147-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.103	103	0.112	112	70-130	8	35	mg/kg	10.29.19 21:23	
Toluene	<0.00200	0.100	0.0973	97	0.108	108	70-130	10	35	mg/kg	10.29.19 21:23	
Ethylbenzene	<0.00200	0.100	0.0992	99	0.112	112	70-130	12	35	mg/kg	10.29.19 21:23	
m,p-Xylenes	<0.00400	0.200	0.203	102	0.230	115	70-130	12	35	mg/kg	10.29.19 21:23	
o-Xylene	<0.00200	0.100	0.101	101	0.117	117	70-130	15	35	mg/kg	10.29.19 21:23	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		97		99		70-130	%	10.29.19 21:23
4-Bromofluorobenzene	98		104		115		70-130	%	10.29.19 21:23

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3105876

Parent Sample Id: 640977-001

Matrix: Soil

MS Sample Id: 640977-001 S

Prep Method: SW5030B

Date Prep: 10.29.19

MSD Sample Id: 640977-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0878	88	0.0893	90	70-130	2	35	mg/kg	10.29.19 22:03	
Toluene	<0.00200	0.100	0.0847	85	0.0852	86	70-130	1	35	mg/kg	10.29.19 22:03	
Ethylbenzene	<0.00200	0.100	0.0863	86	0.0860	87	70-130	0	35	mg/kg	10.29.19 22:03	
m,p-Xylenes	<0.00401	0.200	0.176	88	0.175	88	70-130	1	35	mg/kg	10.29.19 22:03	
o-Xylene	<0.00200	0.100	0.0881	88	0.0874	88	70-130	1	35	mg/kg	10.29.19 22:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		100		70-130	%	10.29.19 22:03
4-Bromofluorobenzene	111		108		70-130	%	10.29.19 22:03

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





## Chain of Custody

Work Order No: 1641128

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 508-3334  
Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

www.xenco.com Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slg@lternv.com, dmoir@lternv.com

Project Name:	210 Spence C	Turn Around	
Project Number:	012118038	Routine	<input checked="" type="checkbox"/>
P.O. Number:		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

Program: UST/PST	<input type="checkbox"/> PRP	<input type="checkbox"/> Brownfields	<input type="checkbox"/> RRC	<input type="checkbox"/> Superfund
State of Project:				
Reporting Level II	<input type="checkbox"/> Level III	<input type="checkbox"/> ST/UST	<input type="checkbox"/> RRP	<input type="checkbox"/> Level IV
Deliverables: EDD	<input type="checkbox"/> ADAPT	<input type="checkbox"/> Other:		

Temperature (°C):	0.2	Temp Blank:	<input checked="" type="checkbox"/> Yes	No	Wet Ice:	<input checked="" type="checkbox"/> Yes	No
Received In tact:	Yes	Thermometer ID	T-M-007				
Cooler Custody Seals:	Yes	Correction Factor:	-0.2				
Sample Custody Seals:	Yes	Total Containers:	14				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST											Work Order Notes
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)								
PH17	S	10-24-19	1100	1	1	X	X	X								
PH17A	S	10-24-19	1110	2	1	Y	X	Y								
PH18	S	10-24-19	1125	1	1	Y	Y	Y								
PH18A	S	10-24-19	1130	2	1	X	X	Y								
PH19	S	10-24-19	1135	1	1	X	Y									
PH19A	S	10-24-19	1140	2	1	X	X	X								
PH20	S	10-24-19	1150	1	1	X	X	X								
PH20A	S	10-24-19	1155	2	1	X	X	X								
PH21	S	10-24-19	1210	1	1	Y	X	X								
PH21A	S	10-24-19	1215	2	1	X	X	X								

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions to Xenco. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
10/25/19 09:55 AM	10/25/19 10:30	4	10/25/19 10:30	6	





Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 382-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

# Chain of Custody

Work Order No: 641128

www.xenco.com Page 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slc@ltenv.com, dmoir@ltenv.com

Project Name:	PLU plavore c	Turn Around	
Project Number:	012918038	Route	<input checked="" type="checkbox"/>
P.O. Number:		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

Temperature (°C):		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Received intact:	Yes	No					
Cooler Custody Seals:	Yes	No	N/A		Correction Factor:		
Sample Custody Seals:	Yes	No	N/A		Total Containers:		

SAMPLE RECEIPT			ANALYSIS REQUEST			Work Order Notes	
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers		
PH22	S	10-24-14	12:25	1	TPH (EPA 8015)		
PH22A	S	10-24-14	12:35	2	BTEX (EPA 0-8021)		
PH23	S	10-24-14	12:45	1	Chloride (EPA 300.0)		
PH23A	S	10-24-14	12:50	2			
PH24	S	10-24-14	1:30	1			
PH24A	S	10-24-14	1:32	2			

Total 200.7 / 6010 200.8 / 6020:													
Circle Method(s) and Metal(s) to be analyzed													
8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn													
TCCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U													
1631 / 245.1 / 7470 / 7471 : Hg													
Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.													
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time								
<i>[Signature]</i>	<i>[Signature]</i>	10/25/14 09:55 AM	<i>[Signature]</i>	<i>[Signature]</i>	10/25/14 10:30								





## Inter-Office Shipment

Page 1 of 3

IOS Number **50900**

Date/Time: 10/25/19 15:50

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 776821232900

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
641128-001	S	PH17	10/24/19 11:00	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-001	S	PH17	10/24/19 11:00	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-001	S	PH17	10/24/19 11:00	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-002	S	PH17A	10/24/19 11:10	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-002	S	PH17A	10/24/19 11:10	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-002	S	PH17A	10/24/19 11:10	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-003	S	PH18	10/24/19 11:25	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-003	S	PH18	10/24/19 11:25	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-003	S	PH18	10/24/19 11:25	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-004	S	PH18A	10/24/19 11:30	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-004	S	PH18A	10/24/19 11:30	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-004	S	PH18A	10/24/19 11:30	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-005	S	PH19	10/24/19 11:35	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-005	S	PH19	10/24/19 11:35	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-005	S	PH19	10/24/19 11:35	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-006	S	PH19A	10/24/19 11:40	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-006	S	PH19A	10/24/19 11:40	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-006	S	PH19A	10/24/19 11:40	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-007	S	PH20	10/24/19 11:50	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-007	S	PH20	10/24/19 11:50	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-007	S	PH20	10/24/19 11:50	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-008	S	PH20A	10/24/19 11:55	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	
641128-008	S	PH20A	10/24/19 11:55	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-008	S	PH20A	10/24/19 11:55	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-009	S	PH21	10/24/19 12:10	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PF	



## Inter-Office Shipment

Page 2 of 3

IOS Number **50900**

Date/Time: 10/25/19 15:50

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 776821232900

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
641128-009	S	PH21	10/24/19 12:10	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-009	S	PH21	10/24/19 12:10	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-010	S	PH21A	10/24/19 12:15	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-010	S	PH21A	10/24/19 12:15	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PI	
641128-010	S	PH21A	10/24/19 12:15	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-011	S	PH22	10/24/19 12:25	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-011	S	PH22	10/24/19 12:25	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-011	S	PH22	10/24/19 12:25	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PI	
641128-012	S	PH22A	10/24/19 12:35	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-012	S	PH22A	10/24/19 12:35	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PI	
641128-012	S	PH22A	10/24/19 12:35	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-013	S	PH23	10/24/19 12:45	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-013	S	PH23	10/24/19 12:45	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-013	S	PH23	10/24/19 12:45	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PI	
641128-014	S	PH23A	10/24/19 12:50	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-014	S	PH23A	10/24/19 12:50	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PI	
641128-014	S	PH23A	10/24/19 12:50	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-015	S	PH24	10/24/19 13:10	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	
641128-015	S	PH24	10/24/19 13:10	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-015	S	PH24	10/24/19 13:10	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PI	
641128-016	S	PH24A	10/24/19 13:20	SW8015MOD_NM	TPH by SW8015 Mod	10/31/19	11/07/19	JKR	GRO-DRO PHCC10C28 PI	
641128-016	S	PH24A	10/24/19 13:20	SW8021B	BTEX by EPA 8021B	10/31/19	11/07/19	JKR	BR4FBZ BZ BZME EBZ X	
641128-016	S	PH24A	10/24/19 13:20	E300_CL	Chloride by EPA 300	10/31/19	04/21/20	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:

Received By:

Released to Imaging: 12/19/2025 11:04:48 AM



## Inter-Office Shipment

Page 3 of 3

**IOS Number 50900**

Date/Time: 10/25/19 15:50

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 776821232900

E-Mail: jessica.kramer@xenco.com

**Inter Office Shipment or Sample Comments:**

Date Relinquished:

A handwritten signature in black ink, appearing to read 'Elizabeth McClellan', is written over a light gray rectangular background.

Elizabeth McClellan

10/25/2019

Date Received:

A handwritten signature in black ink, appearing to read 'Brianna Teel', is written over a light gray rectangular background.

Cooler Temperature:

Brianna Teel

10/28/2019 07:26

0.4





## XENCO Laboratories

## Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 50900

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 10/25/2019 03:50 PM

Received By: Brianna Teel

Date Received: 10/28/2019 07:26 AM

## Sample Receipt Checklist

## Comments

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

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

## NonConformance:

## Corrective Action Taken:

## Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by : \_\_\_\_\_ Date: \_\_\_\_\_

Checklist reviewed by:

Brianna Teel

Date: 10/28/2019



## Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/25/2019 10:32:00 AM

Work Order #: 641128

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	.2	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6 *Custody Seals Signed and dated?	Yes	
#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	Subbed to Midland
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 10/25/2019

Checklist reviewed by:

Jessica Kramer

Date: 10/28/2019



## APPENDIX B

July 26, 2021  
*Closure Request Addendum*

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WSP USA

3300 North "A" Street  
Building 1, Unit 222  
Midland, Texas 79705  
432.704.5178

July 26, 2021

District II  
New Mexico Oil Conservation Division  
811 South First Street  
Artesia, New Mexico 88210

**RE: Closure Request Addendum  
Poker Lake Unit Delaware C Saltwater Disposal Battery/Delaware C Tank Battery  
Remediation Permit/Incident Numbers 2RP-1205/nJMW1219345739, 2RP-1304/  
nJMW1228428008, 2RP-1305/nJMW1228429248, 2RP-1383/nJMW1231129593, and  
2RP-2264/nHMP1441828179  
Eddy County, New Mexico**

To Whom It May Concern:

WSP USA Inc. (WSP) on behalf of XTO Energy, Inc. (XTO), presents the following addendum to a Closure Request submitted April 10, 2020. This Addendum provides an update to the depth to groundwater determination and vertical delineation activities completed at the Poker Lake Unit (PLU) Delaware C Saltwater Disposal (SWD) Battery/Delaware C Tank Battery (Site) in Unit G, Section 6, Township 24 South, Range 30 East, Eddy County, New Mexico (Figure 1), in response to the denial of the Closure Request by the New Mexico Oil Conservation Division (NMOCD). In the denial, NMOCD expressed concern that the depth to groundwater assessment and vertical delineation may not be sufficient. Based on the additional depth to groundwater determination and delineation activities described below, XTO is requesting no further action (NFA) for Remediation Permit (RP)/Incident Numbers 2RP-1205/nJMW1219345739, 2RP-1304/nJMW1228428008, 2RP-1305/nJMW1228429248, 2RP-1383/nJMW1231129593, and 2RP-2264/nHMP1441828179.

## **BACKGROUND**

On April 10, 2020, WSP submitted a Closure Request to the NMOCD for five historical releases that occurred at the Site between May 30, 2012 and April 21, 2014. A total of 1,095 barrels (bbls) of produced water and 10 bbls of crude oil were released onto the well pad and adjacent pasture. Approximately 20 bbls of produced water were recovered. The former operator reported each release to the NMOCD on a Form C-141. The releases are described in further detail in the original April 10, 2020 Closure Request. The releases were assigned RP Number/Incident Number 2RP-1205/nJMW1219345739, 2RP-1304/nJMW1228428008, 2RP-1305/nJMW1228429248, 2RP-1383/nJMW1231129593, and 2RP-2264/nHMP1441828179.

The Closure Request detailed site characterization according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New



Mexico Administrative Code (NMAC). Based on the site characterization, the following Closure Criteria were applied:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

Site assessment and soil sampling activities were completed at the Site to assess for the presence or absence of impacted soil resulting from the five historical releases of crude oil and/or produced water. Based on the soil sample laboratory analytical results from the site assessment activities, no impacted soil was identified, and no further remediation was required. The historical releases occurred during 2012 and 2014. The former operator indicated on the Form C-141s that excavation activities had occurred, and that additional remediation of impacted soil was being scheduled. The absence of impacted soil identified during the assessment activities implied that unreported remediation/excavation activities had been completed at the Site in the past by the previous operator. Additionally, vegetation in the pasture appeared healthy and consistent with the surrounding vegetation. Closure was requested based on laboratory analytical results for the delineation soil samples indicating benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria.

On February 22, 2021, NMOCD denied the Closure Request for the following reasons:

- *Depth to groundwater needs a better evaluation and suggest a bore hole to 51 feet bgs to verify. Also there needs to be more subsurface soil sampling done at deeper intervals. Over 1000 barrels of produced water was not recovered, and though there was some scraping of surface soils, it has been several years since these multiple releases and OCD needs to be comfortable that the chloride in soils potential has been assessed at possible leaching depths.*

#### **ADDITIONAL DEPTH TO GROUNDWATER ASSESSMENT ACTIVITIES**

In an effort to confirm the depth to groundwater determination, WSP oversaw installation a soil boring within 0.5 miles of the Site utilizing a truck-mounted hollow-stem auger rig. Soil boring C-4526 was drilled to a depth of 105 feet bgs. A WSP geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activities. The Well Record and Log is included in Attachment 1. The location of the borehole is approximately 1,500 feet south of the site and is provided on Figure 1. The borehole was left open for over 72 hours



to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 105 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. Based on the confirmed depth to water greater than 105 feet bgs, the Table 1 Closure Criteria identified in the original Closure Request are applicable and appropriate for protection of groundwater at this Site.

#### **ADDITIONAL DELINEATION ACTIVITIES**

As presented in the original Closure Request, delineation soil samples were collected on the well pad from 11 boreholes (BH01 through BH07 and BH13 through BH16) and 8 potholes (PH17 through PH24) from depths ranging from 1-foot to 14 bgs. The delineation soil sample locations are depicted on Figure 2. Laboratory analytical results indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria in the delineation soil samples. Based on depths up to 14 feet bgs for the delineation samples collected on the well pad and analytical results compliant with the Closure Criteria, no further vertical delineation sampling appeared warranted on the well pad. However, on June 22, 2021, WSP personnel returned to the Site to collect additional vertical delineation samples from the pasture area west of the pad, since previous boreholes were advanced to a maximum depth of 2 feet bgs in the pasture. Five boreholes were advanced via hand auger in the pasture west of the pad at the original BH08 through BH12 borehole locations. Delineation samples BH08A through BH12A were collected from the boreholes from a depth of 4 feet bgs. Soil from the boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the boreholes were logged on lithologic/soil sampling logs, which are included in Attachment 2. The delineation soil sample locations are depicted on Figure 2.

The delineation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0.

Laboratory analytical results for delineation samples BH08A through BH12A, collected in the pasture from a depth of 4 feet bgs, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria. The soil sample analytical results are summarized on Table 1 and the complete laboratory analytical reports are included in Attachment 3.

District II  
Page 4**CLOSURE REQUEST**

Site assessment and soil sampling activities were completed within the release areas on the well pad and adjacent pasture to assess for soil impacts resulting from five historical releases at the Site. Laboratory analytical results for the delineation soil samples collected on the well pad from boreholes BH01 through BH07, BH13 through BH16, and potholes PH17 through PH24, from depths ranging from 1-foot to 14 bgs, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results for the delineation soil samples collected in the adjacent pasture from boreholes BH08 through BH12, from depths ranging from 2 feet to 4 feet bgs, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, laboratory analytical results indicated that chloride concentrations were below 600 mg/kg in the soil samples collected from the top four feet of pasture areas.

Initial response efforts, natural attenuation, and presumed historical excavation of impacted soil have mitigated impacts at this Site. Based on the confirmed depth to water greater than 100 feet bgs and laboratory analytical results below the Closure Criteria in the delineation soil samples, XTO respectfully requests no further action for RP Number/Incident Number 2RP-1205/nJMW1219345739, 2RP-1304/nJMW1228428008, 2RP-1305/nJMW1228429248, 2RP-1383/nJMW1231129593, and 2RP-2264/nHMP1441828179.

If you have any questions or comments, please do not hesitate to contact Ms. Ashley Ager at (970) 385-1096 or Ashley.Ager@wsp.com.

Sincerely,

WSP USA, INC.

A handwritten signature in black ink that reads "Elizabeth Naka".

Elizabeth Naka  
Assistant Consultant

A handwritten signature in black ink that reads "Ashley L. Ager".

Ashley L. Ager, P.G.  
Managing Director, Geologist

cc: Adrian Baker, XTO  
Bureau of Land Management

**Attachments:**

Figure 1 Site Location Map  
Figure 2 Delineation Soil Sample Locations  
Table 1 Soil Sample Analytical Results  
Attachment 1 Well Record and Log

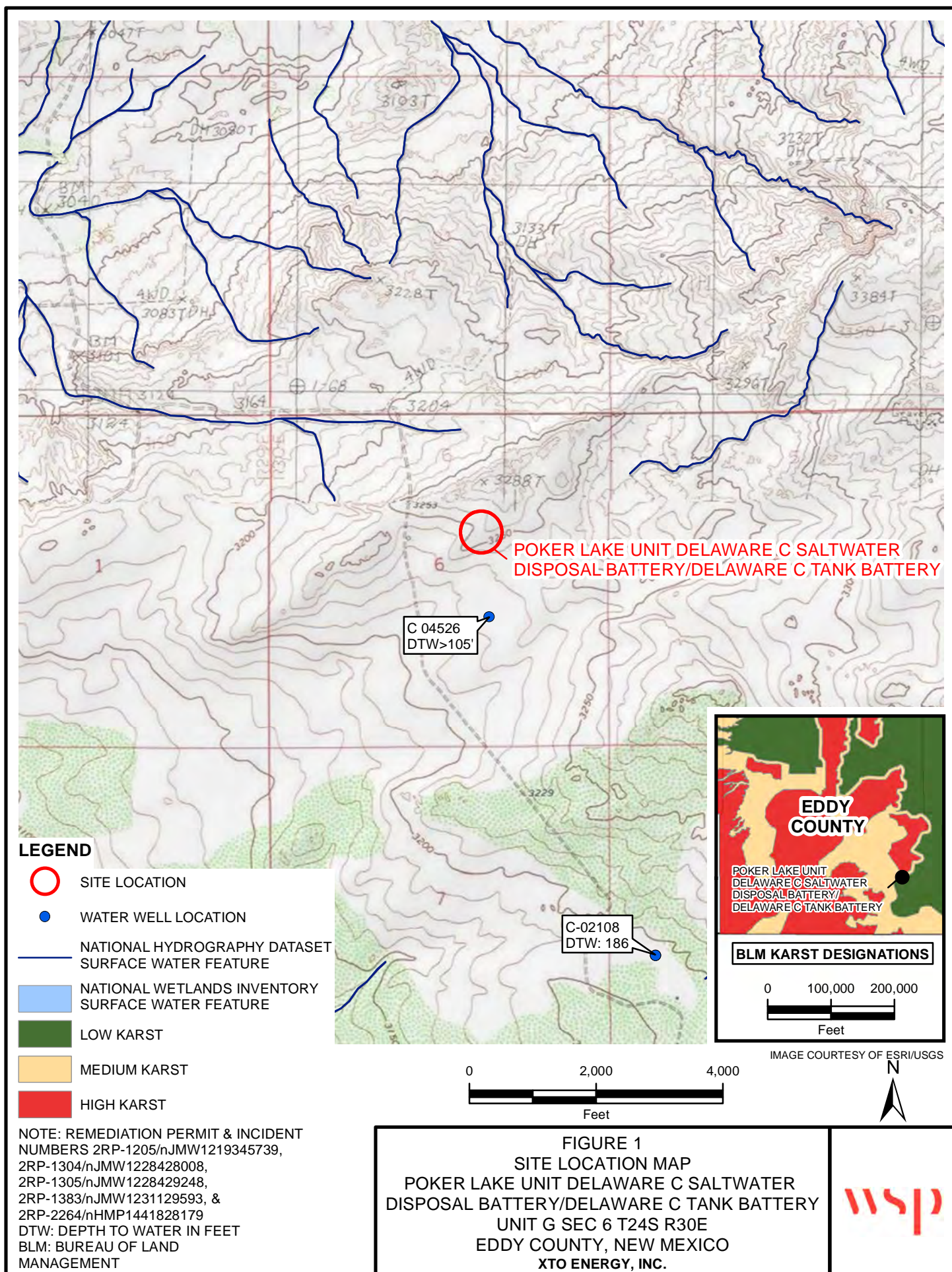




District II  
Page 5

Attachment 2 Lithologic/Soil Sampling Logs  
Attachment 3 Laboratory Analytical Reports

FIGURES



P:\XTO Energy\GIS\MXD\012921022\_PLU DELAWARE C SWD\012921022\_FIG01\_RECEPTOR\_SL\_2021.mxd



**LEGEND**

- ✕ RELEASE LOCATION (2RP-1205)
- ✕ RELEASE LOCATION (2RP-1304)
- ✕ RELEASE LOCATION (2RP-1305)
- ✕ RELEASE LOCATION (2RP-1383)
- ✕ RELEASE LOCATION (2RP-2264)
- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

SAMPLE ID@DEPTH BELOW  
GROUND SURFACE (FEET)

NOTE: REMEDIATION PERMIT & INCIDENT  
NUMBERS 2RP-1205/nJMW1219345739,  
2RP-1304/nJMW1228428008,  
2RP-1305/nJMW1228429248,  
2RP-1383/nJMW1231129593, &  
2RP-2264/nHMP1441828179

**FIGURE 2**  
**DELINEATION SOIL SAMPLE LOCATIONS**  
**POKER LAKE UNIT DELAWARE C SALTWATER**  
**DISPOSAL BATTERY/DELAWARE C TANK BATTERY**  
**UNIT G SEC 6 T24S R30E**  
**EDDY COUNTY, NEW MEXICO**  
**XTO ENERGY, INC.**

**wsp**

TABLES

Table 1

**Soil Analytical Results**  
**PLU Delaware C SWD Battery/Delaware C Tank Battery**  
**Remdiation Permit Numbers and Incident Numbers: 2RP-1205/nJMW1219345739, 2RP-1304/nJMW1228428008,**  
**2RP-1305/nJMW1228429248, 2RP-1383/nJMW1231129593, and 2RP-2264/nHMP1441828179**  
**Eddy County, New Mexico**

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
<b>Delineation Soil Samples</b>										
BH01	08/17/2018	14	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	77.2
BH02	08/17/2018	5.5	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	74.4
BH03	08/17/2018	4	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	51.7
BH04	08/17/2018	9.5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	188
BH05	08/17/2018	6	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	172
BH06	08/17/2018	9	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	71.6
BH07	08/17/2018	12	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	2,550
BH08	08/20/2018	2	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	24.1*
BH08A	06/22/2021	4	<0.00198	0.131	<50.0	<50.0	<50.0	<50.0	<50.0	30.1
BH09	08/20/2018	2	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	<1.00*
BH09A	06/22/2021	4	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	28.0
BH10	08/20/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	3.07*
BH10A	06/22/2021	4	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	989
BH11	08/20/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	147*
BH11A	06/22/2021	4	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	1180
BH12	08/20/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	500*
BH12A	06/22/2021	4	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	1410
BH13	08/20/2018	12	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	90.0
BH14	08/21/2018	3	<0.00199	<0.00199	<15.0	60.7	<15.0	60.7	60.7	317
BH15	08/21/2018	2	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,080
BH16	08/21/2018	2	<0.00201	<0.00201	<14.9	20.6	<14.9	20.6	20.6	453

Table 1

Soil Analytical Results  
 PLU Delaware C SWD Battery/Delaware C Tank Battery  
 Remediation Permit Numbers and Incident Numbers: 2RP-1205/nJMW1219345739, 2RP-1304/nJMW1228428008,  
 2RP-1305/nJMW1228429248, 2RP-1383/nJMW1231129593, and 2RP-2264/nHMP1441828179  
 Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
<b>Delineation Soil Samples</b>										
PH17	10/24/2019	1	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	912
PH17A	10/24/2019	2	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	577
PH18	10/24/2019	1	<0.00208	<0.00208	<50.0	<50.0	<50.0	<50.0	<50.0	519
PH18A	10/24/2019	2	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	13.8
PH19	10/24/2019	1	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	614
PH19A	10/24/2019	2	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	16.3
PH20	10/24/2019	1	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	579
PH20A	10/24/2019	2	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	1,200
PH21	10/24/2019	1	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	833
PH21A	10/24/2019	2	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	1,480
PH22	10/24/2019	1	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,060
PH22A	10/24/2019	2	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	931
PH23	10/24/2019	1	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH23A	10/24/2019	2	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH24	10/24/2019	1	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	384
PH24A	10/24/2019	2	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	319

## Notes:

mg/kg - milligrams per kilograms

BTEX - benzene, toluene, ethylbenzene, and total xylenes

TPH - total petroleum hydrocarbons

DRO - diesel range organics

GRO - gasoline range organics

NMOCD - New Mexico Oil Conservation Division

NMAC - New Mexico Administrative Code

&lt; - indicates result is less than the stated laboratory method practical quantitation limit

NE - Not Established

**BOLD** - indicates results exceed the higher of the background sample result or applicable regulatory standard

\* - indicates sample was collected in the top 4 feet of pasture. Closure criteria for chloride is 600 mg/kg.



ATTACHMENT 1: WELL RECORD AND LOG



2904 W 2nd St.  
Roswell, NM 88201  
voice: 575.624.2420  
fax: 575.624.2421  
[www.atkinseng.com](http://www.atkinseng.com)

06/09/2021

DII-NMOSE  
1900 W 2<sup>nd</sup> Street  
Roswell, NM 88201

*Hand Delivered to the DII Office of the State Engineer*

Re: Well Record C-4526 Pod1

To whom it may concern:

Attached please find a well record and a plugging record, in duplicate, for a one (1) soil borings, C-4526 Pod1.

If you have any questions, please contact me at 575.499.9244 or [lucas@atkinseng.com](mailto:lucas@atkinseng.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Lucas Middleton".

Lucas Middleton

Enclosures: as noted above

07/27/2021 09:10:20Z 28527



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER


[www.ose.state.nm.us](http://www.ose.state.nm.us)

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) POD1 (MW-1)		WELL TAG ID NO. n/a		OSE FILE NO(S). C-4526			
	WELL OWNER NAME(S) XTO Energy (Kyle Littrell)				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 6401 Holiday Hill Dr.				CITY Midland	STATE TX	ZIP 79707	
	WELL LOCATION (FROM GPS)	DEGREES 32°	MINUTES 14'	SECONDS 42.15"	N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND		
		LONGITUDE 103°	55'	6.20"	W	* DATUM REQUIRED: WGS 84		
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE NW NE Sec. 06 T24S R30E								
2. DRILLING & CASING INFORMATION	LICENSE NO. 1249		NAME OF LICENSED DRILLER Jackie D. Atkins			NAME OF WELL DRILLING COMPANY Atkins Engineering Associates, Inc.		
	DRILLING STARTED 05/14/2021	DRILLING ENDED 05/14/2021	DEPTH OF COMPLETED WELL (FT) temporary well material		BORE HOLE DEPTH (FT) 105	DEPTH WATER FIRST ENCOUNTERED (FT) n/a		
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT) n/a		
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES – SPECIFY:							
	DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER – SPECIFY: Hollow Stem Auger							
	DEPTH (feet bgl) FROM TO		BORE HOLE DIAM. (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	0	105	±6.5	Boring- HSA	--	--	--	--
3. ANNULAR MATERIAL	DEPTH (feet bgl) FROM TO		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT		

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO.	POD NO.	TRN NO.
LOCATION	WELL TAG ID NO.	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL	DEPTH (feet bgl)		THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER- BEARING ZONES (gpm)
	FROM	TO				
	0	4	4	SAND, poorly graded, fine-very grained, Reddish-brown, dry	Y    ✓ N	
	4	12	8	CALICHE, poorly-mod. consolidated, tan-off white, dry	Y    ✓ N	
	12	19	7	SAND, poorly graded, fine-very grained, some caliche gravel, Tan ,dry	Y    ✓ N	
	19	24	5	SAND, poorly graded, fine-very grained, some caliche gravel, Light- Brown, dry	Y    ✓ N	
	24	72	48	SAND, poorly graded, fine-very grained, Reddish Brown, moist	Y    ✓ N	
	72	92	20	SAND, poorly graded, fine-very grained, some silt, Reddish Brown, moist	Y    ✓ N	
	92	102	10	SILTY SAND, poorly graded, fine-very grained, Reddish Brown, moist	Y    ✓ N	
	102	105	3	SILTY SAND, poorly graded, fine-very grained, Reddish Brown, dry	Y    ✓ N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
	METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER – SPECIFY:				TOTAL ESTIMATED WELL YIELD (gpm):                      0.00	
	5. TEST; RIG SUPERVISION	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.			
MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring backfilled using drill cuttings from total depth to ten feet below ground surface, then hydrated bentonite chips from ten feet below ground surface to surface. Logs adapted from WSP on-site geologist.						
PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: Shane Eldridge, Carmelo Trevino, Cameron Pruitt						
6. SIGNATURE	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:  <div style="display: flex; justify-content: space-between;"> <div>             SIGNATURE OF DRILLER / PRINT SIGNEE NAME         </div> <div>           Jackie D. Atkins            DATE         </div> </div>					

FOR OSE INTERNAL USE		WR-20 WELL RECORD & LOG (Version 06/30/2017)	
FILE NO.	POD NO.	TRN NO.	
LOCATION	WELL TAG ID NO.	PAGE 2 OF 2	



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: C-4526-POD1

Well owner: XTO ENERGY (Kyle Littrell)

Phone No.: 432.682.8873

Mailing address: 6401 Holiday Hill Dr.

City: Midland

State: Texas

Zip code: 79707

## II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Jackie D. Atkins (Atkins Engineering Associates Inc.)

2) New Mexico Well Driller License No.: 1249 Expiration Date: 04/30/23

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Shane Eldridge, Carmelo Trevino, Cameron Pruitt

4) Date well plugging began: 06/08/2021 Date well plugging concluded: 06/08/2021

5) GPS Well Location: Latitude: 32 deg, 14 min, 42.15 sec  
Longitude: 103 deg, 55 min, 6.20 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 105 ft below ground level (bgl),  
by the following manner: weighted tape

7) Static water level measured at initiation of plugging: n/a ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 04/12/2021

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

001 01 JUL 10 2021 14:17

- For each interval plugged, describe within the following columns:**

Released to Imaging: 12/19/2025 11:04:48 AM






# 2021-06-07\_C-4526\_POD1\_OSE\_Well Record and Log\_155-forsign

Final Audit Report

2021-06-09

Created:	2021-06-09
By:	Lucas Middleton (lucas@atkinseng.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAARqNIK9bZ1aR8TqT_nRoFVSc9LoFFimkY


## "2021-06-07\_C-4526\_POD1\_OSE\_Well Record and Log\_155-for sign" History


-  Document created by Lucas Middleton (lucas@atkinseng.com)  
2021-06-09 - 5:43:46 PM GMT- IP address: 69.21.248.123
-  Document emailed to Jack Atkins (jack@atkinseng.com) for signature  
2021-06-09 - 5:44:36 PM GMT
-  Email viewed by Jack Atkins (jack@atkinseng.com)  
2021-06-09 - 6:44:57 PM GMT- IP address: 64.90.153.232
-  Document e-signed by Jack Atkins (jack@atkinseng.com)  
Signature Date: 2021-06-09 - 6:45:44 PM GMT - Time Source: server- IP address: 64.90.153.232
-  Agreement completed.  
2021-06-09 - 6:45:44 PM GMT


05:07 JUN 10 2021 PMZ/LB





ATTACHMENT 2: LITHOLOGIC/SOIL SAMPLING LOGS

 <b>WSP USA</b> 508 West Stevens Street Carlsbad, New Mexico 88220		BH or PH Name:		Date:				
		BH08		6/22/2021				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:						
		LTE Job Number:		TE012921022				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long: 32.249029, -103.919434		Field Screening: Chloride, PID		Hole Diameter: 3"				
				Total Depth: 4'				
Comments: 40% correction factor included in chloride concentrations.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
						1		
D	1	0.7	N	BH08	2'	2		2': Reddish brown clay with silt
						3		
D	<179.2	0.1	N	BH08A	4'	4	SC	4': Clayey sand, fine grain, poorly graded, poor plasticity, no cohesiveness, dark brown-red, dry, no odor, no stain
								Total Depth @ 4 feet bgs
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 <b>WSP USA</b> 508 West Stevens Street Carlsbad, New Mexico 88220							BH or PH Name:		Date:	
							BH09		6/22/2021	
							Site Name:		PLU Delaware C SWD	
							RP or Incident Number:			
LTE Job Number:							TE012921022			
LITHOLOGIC / SOIL SAMPLING LOG							Logged By LDV/JH		Method: Hand Auger	
Lat/Long: 32.248950, -103.919401				Field Screening: Chloride, PID			Hole Diameter: 3"		Total Depth: 4'	
Comments: 40% correction factor included in chloride concentrations.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks		
						0		2': Reddish brown clay with silt		
						1				
D	1	1.0	N	BH09	2'	2				
						3		4': Clayey sand, fine grain, poorly graded, poor plasticity, no cohesiveness, dark brown-red, dry, no odor, no stain Total Depth @ 4 feet bgs		
						4	SC			
D	<179.2	0.0	N	BH09A	4'	4				
						5				
						6				
						7				
						8				
						9				
						10				
						11				
						12				

 <b>WSP USA</b> 508 West Stevens Street Carlsbad, New Mexico 88220		BH or PH Name:		Date:				
		BH10		6/22/2021				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:						
		LTE Job Number:		TE012921022				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long: 32.248893, -103.919488		Field Screening: Chloride, PID		Hole Diameter: 3"				
				Total Depth: 4'				
Comments: 40% correction factor included in chloride concentrations.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
						1		
D	1	1.9	N	BH10	2'	2		2': Reddish brown clay with silt
						3		
D	896	1.4	N	BH10A	4'	4	SC	4': Clayey sand, fine grain, poorly graded, poor plasticity, no cohesiveness, dark brown-red, dry, no odor, no stain
								Total Depth @ 4 feet bgs
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 <b>WSP USA</b> 508 West Stevens Street Carlsbad, New Mexico 88220		BH or PH Name:		Date:				
		BH11		6/22/2021				
		Site Name:		PLU Delaware C SWD				
		RP or Incident Number:						
		LTE Job Number:		TE012921022				
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long: 32.248588, -103.919394		Field Screening: Chloride, PID		Hole Diameter: 3"				
				Total Depth: 4'				
Comments: 40% correction factor included in chloride concentrations.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
						1		
D	1	1.4	N	BH11	2'	2		2': Reddish brown clay with silt
						3		
D	1,181	0.0	N	BH11A	4'	4	SM	4': Silty sand, medium-fine grain, medium graded, poor plasticity, no cohesiveness, few caliche gravel light brown, dry, no odor
								Total Depth @ 4 feet bgs
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

 <b>WSP USA</b> 508 West Stevens Street Carlsbad, New Mexico 88220							BH or PH Name:		Date:	
							BH12		6/22/2021	
							Site Name:		PLU Delaware C SWD	
							RP or Incident Number:			
							LTE Job Number:		TE012921022	
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							Logged By LDV/JH		Method: Hand Auger	
Lat/Long: 32.248657, -103.919354				Field Screening: Chloride, PID		Hole Diameter: 3"		Total Depth: 4'		
Comments: 40% correction factor included in chloride concentrations.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks		
						0				
						1				
D	2	1.8	N	BH12	2'	2		2': Reddish brown clay with silt		
						3				
D	1,696	0.0	N	BH12A	4'	4	SM	4': Silty sand, medium-fine grain, medium graded, poor plasticity, no cohesiveness, few caliche gravel light brown, dry, no odor		
Total Depth @ 4 feet bgs										
						5				
						6				
						7				
						8				
						9				
						10				
						11				
						12				



ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Xenco, Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-857-1

Client Project/Site: PLU Delaware C SWD

**For:**

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Aimee Cole

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

Authorized for release by:  
6/29/2021 1:53:21 PM

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

#### LINKS

Review your project  
results through

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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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

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

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Laboratory Job ID: 890-857-1

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## Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

## Qualifiers

## GC VOA

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

## GC Semi VOA

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

## HPLC/IC

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

## Glossary

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

Eurofins Xenco, Carlsbad

Case Narrative

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

Job ID: 890-857-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative	
Job Narrative	
890-857-1	

Receipt

The samples were received on 6/23/2021 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.6°C

Receipt Exceptions

The following samples analyzed for method <FRACTION\_METHOD> were received and analyzed from an unpreserved bulk soil jar: BH08A (890-857-1), BH09A (890-857-2), BH11A (890-857-3) and BH12A (890-857-4). BTEX8021

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

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## Client Sample Results

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

Client Sample ID: BH08A

Lab Sample ID: 890-857-1

Date Collected: 06/22/21 14:08

Matrix: Solid

Date Received: 06/23/21 10:15

Sample Depth: - 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		06/24/21 13:04	06/24/21 23:40	1
Toluene	0.0133		0.00198	mg/Kg		06/24/21 13:04	06/24/21 23:40	1
Ethylbenzene	0.0230	F1	0.00198	mg/Kg		06/24/21 13:04	06/24/21 23:40	1
m-Xylene & p-Xylene	0.0648	F1	0.00396	mg/Kg		06/24/21 13:04	06/24/21 23:40	1
o-Xylene	0.0297	F1	0.00198	mg/Kg		06/24/21 13:04	06/24/21 23:40	1
Xylenes, Total	0.0945	F1	0.00396	mg/Kg		06/24/21 13:04	06/24/21 23:40	1
Total BTEX	0.131		0.00396	mg/Kg		06/24/21 13:04	06/24/21 23:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		70 - 130	06/24/21 13:04	06/24/21 23:40	1
1,4-Difluorobenzene (Surr)	110		70 - 130	06/24/21 13:04	06/24/21 23:40	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 17:42	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 17:42	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 17:42	1
Total TPH	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 17:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130	06/24/21 10:16	06/24/21 17:42	1
o-Terphenyl	97		70 - 130	06/24/21 10:16	06/24/21 17:42	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	30.1		5.00	mg/Kg			06/28/21 21:50	1

Client Sample ID: BH09A

Lab Sample ID: 890-857-2

Date Collected: 06/22/21 14:12

Matrix: Solid

Date Received: 06/23/21 10:15

Sample Depth: - 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		06/24/21 13:04	06/25/21 00:00	1
Toluene	<0.00202	U	0.00202	mg/Kg		06/24/21 13:04	06/25/21 00:00	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		06/24/21 13:04	06/25/21 00:00	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		06/24/21 13:04	06/25/21 00:00	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		06/24/21 13:04	06/25/21 00:00	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		06/24/21 13:04	06/25/21 00:00	1
Total BTEX	<0.00403	U	0.00403	mg/Kg		06/24/21 13:04	06/25/21 00:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	131	S1+	70 - 130	06/24/21 13:04	06/25/21 00:00	1
1,4-Difluorobenzene (Surr)	69	S1-	70 - 130	06/24/21 13:04	06/25/21 00:00	1

Eurofins Xenco, Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

## Client Sample ID: BH09A

Lab Sample ID: 890-857-2

Date Collected: 06/22/21 14:12

Matrix: Solid

Date Received: 06/23/21 10:15

Sample Depth: - 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 18:03	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 18:03	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 18:03	1
Total TPH	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 18:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130	06/24/21 10:16	06/24/21 18:03	1
o-Terphenyl	103		70 - 130	06/24/21 10:16	06/24/21 18:03	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	28.0		4.97	mg/Kg			06/28/21 22:04	1

## Client Sample ID: BH11A

Lab Sample ID: 890-857-3

Date Collected: 06/22/21 15:25

Matrix: Solid

Date Received: 06/23/21 10:15

Sample Depth: - 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		06/24/21 13:04	06/25/21 00:21	1
Toluene	<0.00202	U	0.00202	mg/Kg		06/24/21 13:04	06/25/21 00:21	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		06/24/21 13:04	06/25/21 00:21	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		06/24/21 13:04	06/25/21 00:21	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		06/24/21 13:04	06/25/21 00:21	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		06/24/21 13:04	06/25/21 00:21	1
Total BTEX	<0.00403	U	0.00403	mg/Kg		06/24/21 13:04	06/25/21 00:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		70 - 130	06/24/21 13:04	06/25/21 00:21	1
1,4-Difluorobenzene (Surr)	105		70 - 130	06/24/21 13:04	06/25/21 00:21	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		06/24/21 10:16	06/24/21 18:24	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		06/24/21 10:16	06/24/21 18:24	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		06/24/21 10:16	06/24/21 18:24	1
Total TPH	<49.9	U	49.9	mg/Kg		06/24/21 10:16	06/24/21 18:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130	06/24/21 10:16	06/24/21 18:24	1
o-Terphenyl	96		70 - 130	06/24/21 10:16	06/24/21 18:24	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1180		5.01	mg/Kg			06/28/21 22:08	1

Eurofins Xenco, Carlsbad



## Client Sample Results

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

Client Sample ID: BH12A

Lab Sample ID: 890-857-4

Date Collected: 06/22/21 15:06

Matrix: Solid

Date Received: 06/23/21 10:15

Sample Depth: - 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/24/21 13:04	06/25/21 00:41	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/24/21 13:04	06/25/21 00:41	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/24/21 13:04	06/25/21 00:41	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		06/24/21 13:04	06/25/21 00:41	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/24/21 13:04	06/25/21 00:41	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		06/24/21 13:04	06/25/21 00:41	1
Total BTEX	<0.00399	U	0.00399	mg/Kg		06/24/21 13:04	06/25/21 00:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 - 130	06/24/21 13:04	06/25/21 00:41	1
1,4-Difluorobenzene (Surr)	105		70 - 130	06/24/21 13:04	06/25/21 00:41	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 18:45	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 18:45	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 18:45	1
Total TPH	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 18:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	95		70 - 130	06/24/21 10:16	06/24/21 18:45	1
o-Terphenyl	97		70 - 130	06/24/21 10:16	06/24/21 18:45	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1410		5.04	mg/Kg			06/28/21 22:13	1

Eurofins Xenco, Carlsbad

## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-857-1	BH08A	129	110
890-857-1 MS	BH08A	132 S1+	109
890-857-1 MSD	BH08A	122	108
890-857-2	BH09A	131 S1+	69 S1-
890-857-3	BH11A	121	105
890-857-4	BH12A	123	105
LCS 880-4588/1-A	Lab Control Sample	118	108
LCSD 880-4588/2-A	Lab Control Sample Dup	115	110
MB 880-4552/5-A	Method Blank	114	95
MB 880-4588/5-A	Method Blank	102	95

## Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-857-1	BH08A	96	97
890-857-2	BH09A	100	103
890-857-3	BH11A	96	96
890-857-4	BH12A	95	97
LCS 880-4566/2-A	Lab Control Sample	109	106
LCSD 880-4566/3-A	Lab Control Sample Dup	108	103
MB 880-4566/1-A	Method Blank	102	107

## Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.

Job ID: 890-857-1

Project/Site: PLU Delaware C SWD

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

Lab Sample ID: MB 880-4552/5-A

Matrix: Solid

Analysis Batch: 4554

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 4552

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/24/21 08:50	06/24/21 12:30	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/24/21 08:50	06/24/21 12:30	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/24/21 08:50	06/24/21 12:30	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		06/24/21 08:50	06/24/21 12:30	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/24/21 08:50	06/24/21 12:30	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		06/24/21 08:50	06/24/21 12:30	1
Total BTEX	<0.00400	U	0.00400	mg/Kg		06/24/21 08:50	06/24/21 12:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130	06/24/21 08:50	06/24/21 12:30	1
1,4-Difluorobenzene (Surr)	95		70 - 130	06/24/21 08:50	06/24/21 12:30	1

Lab Sample ID: MB 880-4588/5-A

Matrix: Solid

Analysis Batch: 4554

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 4588

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/24/21 13:04	06/24/21 23:18	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/24/21 13:04	06/24/21 23:18	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/24/21 13:04	06/24/21 23:18	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		06/24/21 13:04	06/24/21 23:18	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/24/21 13:04	06/24/21 23:18	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		06/24/21 13:04	06/24/21 23:18	1
Total BTEX	<0.00400	U	0.00400	mg/Kg		06/24/21 13:04	06/24/21 23:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	06/24/21 13:04	06/24/21 23:18	1
1,4-Difluorobenzene (Surr)	95		70 - 130	06/24/21 13:04	06/24/21 23:18	1

Lab Sample ID: LCS 880-4588/1-A

Matrix: Solid

Analysis Batch: 4554

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 4588

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.1100		mg/Kg		110	70 - 130
Toluene	0.100	0.1026		mg/Kg		103	70 - 130
Ethylbenzene	0.100	0.1050		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.2294		mg/Kg		115	70 - 130
o-Xylene	0.100	0.1162		mg/Kg		116	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

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

Lab Sample ID: LCSD 880-4588/2-A

Matrix: Solid

Analysis Batch: 4554

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 4588

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.1108		mg/Kg		111	70 - 130	1	35
Toluene	0.100	0.1029		mg/Kg		103	70 - 130	0	35
Ethylbenzene	0.100	0.1036		mg/Kg		104	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.2239		mg/Kg		112	70 - 130	2	35
o-Xylene	0.100	0.1144		mg/Kg		114	70 - 130	2	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	115		70 - 130
1,4-Difluorobenzene (Surr)	110		70 - 130

Lab Sample ID: 890-857-1 MS

Matrix: Solid

Analysis Batch: 4554

Client Sample ID: BH08A

Prep Type: Total/NA

Prep Batch: 4588

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00198	U	0.0996	0.1036		mg/Kg		103	70 - 130		
Toluene	0.0133		0.0996	0.09853		mg/Kg		86	70 - 130		
Ethylbenzene	0.0230	F1	0.0996	0.1005		mg/Kg		78	70 - 130		
m-Xylene & p-Xylene	0.0648	F1	0.199	0.2137		mg/Kg		75	70 - 130		
o-Xylene	0.0297	F1	0.0996	0.1093		mg/Kg		80	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	132	S1+	70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

Lab Sample ID: 890-857-1 MSD

Matrix: Solid

Analysis Batch: 4554

Client Sample ID: BH08A

Prep Type: Total/NA

Prep Batch: 4588

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00198	U	0.100	0.09464		mg/Kg		94	70 - 130	9	35
Toluene	0.0133		0.100	0.08528		mg/Kg		72	70 - 130	14	35
Ethylbenzene	0.0230	F1	0.100	0.09115	F1	mg/Kg		68	70 - 130	10	35
m-Xylene & p-Xylene	0.0648	F1	0.200	0.1916	F1	mg/Kg		63	70 - 130	11	35
o-Xylene	0.0297	F1	0.100	0.08692	F1	mg/Kg		57	70 - 130	23	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	122		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

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

Lab Sample ID: MB 880-4566/1-A

Matrix: Solid

Analysis Batch: 4568

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 4566

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 12:07	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 12:07	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 12:07	1
Total TPH	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 12:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130	06/24/21 10:16	06/24/21 12:07	1
o-Terphenyl	107		70 - 130	06/24/21 10:16	06/24/21 12:07	1

Lab Sample ID: LCS 880-4566/2-A

Matrix: Solid

Analysis Batch: 4568

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 4566

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1019		mg/Kg		102	70 - 130
Diesel Range Organics (Over C10-C28)	1000	980.2		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	106		70 - 130

Lab Sample ID: LCSD 880-4566/3-A

Matrix: Solid

Analysis Batch: 4568

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 4566

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	969.6		mg/Kg		97	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	1000	963.7		mg/Kg		96	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	108		70 - 130
o-Terphenyl	103		70 - 130

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-4581/1-A

Matrix: Solid

Analysis Batch: 4656

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			06/28/21 21:37	1

Eurofins Xenco, Carlsbad

QC Sample Results

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-4581/2-A						Client Sample ID: Lab Control Sample					
Matrix: Solid						Prep Type: Soluble					
Analysis Batch: 4656											
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			250	242.5		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-4581/3-A						Client Sample ID: Lab Control Sample Dup					
Matrix: Solid						Prep Type: Soluble					
Analysis Batch: 4656											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			252	245.5		mg/Kg		97	90 - 110	1	20

Lab Sample ID: 890-857-1 MS						Client Sample ID: BH08A					
Matrix: Solid						Prep Type: Soluble					
Analysis Batch: 4656											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	30.1		250	304.0		mg/Kg		110	90 - 110		

Lab Sample ID: 890-857-1 MSD						Client Sample ID: BH08A					
Matrix: Solid						Prep Type: Soluble					
Analysis Batch: 4656											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	30.1		250	304.4		mg/Kg		110	90 - 110	0	20

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

## GC VOA

## Prep Batch: 4552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-4552/5-A	Method Blank	Total/NA	Solid	5035	

## Analysis Batch: 4554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-857-1	BH08A	Total/NA	Solid	8021B	4588
890-857-2	BH09A	Total/NA	Solid	8021B	4588
890-857-3	BH11A	Total/NA	Solid	8021B	4588
890-857-4	BH12A	Total/NA	Solid	8021B	4588
MB 880-4552/5-A	Method Blank	Total/NA	Solid	8021B	4552
MB 880-4588/5-A	Method Blank	Total/NA	Solid	8021B	4588
LCS 880-4588/1-A	Lab Control Sample	Total/NA	Solid	8021B	4588
LCSD 880-4588/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	4588
890-857-1 MS	BH08A	Total/NA	Solid	8021B	4588
890-857-1 MSD	BH08A	Total/NA	Solid	8021B	4588

## Prep Batch: 4588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-857-1	BH08A	Total/NA	Solid	5035	
890-857-2	BH09A	Total/NA	Solid	5035	
890-857-3	BH11A	Total/NA	Solid	5035	
890-857-4	BH12A	Total/NA	Solid	5035	
MB 880-4588/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-4588/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-4588/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-857-1 MS	BH08A	Total/NA	Solid	5035	
890-857-1 MSD	BH08A	Total/NA	Solid	5035	

## GC Semi VOA

## Prep Batch: 4566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-857-1	BH08A	Total/NA	Solid	8015NM Prep	
890-857-2	BH09A	Total/NA	Solid	8015NM Prep	
890-857-3	BH11A	Total/NA	Solid	8015NM Prep	
890-857-4	BH12A	Total/NA	Solid	8015NM Prep	
MB 880-4566/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-4566/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-4566/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 4568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-857-1	BH08A	Total/NA	Solid	8015B NM	4566
890-857-2	BH09A	Total/NA	Solid	8015B NM	4566
890-857-3	BH11A	Total/NA	Solid	8015B NM	4566
890-857-4	BH12A	Total/NA	Solid	8015B NM	4566
MB 880-4566/1-A	Method Blank	Total/NA	Solid	8015B NM	4566
LCS 880-4566/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	4566
LCSD 880-4566/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	4566

Eurofins Xenco, Carlsbad



## QC Association Summary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

## HPLC/IC

## Leach Batch: 4581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-857-1	BH08A	Soluble	Solid	DI Leach	
890-857-2	BH09A	Soluble	Solid	DI Leach	
890-857-3	BH11A	Soluble	Solid	DI Leach	
890-857-4	BH12A	Soluble	Solid	DI Leach	
MB 880-4581/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-4581/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-4581/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-857-1 MS	BH08A	Soluble	Solid	DI Leach	
890-857-1 MSD	BH08A	Soluble	Solid	DI Leach	

## Analysis Batch: 4656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-857-1	BH08A	Soluble	Solid	300.0	4581
890-857-2	BH09A	Soluble	Solid	300.0	4581
890-857-3	BH11A	Soluble	Solid	300.0	4581
890-857-4	BH12A	Soluble	Solid	300.0	4581
MB 880-4581/1-A	Method Blank	Soluble	Solid	300.0	4581
LCS 880-4581/2-A	Lab Control Sample	Soluble	Solid	300.0	4581
LCSD 880-4581/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	4581
890-857-1 MS	BH08A	Soluble	Solid	300.0	4581
890-857-1 MSD	BH08A	Soluble	Solid	300.0	4581

## Lab Chronicle

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

Client Sample ID: BH08A

Lab Sample ID: 890-857-1

Date Collected: 06/22/21 14:08

Matrix: Solid

Date Received: 06/23/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4588	06/24/21 13:04	KL	XEN MID
Total/NA	Analysis	8021B		1	4554	06/24/21 23:40	KL	XEN MID
Total/NA	Prep	8015NM Prep			4566	06/24/21 10:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1	4568	06/24/21 17:42	AJ	XEN MID
Soluble	Leach	DI Leach			4581	06/24/21 11:59	CH	XEN MID
Soluble	Analysis	300.0		1	4656	06/28/21 21:50	CH	XEN MID

Client Sample ID: BH09A

Lab Sample ID: 890-857-2

Date Collected: 06/22/21 14:12

Matrix: Solid

Date Received: 06/23/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4588	06/24/21 13:04	KL	XEN MID
Total/NA	Analysis	8021B		1	4554	06/25/21 00:00	KL	XEN MID
Total/NA	Prep	8015NM Prep			4566	06/24/21 10:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1	4568	06/24/21 18:03	AJ	XEN MID
Soluble	Leach	DI Leach			4581	06/24/21 11:59	CH	XEN MID
Soluble	Analysis	300.0		1	4656	06/28/21 22:04	CH	XEN MID

Client Sample ID: BH11A

Lab Sample ID: 890-857-3

Date Collected: 06/22/21 15:25

Matrix: Solid

Date Received: 06/23/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4588	06/24/21 13:04	KL	XEN MID
Total/NA	Analysis	8021B		1	4554	06/25/21 00:21	KL	XEN MID
Total/NA	Prep	8015NM Prep			4566	06/24/21 10:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1	4568	06/24/21 18:24	AJ	XEN MID
Soluble	Leach	DI Leach			4581	06/24/21 11:59	CH	XEN MID
Soluble	Analysis	300.0		1	4656	06/28/21 22:08	CH	XEN MID

Client Sample ID: BH12A

Lab Sample ID: 890-857-4

Date Collected: 06/22/21 15:06

Matrix: Solid

Date Received: 06/23/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4588	06/24/21 13:04	KL	XEN MID
Total/NA	Analysis	8021B		1	4554	06/25/21 00:41	KL	XEN MID
Total/NA	Prep	8015NM Prep			4566	06/24/21 10:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1	4568	06/24/21 18:45	AJ	XEN MID
Soluble	Leach	DI Leach			4581	06/24/21 11:59	CH	XEN MID
Soluble	Analysis	300.0		1	4656	06/28/21 22:13	CH	XEN MID

## Laboratory References:

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

Eurofins Xenco, Carlsbad

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

Laboratory: Eurofins Xenco, Midland

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

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

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

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

## Method Summary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-857-1

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

### Protocol References:

ASTM = ASTM International

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

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

### Laboratory References:

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

Eurofins Xenco, Carlsbad

## Sample Summary

Client: WSP USA Inc.

Job ID: 890-857-1

Project/Site: PLU Delaware C SWD

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-857-1	BH08A	Solid	06/22/21 14:08	06/23/21 10:15	- 4
890-857-2	BH09A	Solid	06/22/21 14:12	06/23/21 10:15	- 4
890-857-3	BH11A	Solid	06/22/21 15:25	06/23/21 10:15	- 4
890-857-4	BH12A	Solid	06/22/21 15:06	06/23/21 10:15	- 4



## Chain of Custody

**Work Order No:**

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3333  
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296  
Phoenix, AZ (602) 392-7550 Atlanta, GA (770) 449-8800 Tampa, FL (813) 888-8888  
Hobbs, NM (575) 392-7550

[www.xenco.com](http://www.xenco.com)

Page 1 of 1

Project Manager:	Aimnee Cole	Bill to: (if different)	Kyle Littell
Company Name:	WSP USA Inc.	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432 236 3849	Email:	luis.delvalle@wsp.com, aimnee.cole@wsp.com

Work Order Comments	
<b>Program:</b> UST/ST <input type="checkbox"/> PRP <input type="checkbox"/> brownfields <input type="checkbox"/> RC <input type="checkbox"/> Superfund <input type="checkbox"/>	
<b>State of Project:</b>	
<b>Reporting Level:</b> I <input type="checkbox"/> Level II <input type="checkbox"/> Level III <input type="checkbox"/> ST/UST <input type="checkbox"/> RRP <input type="checkbox"/> Level IV <input type="checkbox"/>	
<b>Deliverables:</b> EDD <input type="checkbox"/> ADaPT <input type="checkbox"/> Other: _____	

Project Name:	PLU Delaware C SWD	Turn Around
Project Number:	TE012921022	Routine <input checked="" type="checkbox"/>
P.O. Number:	Cost Center: 1080821001	Rush:
Sampler's Name:	Luis Del Val	Due Date:

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	5.8/5.6						
Received Intact:	Yes	No			Thermometer ID	2NM-003	
Cooler Custody Seals:	Yes	No			Correction Factor:		
Sample Custody Seals:	Yes	No			Total Containers:		

[illegible][illegible]





**Total 200.7 / 6010      200.8 / 6020:**

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Li Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 4607723.7747077471.79

Notice: Signature of this documents and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		6/23/21 1008			6-23-21 10:05

Revised: Date 05/14/18 Rev. 2018

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-857-1

SDG Number:

Login Number: 857

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Xenco, Carlsbad

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



## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-857-1

SDG Number:

Login Number: 857

List Number: 2

Creator: Copeland, Tatiana

List Source: Eurofins Xenco, Midland

List Creation: 06/24/21 12:06 PM

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



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Xenco, Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-860-1

Laboratory Sample Delivery Group: TE012921022

Client Project/Site: PLU Delaware C SWD

For:

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Aimee Cole

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

Authorized for release by:  
6/29/2021 7:59:46 PM

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

#### LINKS

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results through  
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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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

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

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Laboratory Job ID: 890-860-1  
SDG: TE012921022

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## Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

## Qualifiers

## GC VOA

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

## GC Semi VOA

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

## HPLC/IC

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

## Glossary

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

## Case Narrative

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

### Job ID: 890-860-1

### Laboratory: Eurofins Xenco, Carlsbad

#### Narrative

#### Job Narrative 890-860-1

#### Comments

No additional comments.

#### Receipt

The sample was received on 6/23/2021 10:15 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.6° C.

#### Receipt Exceptions

The following samples analyzed for method BTEX 8021 were received and analyzed from an unpreserved bulk soil jar: BH01A (890-860-1).

#### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-4688 and analytical batch 880-4689 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

#### GC Semi VOA

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

#### General Chemistry

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

#### Organic Prep

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

#### VOA Prep

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

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

Client Sample ID: BH01A

Lab Sample ID: 890-860-1

Date Collected: 06/22/21 14:40

Matrix: Solid

Date Received: 06/23/21 10:15

Sample Depth: - 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/28/21 11:30	06/28/21 21:28	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/28/21 11:30	06/28/21 21:28	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/28/21 11:30	06/28/21 21:28	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		06/28/21 11:30	06/28/21 21:28	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/28/21 11:30	06/28/21 21:28	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		06/28/21 11:30	06/28/21 21:28	1
Total BTEX	<0.00401	U	0.00401	mg/Kg		06/28/21 11:30	06/28/21 21:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130	06/28/21 11:30	06/28/21 21:28	1
1,4-Difluorobenzene (Surr)	99		70 - 130	06/28/21 11:30	06/28/21 21:28	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 19:06	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 19:06	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 19:06	1
Total TPH	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 19:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130	06/24/21 10:16	06/24/21 19:06	1
o-Terphenyl	89		70 - 130	06/24/21 10:16	06/24/21 19:06	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	989		5.03	mg/Kg			06/29/21 10:22	1

Eurofins Xenco, Carlsbad

## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-860-1	BH01A	117	99
LCS 880-4688/1-A	Lab Control Sample	99	94
LCSD 880-4688/2-A	Lab Control Sample Dup	98	93
MB 880-4688/5-A	Method Blank	111	92
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-860-1	BH01A	89	89
LCS 880-4566/2-A	Lab Control Sample	109	106
LCSD 880-4566/3-A	Lab Control Sample Dup	108	103
MB 880-4566/1-A	Method Blank	102	107
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			



## QC Sample Results

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

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

Lab Sample ID: MB 880-4688/5-A

Matrix: Solid

Analysis Batch: 4689

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 4688

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/28/21 11:30	06/28/21 14:45	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/28/21 11:30	06/28/21 14:45	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/28/21 11:30	06/28/21 14:45	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		06/28/21 11:30	06/28/21 14:45	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/28/21 11:30	06/28/21 14:45	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		06/28/21 11:30	06/28/21 14:45	1
Total BTEX	<0.00400	U	0.00400	mg/Kg		06/28/21 11:30	06/28/21 14:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130	06/28/21 11:30	06/28/21 14:45	1
1,4-Difluorobenzene (Surr)	92		70 - 130	06/28/21 11:30	06/28/21 14:45	1

Lab Sample ID: LCS 880-4688/1-A

Matrix: Solid

Analysis Batch: 4689

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 4688

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09272		mg/Kg		93	70 - 130
Toluene	0.100	0.1075		mg/Kg		108	70 - 130
Ethylbenzene	0.100	0.1133		mg/Kg		113	70 - 130
m-Xylene & p-Xylene	0.200	0.2345		mg/Kg		117	70 - 130
o-Xylene	0.100	0.1139		mg/Kg		114	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: LCSD 880-4688/2-A

Matrix: Solid

Analysis Batch: 4689

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 4688

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.09137		mg/Kg		91	70 - 130	1	35
Toluene	0.100	0.1077		mg/Kg		108	70 - 130	0	35
Ethylbenzene	0.100	0.1124		mg/Kg		112	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.2327		mg/Kg		116	70 - 130	1	35
o-Xylene	0.100	0.1131		mg/Kg		113	70 - 130	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

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

Lab Sample ID: MB 880-4566/1-A

Matrix: Solid

Analysis Batch: 4568

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 4566

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 12:07	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 12:07	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 12:07	1
Total TPH	<50.0	U	50.0	mg/Kg		06/24/21 10:16	06/24/21 12:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130	06/24/21 10:16	06/24/21 12:07	1
o-Terphenyl	107		70 - 130	06/24/21 10:16	06/24/21 12:07	1

Lab Sample ID: LCS 880-4566/2-A

Matrix: Solid

Analysis Batch: 4568

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 4566

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1019		mg/Kg		102	70 - 130
Diesel Range Organics (Over C10-C28)	1000	980.2		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	106		70 - 130

Lab Sample ID: LCSD 880-4566/3-A

Matrix: Solid

Analysis Batch: 4568

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 4566

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	969.6		mg/Kg		97	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	1000	963.7		mg/Kg		96	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	108		70 - 130
o-Terphenyl	103		70 - 130

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-4584/1-A

Matrix: Solid

Analysis Batch: 4716

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			06/29/21 08:59	1

Eurofins Xenco, Carlsbad

QC Sample Results

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-4584/2-A					Client Sample ID: Lab Control Sample				
Matrix: Solid					Prep Type: Soluble				
Analysis Batch: 4716									
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	250	244.1		mg/Kg		98	90 - 110		

Lab Sample ID: LCSD 880-4584/3-A					Client Sample ID: Lab Control Sample Dup				
Matrix: Solid					Prep Type: Soluble				
Analysis Batch: 4716									
Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	244.5		mg/Kg		98	90 - 110	0	20

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

## GC VOA

## Prep Batch: 4688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-860-1	BH01A	Total/NA	Solid	5035	
MB 880-4688/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-4688/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-4688/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

## Analysis Batch: 4689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-860-1	BH01A	Total/NA	Solid	8021B	4688
MB 880-4688/5-A	Method Blank	Total/NA	Solid	8021B	4688
LCS 880-4688/1-A	Lab Control Sample	Total/NA	Solid	8021B	4688
LCSD 880-4688/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	4688

## GC Semi VOA

## Prep Batch: 4566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-860-1	BH01A	Total/NA	Solid	8015NM Prep	
MB 880-4566/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-4566/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-4566/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 4568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-860-1	BH01A	Total/NA	Solid	8015B NM	4566
MB 880-4566/1-A	Method Blank	Total/NA	Solid	8015B NM	4566
LCS 880-4566/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	4566
LCSD 880-4566/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	4566

## HPLC/IC

## Leach Batch: 4584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-860-1	BH01A	Soluble	Solid	DI Leach	
MB 880-4584/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-4584/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-4584/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

## Analysis Batch: 4716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-860-1	BH01A	Soluble	Solid	300.0	4584
MB 880-4584/1-A	Method Blank	Soluble	Solid	300.0	4584
LCS 880-4584/2-A	Lab Control Sample	Soluble	Solid	300.0	4584
LCSD 880-4584/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	4584

Eurofins Xenco, Carlsbad

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

Client Sample ID: BH01A

Date Collected: 06/22/21 14:40

Date Received: 06/23/21 10:15

Lab Sample ID: 890-860-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4688	06/28/21 11:30	MR	XEN MID
Total/NA	Analysis	8021B		1	4689	06/28/21 21:28	MR	XEN MID
Total/NA	Prep	8015NM Prep			4566	06/24/21 10:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1	4568	06/24/21 19:06	AJ	XEN MID
Soluble	Leach	DI Leach			4584	06/24/21 12:13	CH	XEN MID
Soluble	Analysis	300.0		1	4716	06/29/21 10:22	CH	XEN MID

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

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

Laboratory: Eurofins Xenco, Midland

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

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

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

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

Method Summary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

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

Protocol References:

- ASTM = ASTM International
- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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



Sample Summary

Client: WSP USA Inc.  
Project/Site: PLU Delaware C SWD

Job ID: 890-860-1  
SDG: TE012921022

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-860-1	BH01A	Solid	06/22/21 14:40	06/23/21 10:15	- 4

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

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Work Order Comments	
Program: UST/ST	<input type="checkbox"/> PRP <input type="checkbox"/> brownfields <input type="checkbox"/> RC <input type="checkbox"/> superfund <input type="checkbox"/>
State of Project:	
Reporting Level II	<input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> RRP <input type="checkbox"/> pvel IV <input type="checkbox"/>
Deliverables: EDD	<input type="checkbox"/> ADaPT <input type="checkbox"/> Other:

ANALYSIS REQUEST

### Work Order Notes

<b>SAMPLE RECEIPT</b>	Temp Blank:	Yes	No	Wet Ice:	Yes	No

Temperature (°C):	Thermometer ID
5.8/5.6	

Received Intact:	<input checked="" type="radio"/> Yes <input type="radio"/> No	INM-007
------------------	---	---------

Cooler Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A	Correction Factor:	
Sample Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	N/A	Total Containers:	

Sample Identification	Matrix	Date	Time	Depth
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Sampled	Sampled	Sampled	Sampled
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BH10A	S	6/22/2021	1440	4'
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[illegible]

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[illegible]




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Total 200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas
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Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010: 8**

**Notice:** Signature of this document and relinquishment of samples constitutes a valid purchase order for samples. Vendors will be liable only for the cost of samples and shall not assume any responsibility for the accuracy of the results. The results of the analysis are for information only and shall not be used for any legal or regulatory purposes.

A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample.

Relinquished by: (Signature)	Received by: (Signature)
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1	hu	hu
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3	
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5	
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## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-860-1

SDG Number: TE012921022

Login Number: 860

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Xenco, Carlsbad

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

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-860-1

SDG Number: TE012921022

Login Number: 860

List Number: 2

Creator: Copeland, Tatiana

List Source: Eurofins Xenco, Midland

List Creation: 06/24/21 12:08 PM


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




## APPENDIX C


### Boring Logs (2024 & 2025)


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 <b>ENSOLUM</b>		Sample Name: BH08		Date: 2/6/2024				
		Site Name: PLU Delaware C SWD						
		Incident Number: nJM1228428008, nJMW1228429248, nJM1231129593, nHMP1411828179						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.249016, -103.919455			Logged By: M. O'Dell		Method: Hand Auger			
			Hole Diameter: 4"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All chloride calculations made with a + 40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	<162.4	0	N		0.5	0	SP	Sand. Brown, poorly graded, very fine to fine grained, dry, no odor.
D	<162.4	0	N	BH08	1	1		
D	<162.4	0	N	BH08A	2	2		
D	<162.4	0	N	BH08B	3	3		
D	<162.4	0	N	BH08C	4	4		
Total Depth @ 4' bgs								


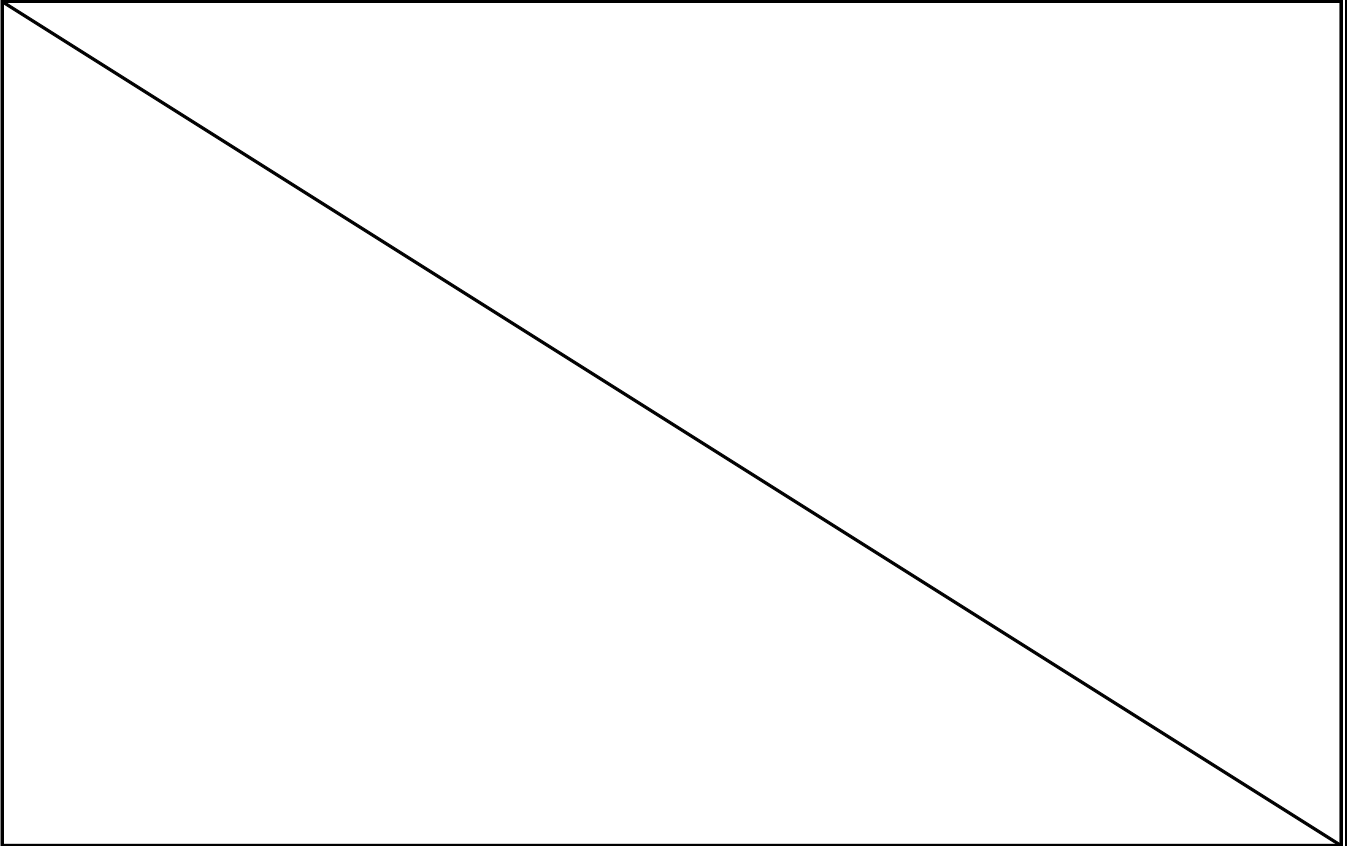
 <b>ENSOLUM</b>		Sample Name: BH09		Date: 2/6/2024				
		Site Name: PLU Delaware C SWD						
		Incident Number: nJM1228428008, nJMW1228429248, nJM1231129593, nHMP1411828179						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.248931, -103.919427			Logged By: M. O'Dell		Method: Hand Auger			
			Hole Diameter: 4"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All chloride calculations made with a + 40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	<162.4	0	N		0.5	0	SP	Sand. Reddish brown, poorly graded, very fine to fine grained, dry, no odor.
D	<162.4	0	N	BH09	1	1		
D	<162.4	0	N	BH09A	2	2		
D	<162.4	0	N	BH09B	3	3		
D	<162.4	0	N	BH09C	4	4		
Total Depth @ 4' bgs								





 <b>ENSOLUM</b>		Sample Name: BH10		Date: 2/6/2024				
		Site Name: PLU Delaware C SWD						
		Incident Number: nJM1228428008, nJMW1228429248, nJM1231129593, nHMP1411828179						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.248866, -103.919508				Logged By: M. O'Dell				
				Method: Hand Auger				
				Hole Diameter: 4"				
Total Depth: 4'								
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All chloride calculations made with a + 40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	<162.4	0	N		0.5	0	SP	Sand. Reddish brown, poorly graded, very fine to fine grained, dry, no odor.
D	<162.4	0	N	BH10	1	1		
D	<162.4	0	N	BH10A	2	2		
D	196	0	N	BH10B	3	3		
D	442.4	0	N	BH10C	4	4		
Total Depth @ 4' bgs								


 <b>ENSOLUM</b>		Sample Name: BH11		Date: 2/6/2024				
		Site Name: PLU Delaware C SWD						
		Incident Number: nJM1228428008, nJMW1228429248, nJM1231129593, nHMP1411828179						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.248571, -103.919400			Logged By: M. O'Dell		Method: Hand Auger			
			Hole Diameter: 4"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All chloride calculations made with a + 40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	<162.4	0	N		0.5	0	SP	Sand. Reddish brown, poorly graded, very fine to fine grained, dry, no odor.
D	<162.4	0	N	BH11	1	1		
D	<162.4	0	N	BH11A	2	2		
D	442.4	0	N	BH11B	3	3		
D	2,542	0	N	BH11C	4	4		Sand. Reddish brown, poorly graded, very fine to fine grained, trace CCHE, dry, no odor.
Total Depth @ 4' bgs								

 <b>ENSOLUM</b>		Sample Name: BH12		Date: 2/6/2024				
		Site Name: PLU Delaware C SWD						
		Incident Number: nJM1228428008, nJMW1228429248, nJM1231129593, nHMP1411828179						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.248640, -103.919351			Logged By: M. O'Dell		Method: Hand Auger			
			Hole Diameter: 4"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All chloride calculations made with a + 40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	<162.4	0	N		0.5	0	SP	Sand. Reddish brown, poorly graded, very fine to fine grained, dry, no odor.
D	<162.4	0	N	BH12	1	1		
D	<162.4	0	N	BH12A	2	2		
D	<162.4	0	N	BH12B	3	3		
D	621	0	N	BH12C	4	4		
Total Depth @ 4' bgs								


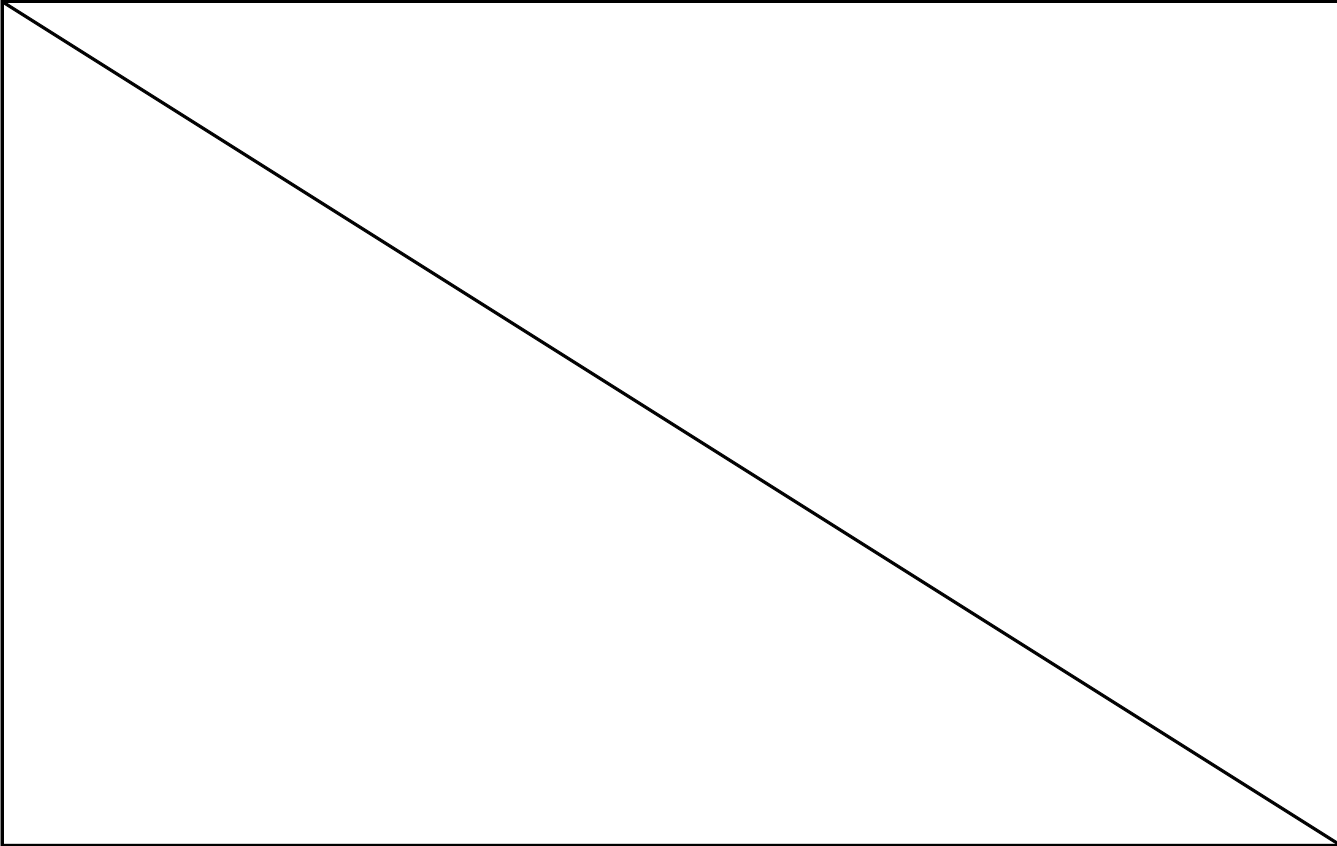
 <b>ENSOLUM</b>		Sample Name: SS01		Date: 2.19.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24880901, -103.91884287			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	6080	0.7	N	SS01	0.5	0.5	CCHE	(0-0.5') Beige poorly graded sand with silt and small pale gravel
D	1330	0	N		1	1	SP-SM	(0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	638.4	0	N		2	2		
D	2296	0	N		3	3		(@3') Some clay.
D	2920	0	N	SS01A	4	4		
Total depth @ 4 feet bgs								
								


 <b>ENSOLUM</b>		Sample Name: SS02		Date: 2.6.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24860040, -103.91872644				Logged By: JDB				
				Method: Backhoe				
				Hole Diameter: 3 feet				
				Total Depth: 4 feet				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	(0-0.5') Beige poorly graded sand with silt and small pale gravel
D	288	2	N	SS02	0.5	0.5	SP-SM	(0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	208	2.2	N	SS02A	1	1		
D	576.8	2.4	N		2	2		
D	576.8	1.9	N		3	3		
D	336	1.9	N	SS02B	4	4		(@4') Pale small gravel CCHE inclusions.
Total depth @ 4 feet bgs								


 <b>ENSOLUM</b>		Sample Name: SS07		Date: 2.4.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24898623, -103.91912282			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	800	3.5	N	SS07	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	512	5	N	SS07A	2	2		
D	1366	2	N		3	3		
D	688	0.6	N	SS07B	4	4		
Total depth @ 4 feet bgs								


 <b>ENSOLUM</b>		Sample Name: BH15		Date: 2.6.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24845561, -103.91930787			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	112	1.9	N	BH15	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	144	2	N	BH15A	2	2		
D	235.2	2.2	N			3		
D	720	1.9	N	BH15B	4	4		
Total depth @ 4 feet bgs								





 <b>ENSOLUM</b>		Sample Name: BH17		Date: 2.6.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24906326, -103.91903385			Logged By: JDB		Method: Hand auger			
			Hole Diameter: 4"		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	288	0.7	N	BH17	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	235.2	0.7	N			2		
D	160	0.4	N	BH17A	3	3		
D	480	0.4	N	BH17B	4	4		
Total depth @ 4 feet bgs								
								


 <b>ENSOLUM</b>		Sample Name: BH18		Date: 2.20.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24905628, -103.91909893				Logged By: JDB				
				Method: Hand auger				
				Hole Diameter: 4"				
Total Depth: 4 feet								
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	196	0	N	BH18	0.5	0.5	CCHE	(0-0.5') Beige poorly graded sand with silt and small pale gravel
D	176	0.4	N		1	1	SP-SM	(0.5-4') Red brown poorly graded sand with silt, trace clay, some pale beige small gravel, no odor.
D	ND	0	N		2	2		(@2') No pale beige small gravel
D	ND	0.4	N		3	3		
D	128	0.4	N	BH18A	4	4		
Total depth @ 4 feet bgs								

 <b>ENSOLUM</b>		Sample Name: BH19		Date: 2.20.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24896861, -103.91917619				Logged By: JDB				
				Method: Hand auger				
				Hole Diameter: 4"				
Total Depth: 4 feet								
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	274.4	0.1	N	BH19	0.5	0.5	CCHE	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	272	0.1	N		1	1	SP-SM	
D	319.2	0.4	N		2	2		
D	ND	0.4	N		3	3		
D	112	0.4	N	BH19A	4	4		
Total depth @ 4 feet bgs								


 <b>ENSOLUM</b>		Sample Name: BH20		Date: 2.20.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24888196, -103.91911998				Logged By: JDB				
				Method: Hand auger				
				Hole Diameter: 4"				
Total Depth: 4 feet								
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	(0-1') Beige poorly graded sand with silt and small pale gravel
D	ND	0	N	BH20	0.5		SP-SM	(1-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	352	0.4	N		1	1		
D	ND	0.2	N		2	2		
D	ND	0.2	N		3	3		
D	208	0.4	N	BH20A	4	4		
Total depth @ 4 feet bgs								


 <b>ENSOLUM</b>								Sample Name: BH21		Date: 5.14.25	
								Site Name: PLU Del C SWD			
								Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248			
								Job Number: 03C1558237			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								Logged By: JDB		Method: Hand auger	
Coordinates: 32.249055, -103.919153								Hole Diameter: 4"		Total Depth: 4 feet	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
						0	CCHE	(0-1') Beige poorly graded sand with silt and small pale gravel			
D	ND	0	N	BH21	0.5		SP-SM	(1-4') Red brown poorly graded sand with silt, trace clay, no odor.			
D	ND	0	N		1	1					
D	ND	0.8	N		2	2					
D	ND	2.5	N		3	3					
D	ND	4.5	N	BH21A	4	4					
Total depth @ 4 feet bgs											


 <b>ENSOLUM</b>		Sample Name: BH22		Date: 5.14.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.249091, -103.919103			Logged By: JDB		Method: Hand auger			
			Hole Diameter: 4"		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	(0-1') Beige poorly graded sand with silt and small pale gravel
D	420	7.4	N	BH22	0.5			
D	369.9	4.3	N	BH22A	1	1	SP-SM	(1-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	207.2	6.5	N		2	2		
D	240.8	3.5	N		3	3		(@3') with some clay.
D	280	3.2	N	BH22B	4	4		
Total depth @ 4 feet bgs								


 <b>ENSOLUM</b>		Sample Name: PH17		Date: 2.5.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24893877, -103.91888883			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	256	2.3	N	PH17	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	319.2	1.2	N		2	2		
D	1700	1.5	N	PH17A	3	3		
D	2080	1.2	N	PH17B	4	4	CCHE	(4') Pale beige hard CCHE, poorly graded sand with silt, trace clay, small and large gravel.
Total depth @ 4 feet bgs								





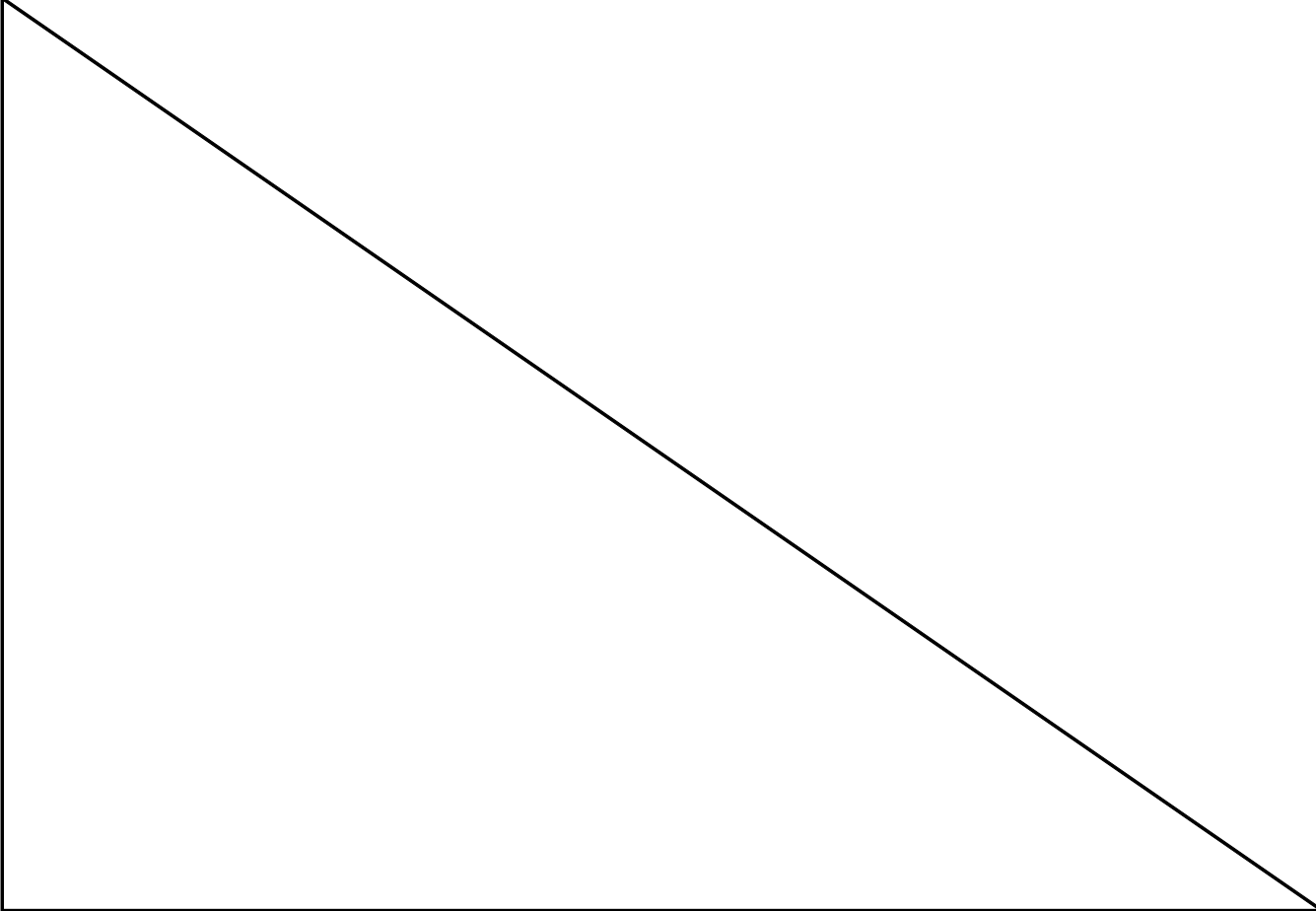
 <b>ENSOLUM</b>		Sample Name: PH19		Date: 2.5.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24900665, -103.91903699				Logged By: JDB				
				Method: Backhoe				
				Hole Diameter: 3 feet				
				Total Depth: 4 feet				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	880	2.2	N	PH19	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	464	2.3	N	PH19A	2	2		
D		2.9	N		3	3		
D	512	3	N	PH19B	4	4		
Total depth @ 4 feet bgs								


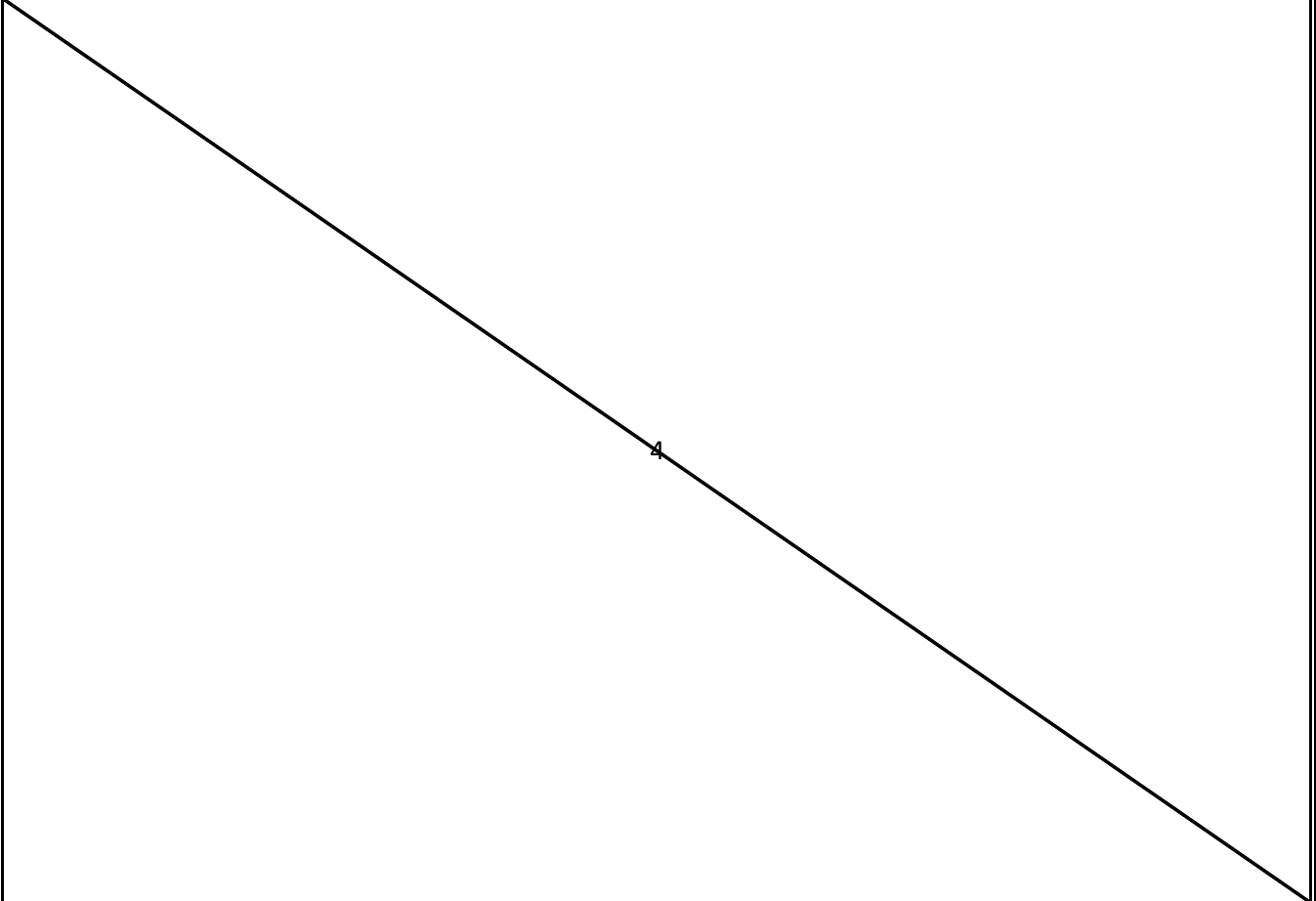
 <b>ENSOLUM</b>		Sample Name: PH20		Date: 2.4.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, nJMW1219345739, nJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24893563, -103.91905355				Logged By: JDB				
				Method: Hand auger				
				Hole Diameter: 4"				
				Total Depth: 4 feet				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	1200	1.2	N	PH20	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	1150	1.5	N	PH20A	2	2		
D	767.2	1.2	N		3	3		
D	688	0.7	N	PH20B	4	4		
Total depth @ 4 feet bgs								

 <b>ENSOLUM</b>		Sample Name: PH21		Date: 2.5.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24882801, -103.91871647			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	80	1.2	N	PH21	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-3') Red brown poorly graded sand with silt, trace clay, no odor.
D	272	2.4	N	PH21A	2	2		
D	576.8	2.3	N		3	3	CCHE	(3-4') Pale beige hard CCHE, poorly graded sand with silt, trace clay, small and large gravel.
D	592	1.8	N	PH21B	4	4		
Total depth @ 4 feet bgs								


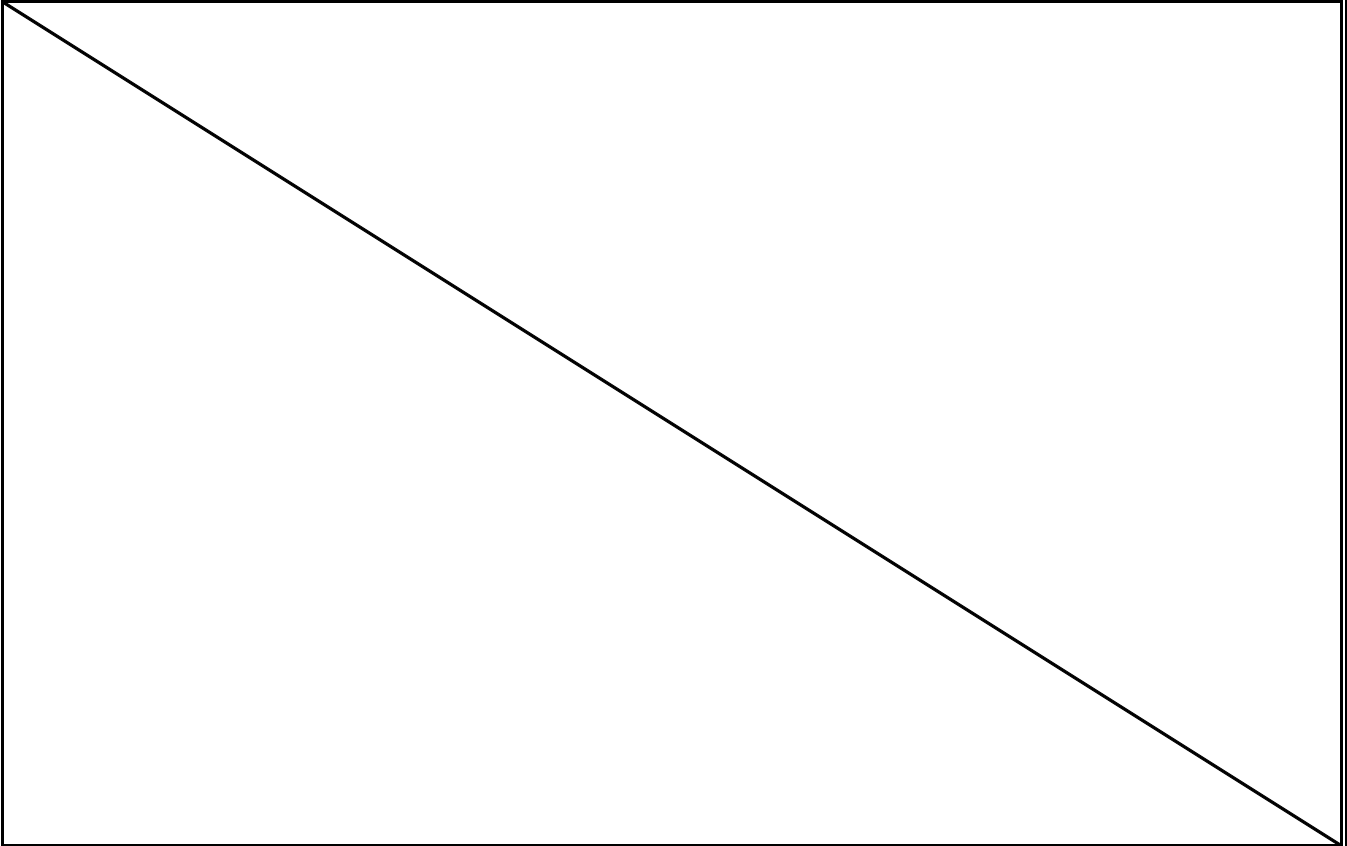
 <b>ENSOLUM</b>		Sample Name: PH22		Date: 2.18.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.248747, -103.918848			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	960	0	N	PH22	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	816	0	N	PH22A	2	2		
D	996.8	0.6	N		3	3		
D	704	0	N	PH22B	4	4		(@4') some clay, pale gravel CCHE inclusions
Total depth @ 4 feet bgs								


 <b>ENSOLUM</b>		Sample Name: PH23		Date: 2.6.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24894046, -103.91883687			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 3 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	384	1.5	N	PH23	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-3') Red brown poorly graded sand with silt, trace clay, no odor.
D	688	1.5	N	PH23A	2	2		
D	848	1.4	N	PH23B	3	3	CCHE	(@3') Pale beige CCHE, poorly graded sand with silt and gravel, trace clay. Refusal.
Total depth @ 3 feet bgs								


 <b>ENSOLUM</b>		Sample Name: PH25		Date: 2.6.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24855608, -103.91880532			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	416	1.9	N	PH25	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-3') Red brown poorly graded sand with silt, trace clay, no odor.
D	840	2	N	PH25A	2	2		
D	656	1.1	N	PH25B	3	3	CCHE	(@3') Pale beige CCHE, poorly graded sand with silt and gravel, trace clay. Refusal.
Total depth @ 3 feet bgs								
								


 <b>ENSOLUM</b>		Sample Name: PH26		Date: 2.6.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24894046, -103.91883687			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	400	1.4	N	PH26	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-3') Red brown poorly graded sand with silt, trace clay, no odor.
D	515.2	1.7	N	PH26A	2	2		
D	912	2.2	N	PH26B	3	3	CCHE	(@3') Pale beige CCHE, poorly graded sand with silt and gravel, trace clay. Refusal.
Total depth @ 3 feet bgs								
								





 <b>ENSOLUM</b>		Sample Name: PH27		Date: 2.6.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24901170, -103.91890412			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	160	1.8	N	PH27	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	196	1.6	N		2	2		
D	288	2	N	PH27A	3	3		
D	464	2.3	N	PH27B	4	4		
Total depth @ 4 feet bgs								
								


 <b>ENSOLUM</b>		Sample Name: PH28		Date: 2.18.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24894398, -103.91878621			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	240	0.3	N	PH28	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	576.8	0.1	N		2	2		
D	1090	0	N	PH28A	3	3		
D	1720	0.2	N	PH28B	4	4	CCHE	(@4') Pale beige CCHE, poorly graded sand with silt and gravel, trace clay.
Total depth @ 4 feet bgs								

 <b>ENSOLUM</b>		Sample Name: PH29		Date: 2.18.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24895048, -103.91871462			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	336	0	N	PH29	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, trace clay, no odor.
D	274.4	0	N		2	2		
D	208	0	N	PH29A	3	3		
D	192	0.1	N	PH29B	4	4		(@4') pale small gravel CCHE inclusions
Total depth @ 4 feet bgs								

 <b>ENSOLUM</b>		Sample Name: PH30		Date: 2.18.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24882659, -103.91860918				Logged By: JDB				
				Method: Backhoe				
				Hole Diameter: 3 feet				
				Total Depth: 4 feet				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	192	0	N	PH30	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-3') Red brown poorly graded sand with silt, trace clay, no odor.
D	464.8	0	N		2	2		(@2') some clay
D	240	0	N	PH30A	3	3	CCHE	(@3') Pale beige CCHE, poorly graded sand with silt and gravel, trace clay.
D	112	0	N	PH30B	4	4		
Total depth @ 4 feet bgs								

 <b>ENSOLUM</b>		Sample Name: PH31		Date: 2.18.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24871471, -103.91864535			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	400	0	N	PH31	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-2') Red brown poorly graded sand with silt, some clay, pale small gravel CCHE incl, no odor.
D	464.8	0	N		2	2	CCHE	(@2') Pale beige CCHE, poorly graded sand with silt and gravel, trace clay.
D	400	0	N	PH31A	3	3		
D	112	0	N	PH31B	4	4		
Total depth @ 4 feet bgs								

 <b>ENSOLUM</b>		Sample Name: PH32		Date: 2.18.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24852680, -103.91873560			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	272	0	N	PH32	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-3') Red brown poorly graded sand with silt, little clay, pale small gravel CCHE incl, no odor.
D	32	0	N	PH32A	2	2		(@2') some clay, small gravel CCHE inclusions
D	256	0	N	PH32B	3	3	CCHE	(3-4') Pale beige CCHE, poorly graded sand with silt and gravel, trace clay.
D	352	0	N	PH32C	4	4		
Total depth @ 4 feet bgs								

 <b>ENSOLUM</b>		Sample Name: PH33		Date: 2.20.25				
		Site Name: PLU Del C SWD						
		Incident Number: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248						
		Job Number: 03C1558237						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.24848643, -103.91905173			Logged By: JDB		Method: Backhoe			
			Hole Diameter: 3 feet		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	176	0		PH33	1	0 0.5 1	CCHE SP-SM	(0-0.5') Beige poorly graded sand with silt and small pale gravel (0.5-4') Red brown poorly graded sand with silt, little clay, pale small gravel CCHE incl, no odor.
D	396	0			2	2		(@2') without CCHE inclusions.
D	396	0			3	3		
D	192	0		PH33A	4	4		
Total depth @ 4 feet bgs								





## APPENDIX D

### Photographic Log (2024 & 2025)

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## Photographic Log

XTO Energy, Inc  
Poker Lake Unit #153

Incident Numbers NHMP1411828179, nJMW1219345739,  
nJMW1231129593, NJMW1228428008, NJMW1228429248

Photo 1: BH08 - Pos. Feb 06, 2024 at 10:57:05 MST  
Position: 32.248841, -103.918564 ±9ft ALT: 3175ft  
Altitude: 3175ft ±9ft ALT: 3175ft  
Datum: WGS 84  
Azimuth/Bearing: 188° NDB: 1423mils True  
Elevation Angle: -25.5°  
Horizontal Angle: 101.3°  
Zoom: 0.5X  
BH08al4  
Manaha O Dell



Photograph 1  
Description: BH08  
View: East  
Date: 02/06/2024

BRG: 27°N (T) POS: 32.248969, -103.919072 ±23ft ALT: 3136ft



Photograph 2  
Description: SS07  
View: North-northeast  
Date: 02/05/2025

BRG: 251°SW (T) POS: 32.248841, -103.918564 ±9ft ALT: 3175ft



Photograph 3  
Description: Hydrovac and pothole locations  
View: West-southwest  
Date: 02/19/2025

BRG: 309°NW (T) POS: 32.249056, -103.919133 ±13ft ALT: 3166ft



Photograph 4  
Description: BH21  
View: Northwest  
Date: 05/14/2025



## APPENDIX E

### Laboratory Analytical Reports and Chain of Custody Documentation (2024 & 2025)

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Tacoma Morrissey  
Ensolum  
601 N. Marienfeld St.  
Suite 400  
Midland, Texas 79701

Generated 2/26/2024 7:29:53 PM Revision 1

## JOB DESCRIPTION

PLU Delaware CS WD  
03C1558232

## JOB NUMBER

890-6116-1

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad NM 88220



## Eurofins Carlsbad

### Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

### Authorization



Authorized for release by  
Jessica Kramer, Project Manager  
[Jessica.Kramer@et.eurofinsus.com](mailto:Jessica.Kramer@et.eurofinsus.com)  
(432)704-5440

Generated  
2/26/2024 7:29:53 PM  
Revision 1

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Laboratory Job ID: 890-6116-1  
SDG: 03C1558232

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Definitions/Glossary

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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



## Case Narrative

Client: Ensolum  
Project: PLU Delaware CS WD

Job ID: 890-6116-1

Job ID: 890-6116-1

Eurofins Carlsbad

**Job Narrative**  
**890-6116-1**

REVISION

The report being provided is a revision of the original report sent on 2/19/2024. The report (revision 1) is being revised due to Per client email, requesting chloride re run.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

**Receipt**

The samples were received on 2/6/2024 2:49 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C.

**Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: BH08 (890-6116-1), BH08A (890-6116-2), BH08B (890-6116-3), BH08C (890-6116-4), BH09 (890-6116-5), BH09A (890-6116-6), BH09B (890-6116-7), BH09C (890-6116-8), BH10 (890-6116-9), BH10A (890-6116-10), BH10B (890-6116-11), BH10C (890-6116-12), BH11 (890-6116-13), BH11A (890-6116-14), BH11B (890-6116-15), BH11C (890-6116-16), BH12 (890-6116-17), BH12A (890-6116-18), BH12B (890-6116-19) and BH012C (890-6116-20).

**GC VOA**

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

**GC Semi VOA**

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-72672 and analytical batch 880-72991 was outside the upper control limits.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: BH08 (890-6116-1), BH08A (890-6116-2), BH08B (890-6116-3), BH08C (890-6116-4), BH09A (890-6116-6), BH09B (890-6116-7), BH09C (890-6116-8), BH10 (890-6116-9), BH10A (890-6116-10), BH10B (890-6116-11), BH10C (890-6116-12), BH11 (890-6116-13), BH11A (890-6116-14), BH11B (890-6116-15), BH11C (890-6116-16), BH12A (890-6116-18), BH012C (890-6116-20) and (890-6116-A-1-E MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

**HPLC/IC**

Method 300\_ORGFM\_28D - Soluble: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-72641 and analytical batch 880-72667 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 300\_ORGFM\_28D - Soluble: The method blank for preparation batch 880-73613 and analytical batch 880-73695 contained Chloride above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

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

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH08

Lab Sample ID: 890-6116-1

Date Collected: 02/06/24 12:15

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/16/24 20:29	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/16/24 20:29	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/16/24 20:29	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/14/24 16:39	02/16/24 20:29	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/16/24 20:29	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/14/24 16:39	02/16/24 20:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	02/14/24 16:39	02/16/24 20:29	1
1,4-Difluorobenzene (Surr)	93		70 - 130	02/14/24 16:39	02/16/24 20:29	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			02/16/24 20:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			02/13/24 09:56	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg		02/08/24 15:17	02/13/24 09:56	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		02/08/24 15:17	02/13/24 09:56	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		02/08/24 15:17	02/13/24 09:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	132	S1+	70 - 130	02/08/24 15:17	02/13/24 09:56	1
o-Terphenyl	112		70 - 130	02/08/24 15:17	02/13/24 09:56	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	106		5.04	mg/Kg			02/08/24 19:44	1

Client Sample ID: BH08A

Lab Sample ID: 890-6116-2

Date Collected: 02/06/24 12:45

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 20:50	1
Toluene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 20:50	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 20:50	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		02/14/24 16:39	02/16/24 20:50	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 20:50	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		02/14/24 16:39	02/16/24 20:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130	02/14/24 16:39	02/16/24 20:50	1
1,4-Difluorobenzene (Surr)	98		70 - 130	02/14/24 16:39	02/16/24 20:50	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH08A

Lab Sample ID: 890-6116-2

Date Collected: 02/06/24 12:45

Matrix: Solid

Date Received: 02/06/24 14:49

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			02/16/24 20:50	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			02/13/24 11:04	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/08/24 15:17	02/13/24 11:04	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/08/24 15:17	02/13/24 11:04	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/08/24 15:17	02/13/24 11:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	152	S1+	70 - 130			02/08/24 15:17	02/13/24 11:04	1
o-Terphenyl	124		70 - 130			02/08/24 15:17	02/13/24 11:04	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	250		5.00	mg/Kg			02/08/24 19:57	1

Client Sample ID: BH08B

Lab Sample ID: 890-6116-3

Date Collected: 02/06/24 12:40

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 21:10	1
Toluene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 21:10	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 21:10	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		02/14/24 16:39	02/16/24 21:10	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 21:10	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		02/14/24 16:39	02/16/24 21:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130			02/14/24 16:39	02/16/24 21:10	1
1,4-Difluorobenzene (Surr)	99		70 - 130			02/14/24 16:39	02/16/24 21:10	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			02/16/24 21:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			02/13/24 11:25	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/08/24 15:17	02/13/24 11:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/08/24 15:17	02/13/24 11:25	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH08B

Lab Sample ID: 890-6116-3

Date Collected: 02/06/24 12:40

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/08/24 15:17	02/13/24 11:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	156	S1+	70 - 130			02/08/24 15:17	02/13/24 11:25	1
o-Terphenyl	133	S1+	70 - 130			02/08/24 15:17	02/13/24 11:25	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	79.8		5.01	mg/Kg			02/08/24 20:02	1

Client Sample ID: BH08C

Lab Sample ID: 890-6116-4

Date Collected: 02/06/24 12:30

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		02/14/24 16:39	02/16/24 21:31	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/14/24 16:39	02/16/24 21:31	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/14/24 16:39	02/16/24 21:31	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/14/24 16:39	02/16/24 21:31	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/14/24 16:39	02/16/24 21:31	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/14/24 16:39	02/16/24 21:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			02/14/24 16:39	02/16/24 21:31	1
1,4-Difluorobenzene (Surr)	99		70 - 130			02/14/24 16:39	02/16/24 21:31	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			02/16/24 21:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6	mg/Kg			02/13/24 11:46	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	49.6	mg/Kg		02/08/24 15:17	02/13/24 11:46	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		02/08/24 15:17	02/13/24 11:46	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		02/08/24 15:17	02/13/24 11:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	144	S1+	70 - 130			02/08/24 15:17	02/13/24 11:46	1
o-Terphenyl	127		70 - 130			02/08/24 15:17	02/13/24 11:46	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	104		5.02	mg/Kg			02/08/24 20:07	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH09

Lab Sample ID: 890-6116-5

Date Collected: 02/06/24 09:10

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 21:51	1
Toluene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 21:51	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 21:51	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		02/14/24 16:39	02/16/24 21:51	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 21:51	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		02/14/24 16:39	02/16/24 21:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130	02/14/24 16:39	02/16/24 21:51	1
1,4-Difluorobenzene (Surr)	99		70 - 130	02/14/24 16:39	02/16/24 21:51	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			02/16/24 21:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			02/13/24 12:08	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/08/24 15:17	02/13/24 12:08	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/08/24 15:17	02/13/24 12:08	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/08/24 15:17	02/13/24 12:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	128		70 - 130	02/08/24 15:17	02/13/24 12:08	1
o-Terphenyl	110		70 - 130	02/08/24 15:17	02/13/24 12:08	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	95.8		4.97	mg/Kg			02/08/24 20:12	1

Client Sample ID: BH09A

Lab Sample ID: 890-6116-6

Date Collected: 02/06/24 09:15

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 22:12	1
Toluene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 22:12	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 22:12	1
m-Xylene & p-Xylene	<0.00397	U	0.00397	mg/Kg		02/14/24 16:39	02/16/24 22:12	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 22:12	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		02/14/24 16:39	02/16/24 22:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130	02/14/24 16:39	02/16/24 22:12	1
1,4-Difluorobenzene (Surr)	96		70 - 130	02/14/24 16:39	02/16/24 22:12	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH09A

Lab Sample ID: 890-6116-6

Date Collected: 02/06/24 09:15

Matrix: Solid

Date Received: 02/06/24 14:49

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			02/16/24 22:12	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			02/13/24 12:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		02/08/24 15:17	02/13/24 12:30	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		02/08/24 15:17	02/13/24 12:30	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		02/08/24 15:17	02/13/24 12:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	158	S1+	70 - 130			02/08/24 15:17	02/13/24 12:30	1
o-Terphenyl	133	S1+	70 - 130			02/08/24 15:17	02/13/24 12:30	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	82.1		4.96	mg/Kg			02/08/24 20:25	1

Client Sample ID: BH09B

Lab Sample ID: 890-6116-7

Date Collected: 02/06/24 09:20

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/16/24 22:32	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/16/24 22:32	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/16/24 22:32	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		02/14/24 16:39	02/16/24 22:32	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/16/24 22:32	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		02/14/24 16:39	02/16/24 22:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130			02/14/24 16:39	02/16/24 22:32	1
1,4-Difluorobenzene (Surr)	100		70 - 130			02/14/24 16:39	02/16/24 22:32	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			02/16/24 22:32	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2	mg/Kg			02/13/24 12:52	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.2	U	50.2	mg/Kg		02/08/24 15:17	02/13/24 12:52	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2	mg/Kg		02/08/24 15:17	02/13/24 12:52	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH09B

Lab Sample ID: 890-6116-7

Date Collected: 02/06/24 09:20

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		02/08/24 15:17	02/13/24 12:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	151	S1+	70 - 130			02/08/24 15:17	02/13/24 12:52	1
o-Terphenyl	121		70 - 130			02/08/24 15:17	02/13/24 12:52	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	181		5.03	mg/Kg			02/08/24 20:30	1

Client Sample ID: BH09C

Lab Sample ID: 890-6116-8

Date Collected: 02/06/24 09:25

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/16/24 22:53	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/16/24 22:53	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/16/24 22:53	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/14/24 16:39	02/16/24 22:53	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/16/24 22:53	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/14/24 16:39	02/16/24 22:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			02/14/24 16:39	02/16/24 22:53	1
1,4-Difluorobenzene (Surr)	100		70 - 130			02/14/24 16:39	02/16/24 22:53	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			02/16/24 22:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4	mg/Kg			02/13/24 13:14	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4	mg/Kg		02/08/24 15:17	02/13/24 13:14	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		02/08/24 15:17	02/13/24 13:14	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		02/08/24 15:17	02/13/24 13:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	158	S1+	70 - 130			02/08/24 15:17	02/13/24 13:14	1
o-Terphenyl	128		70 - 130			02/08/24 15:17	02/13/24 13:14	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	251		4.98	mg/Kg			02/08/24 20:35	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH10

Lab Sample ID: 890-6116-9

Date Collected: 02/06/24 09:50

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 23:14	1
Toluene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 23:14	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 23:14	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		02/14/24 16:39	02/16/24 23:14	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/16/24 23:14	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		02/14/24 16:39	02/16/24 23:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	02/14/24 16:39	02/16/24 23:14	1
1,4-Difluorobenzene (Surr)	101		70 - 130	02/14/24 16:39	02/16/24 23:14	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			02/16/24 23:14	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			02/13/24 13:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		02/08/24 15:17	02/13/24 13:36	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		02/08/24 15:17	02/13/24 13:36	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		02/08/24 15:17	02/13/24 13:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	136	S1+	70 - 130	02/08/24 15:17	02/13/24 13:36	1
o-Terphenyl	115		70 - 130	02/08/24 15:17	02/13/24 13:36	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	368		4.98	mg/Kg			02/08/24 20:39	1

Client Sample ID: BH10A

Lab Sample ID: 890-6116-10

Date Collected: 02/06/24 09:55

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 23:34	1
Toluene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 23:34	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 23:34	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		02/14/24 16:39	02/16/24 23:34	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/16/24 23:34	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		02/14/24 16:39	02/16/24 23:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130	02/14/24 16:39	02/16/24 23:34	1
1,4-Difluorobenzene (Surr)	102		70 - 130	02/14/24 16:39	02/16/24 23:34	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH10A

Lab Sample ID: 890-6116-10

Date Collected: 02/06/24 09:55

Matrix: Solid

Date Received: 02/06/24 14:49

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			02/16/24 23:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			02/13/24 13:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		02/08/24 15:17	02/13/24 13:58	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		02/08/24 15:17	02/13/24 13:58	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		02/08/24 15:17	02/13/24 13:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	154	S1+	70 - 130			02/08/24 15:17	02/13/24 13:58	1
o-Terphenyl	131	S1+	70 - 130			02/08/24 15:17	02/13/24 13:58	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	544		5.00	mg/Kg			02/08/24 20:44	1

Client Sample ID: BH10B

Lab Sample ID: 890-6116-11

Date Collected: 02/06/24 10:00

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 00:57	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 00:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 00:57	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/14/24 16:39	02/17/24 00:57	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 00:57	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/14/24 16:39	02/17/24 00:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130			02/14/24 16:39	02/17/24 00:57	1
1,4-Difluorobenzene (Surr)	101		70 - 130			02/14/24 16:39	02/17/24 00:57	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			02/17/24 00:57	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6	mg/Kg			02/13/24 14:41	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	49.6	mg/Kg		02/08/24 15:17	02/13/24 14:41	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		02/08/24 15:17	02/13/24 14:41	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH10B

Lab Sample ID: 890-6116-11

Date Collected: 02/06/24 10:00

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		02/08/24 15:17	02/13/24 14:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	142	S1+	70 - 130			02/08/24 15:17	02/13/24 14:41	1
o-Terphenyl	123		70 - 130			02/08/24 15:17	02/13/24 14:41	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	591	B	5.03	mg/Kg			02/21/24 12:35	1

Client Sample ID: BH10C

Lab Sample ID: 890-6116-12

Date Collected: 02/06/24 10:05

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 01:18	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 01:18	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 01:18	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/14/24 16:39	02/17/24 01:18	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 01:18	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/14/24 16:39	02/17/24 01:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130			02/14/24 16:39	02/17/24 01:18	1
1,4-Difluorobenzene (Surr)	107		70 - 130			02/14/24 16:39	02/17/24 01:18	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			02/17/24 01:18	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1	mg/Kg			02/13/24 15:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	50.1	mg/Kg		02/08/24 15:17	02/13/24 15:03	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		02/08/24 15:17	02/13/24 15:03	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		02/08/24 15:17	02/13/24 15:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	163	S1+	70 - 130			02/08/24 15:17	02/13/24 15:03	1
o-Terphenyl	136	S1+	70 - 130			02/08/24 15:17	02/13/24 15:03	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	868		4.95	mg/Kg			02/08/24 21:02	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH11

Lab Sample ID: 890-6116-13

Date Collected: 02/06/24 10:30

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 01:38	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 01:38	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 01:38	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/14/24 16:39	02/17/24 01:38	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 01:38	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/14/24 16:39	02/17/24 01:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	02/14/24 16:39	02/17/24 01:38	1
1,4-Difluorobenzene (Surr)	105		70 - 130	02/14/24 16:39	02/17/24 01:38	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			02/17/24 01:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			02/13/24 15:26	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5	mg/Kg		02/08/24 15:17	02/13/24 15:26	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		02/08/24 15:17	02/13/24 15:26	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		02/08/24 15:17	02/13/24 15:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	160	S1+	70 - 130	02/08/24 15:17	02/13/24 15:26	1
o-Terphenyl	137	S1+	70 - 130	02/08/24 15:17	02/13/24 15:26	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	207		5.03	mg/Kg			02/08/24 21:07	1

Client Sample ID: BH11A

Lab Sample ID: 890-6116-14

Date Collected: 02/06/24 10:35

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 01:59	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 01:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 01:59	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/14/24 16:39	02/17/24 01:59	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 01:59	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/14/24 16:39	02/17/24 01:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	02/14/24 16:39	02/17/24 01:59	1
1,4-Difluorobenzene (Surr)	102		70 - 130	02/14/24 16:39	02/17/24 01:59	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH11A

Lab Sample ID: 890-6116-14

Date Collected: 02/06/24 10:35

Matrix: Solid

Date Received: 02/06/24 14:49

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			02/17/24 01:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			02/13/24 15:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/08/24 15:17	02/13/24 15:48	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/08/24 15:17	02/13/24 15:48	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/08/24 15:17	02/13/24 15:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	157	S1+	70 - 130			02/08/24 15:17	02/13/24 15:48	1
o-Terphenyl	133	S1+	70 - 130			02/08/24 15:17	02/13/24 15:48	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	123		4.99	mg/Kg			02/08/24 21:21	1

Client Sample ID: BH11B

Lab Sample ID: 890-6116-15

Date Collected: 02/06/24 10:40

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 02:20	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 02:20	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 02:20	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/14/24 16:39	02/17/24 02:20	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/17/24 02:20	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/14/24 16:39	02/17/24 02:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130			02/14/24 16:39	02/17/24 02:20	1
1,4-Difluorobenzene (Surr)	106		70 - 130			02/14/24 16:39	02/17/24 02:20	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			02/17/24 02:20	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			02/13/24 16:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		02/08/24 15:17	02/13/24 16:10	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		02/08/24 15:17	02/13/24 16:10	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH11B

Lab Sample ID: 890-6116-15

Date Collected: 02/06/24 10:40

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		02/08/24 15:17	02/13/24 16:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	154	S1+	70 - 130			02/08/24 15:17	02/13/24 16:10	1
o-Terphenyl	134	S1+	70 - 130			02/08/24 15:17	02/13/24 16:10	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	526	B	4.96	mg/Kg			02/21/24 12:42	1

Client Sample ID: BH11C

Lab Sample ID: 890-6116-16

Date Collected: 02/06/24 10:45

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/17/24 02:40	1
Toluene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/17/24 02:40	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/17/24 02:40	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		02/14/24 16:39	02/17/24 02:40	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/17/24 02:40	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		02/14/24 16:39	02/17/24 02:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130			02/14/24 16:39	02/17/24 02:40	1
1,4-Difluorobenzene (Surr)	106		70 - 130			02/14/24 16:39	02/17/24 02:40	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			02/17/24 02:40	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6	mg/Kg			02/13/24 16:32	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	49.6	mg/Kg		02/08/24 15:17	02/13/24 16:32	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		02/08/24 15:17	02/13/24 16:32	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		02/08/24 15:17	02/13/24 16:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	152	S1+	70 - 130			02/08/24 15:17	02/13/24 16:32	1
o-Terphenyl	133	S1+	70 - 130			02/08/24 15:17	02/13/24 16:32	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2130		25.0	mg/Kg			02/08/24 21:30	5

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH12

Lab Sample ID: 890-6116-17

Date Collected: 02/06/24 12:00

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		02/14/24 16:39	02/17/24 03:01	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/14/24 16:39	02/17/24 03:01	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/14/24 16:39	02/17/24 03:01	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/14/24 16:39	02/17/24 03:01	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/14/24 16:39	02/17/24 03:01	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/14/24 16:39	02/17/24 03:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	02/14/24 16:39	02/17/24 03:01	1
1,4-Difluorobenzene (Surr)	103		70 - 130	02/14/24 16:39	02/17/24 03:01	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			02/17/24 03:01	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			02/13/24 16:54	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg		02/08/24 15:17	02/13/24 16:54	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		02/08/24 15:17	02/13/24 16:54	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		02/08/24 15:17	02/13/24 16:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	117		70 - 130	02/08/24 15:17	02/13/24 16:54	1
o-Terphenyl	102		70 - 130	02/08/24 15:17	02/13/24 16:54	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	72.1		4.98	mg/Kg			02/08/24 21:35	1

Client Sample ID: BH12A

Lab Sample ID: 890-6116-18

Date Collected: 02/06/24 12:05

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/17/24 03:22	1
Toluene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/17/24 03:22	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/17/24 03:22	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		02/14/24 16:39	02/17/24 03:22	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		02/14/24 16:39	02/17/24 03:22	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		02/14/24 16:39	02/17/24 03:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130	02/14/24 16:39	02/17/24 03:22	1
1,4-Difluorobenzene (Surr)	99		70 - 130	02/14/24 16:39	02/17/24 03:22	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH12A

Lab Sample ID: 890-6116-18

Date Collected: 02/06/24 12:05

Matrix: Solid

Date Received: 02/06/24 14:49

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			02/17/24 03:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			02/13/24 17:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5	mg/Kg		02/08/24 15:17	02/13/24 17:16	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		02/08/24 15:17	02/13/24 17:16	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		02/08/24 15:17	02/13/24 17:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	145	S1+	70 - 130			02/08/24 15:17	02/13/24 17:16	1
o-Terphenyl	121		70 - 130			02/08/24 15:17	02/13/24 17:16	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	90.0		5.04	mg/Kg			02/08/24 21:40	1

Client Sample ID: BH12B

Lab Sample ID: 890-6116-19

Date Collected: 02/06/24 12:10

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 03:42	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 03:42	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 03:42	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/14/24 16:39	02/17/24 03:42	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/14/24 16:39	02/17/24 03:42	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/14/24 16:39	02/17/24 03:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130			02/14/24 16:39	02/17/24 03:42	1
1,4-Difluorobenzene (Surr)	104		70 - 130			02/14/24 16:39	02/17/24 03:42	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			02/17/24 03:42	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			02/13/24 17:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		02/08/24 15:17	02/13/24 17:38	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		02/08/24 15:17	02/13/24 17:38	1

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## Client Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Client Sample ID: BH12B

Lab Sample ID: 890-6116-19

Date Collected: 02/06/24 12:10

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
OII Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		02/08/24 15:17	02/13/24 17:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	120		70 - 130			02/08/24 15:17	02/13/24 17:38	1
o-Terphenyl	103		70 - 130			02/08/24 15:17	02/13/24 17:38	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	246		5.02	mg/Kg			02/08/24 21:44	1

Client Sample ID: BH012C

Lab Sample ID: 890-6116-20

Date Collected: 02/06/24 12:35

Matrix: Solid

Date Received: 02/06/24 14:49

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/17/24 04:03	1
Toluene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/17/24 04:03	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/17/24 04:03	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		02/14/24 16:39	02/17/24 04:03	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		02/14/24 16:39	02/17/24 04:03	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		02/14/24 16:39	02/17/24 04:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130			02/14/24 16:39	02/17/24 04:03	1
1,4-Difluorobenzene (Surr)	105		70 - 130			02/14/24 16:39	02/17/24 04:03	1

## Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			02/17/24 04:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			02/13/24 17:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/08/24 15:17	02/13/24 17:59	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/08/24 15:17	02/13/24 17:59	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/08/24 15:17	02/13/24 17:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	162	S1+	70 - 130			02/08/24 15:17	02/13/24 17:59	1
o-Terphenyl	141	S1+	70 - 130			02/08/24 15:17	02/13/24 17:59	1

## Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	274		5.02	mg/Kg			02/08/24 21:49	1

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# Surrogate Summary

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BFB1 (70-130)	DFBZ1 (70-130)
890-6116-1	BH08	100	93
890-6116-1 MS	BH08	107	98
890-6116-1 MSD	BH08	121	88
890-6116-2	BH08A	108	98
890-6116-3	BH08B	102	99
890-6116-4	BH08C	105	99
890-6116-5	BH09	104	99
890-6116-6	BH09A	93	96
890-6116-7	BH09B	104	100
890-6116-8	BH09C	105	100
890-6116-9	BH10	97	101
890-6116-10	BH10A	108	102
890-6116-11	BH10B	99	101
890-6116-12	BH10C	100	107
890-6116-13	BH11	97	105
890-6116-14	BH11A	95	102
890-6116-15	BH11B	103	106
890-6116-16	BH11C	102	106
890-6116-17	BH12	95	103
890-6116-18	BH12A	94	99
890-6116-19	BH12B	98	104
890-6116-20	BH012C	103	105
LCS 880-73188/1-A	Lab Control Sample	116	99
LCSD 880-73188/2-A	Lab Control Sample Dup	114	97
MB 880-73188/5-A	Method Blank	75	98

### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO1 (70-130)	OTPH1 (70-130)
890-6116-1	BH08	132 S1+	112
890-6116-1 MS	BH08	133 S1+	102
890-6116-1 MSD	BH08	129	98
890-6116-2	BH08A	152 S1+	124
890-6116-3	BH08B	156 S1+	133 S1+
890-6116-4	BH08C	144 S1+	127
890-6116-5	BH09	128	110
890-6116-6	BH09A	158 S1+	133 S1+
890-6116-7	BH09B	151 S1+	121
890-6116-8	BH09C	158 S1+	128
890-6116-9	BH10	136 S1+	115
890-6116-10	BH10A	154 S1+	131 S1+
890-6116-11	BH10B	142 S1+	123
890-6116-12	BH10C	163 S1+	136 S1+

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Surrogate Summary

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-6116-13	BH11	160 S1+	137 S1+
890-6116-14	BH11A	157 S1+	133 S1+
890-6116-15	BH11B	154 S1+	134 S1+
890-6116-16	BH11C	152 S1+	133 S1+
890-6116-17	BH12	117	102
890-6116-18	BH12A	145 S1+	121
890-6116-19	BH12B	120	103
890-6116-20	BH012C	162 S1+	141 S1+
LCS 880-72672/2-A	Lab Control Sample	107	104
LCSD 880-72672/3-A	Lab Control Sample Dup	109	112
MB 880-72672/1-A	Method Blank	214 S1+	191 S1+

Surrogate Legend

1CO = 1-Chlorooctane  
OTPH = o-Terphenyl

## QC Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

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

Lab Sample ID: MB 880-73188/5-A

Matrix: Solid

Analysis Batch: 73398

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 73188

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/16/24 20:08	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/16/24 20:08	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/16/24 20:08	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/14/24 16:39	02/16/24 20:08	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/14/24 16:39	02/16/24 20:08	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/14/24 16:39	02/16/24 20:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		70 - 130	02/14/24 16:39	02/16/24 20:08	1
1,4-Difluorobenzene (Surr)	98		70 - 130	02/14/24 16:39	02/16/24 20:08	1

Lab Sample ID: LCS 880-73188/1-A

Matrix: Solid

Analysis Batch: 73398

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 73188

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1092		mg/Kg		109	70 - 130
Toluene	0.100	0.1039		mg/Kg		104	70 - 130
Ethylbenzene	0.100	0.1129		mg/Kg		113	70 - 130
m-Xylene & p-Xylene	0.200	0.2355		mg/Kg		118	70 - 130
o-Xylene	0.100	0.1181		mg/Kg		118	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	116		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: LCSD 880-73188/2-A

Matrix: Solid

Analysis Batch: 73398

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 73188

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09872		mg/Kg		99	70 - 130	10	35
Toluene	0.100	0.09710		mg/Kg		97	70 - 130	7	35
Ethylbenzene	0.100	0.1067		mg/Kg		107	70 - 130	6	35
m-Xylene & p-Xylene	0.200	0.2254		mg/Kg		113	70 - 130	4	35
o-Xylene	0.100	0.1127		mg/Kg		113	70 - 130	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	114		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: 890-6116-1 MS

Matrix: Solid

Analysis Batch: 73398

Client Sample ID: BH08

Prep Type: Total/NA

Prep Batch: 73188

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.100	0.08905		mg/Kg		89	70 - 130
Toluene	<0.00199	U	0.100	0.08481		mg/Kg		85	70 - 130

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

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

Lab Sample ID: 890-6116-1 MS

Matrix: Solid

Analysis Batch: 73398

Client Sample ID: BH08

Prep Type: Total/NA

Prep Batch: 73188

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.100	0.08930		mg/Kg		89	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1841		mg/Kg		92	70 - 130
o-Xylene	<0.00199	U	0.100	0.09335		mg/Kg		93	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 890-6116-1 MSD

Matrix: Solid

Analysis Batch: 73398

Client Sample ID: BH08

Prep Type: Total/NA

Prep Batch: 73188

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	<0.00199	U	0.101	0.07779		mg/Kg		77	70 - 130	13	35
Toluene	<0.00199	U	0.101	0.08382		mg/Kg		83	70 - 130	1	35
Ethylbenzene	<0.00199	U	0.101	0.09477		mg/Kg		94	70 - 130	6	35
m-Xylene & p-Xylene	<0.00398	U	0.201	0.2005		mg/Kg		100	70 - 130	9	35
o-Xylene	<0.00199	U	0.101	0.1013		mg/Kg		101	70 - 130	8	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	121		70 - 130
1,4-Difluorobenzene (Surr)	88		70 - 130

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

Lab Sample ID: MB 880-72672/1-A

Matrix: Solid

Analysis Batch: 72991

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72672

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/08/24 15:17	02/13/24 07:20	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/08/24 15:17	02/13/24 07:20	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/08/24 15:17	02/13/24 07:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	214	S1+	70 - 130	02/08/24 15:17	02/13/24 07:20	1
o-Terphenyl	191	S1+	70 - 130	02/08/24 15:17	02/13/24 07:20	1

Lab Sample ID: LCS 880-72672/2-A

Matrix: Solid

Analysis Batch: 72991

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 72672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1037		mg/Kg		104	70 - 130
Diesel Range Organics (Over C10-C28)	1000	965.7		mg/Kg		97	70 - 130

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

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

Lab Sample ID: LCS 880-72672/2-A

Matrix: Solid

Analysis Batch: 72991

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 72672

	LCS %Recovery	LCS Qualifier	Limits
Surrogate			
1-Chlorooctane	107		70 - 130
o-Terphenyl	104		70 - 130

Lab Sample ID: LCSD 880-72672/3-A

Matrix: Solid

Analysis Batch: 72991

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 72672

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1073		mg/Kg		107	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	1000	1025		mg/Kg		102	70 - 130	6	20

	LCSD %Recovery	LCSD Qualifier	Limits
Surrogate			
1-Chlorooctane	109		70 - 130
o-Terphenyl	112		70 - 130

Lab Sample ID: 890-6116-1 MS

Matrix: Solid

Analysis Batch: 72991

Client Sample ID: BH08

Prep Type: Total/NA

Prep Batch: 72672

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	1010	988.8		mg/Kg		98	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.3	U	1010	1136		mg/Kg		113	70 - 130		

	MS %Recovery	MS Qualifier	Limits
Surrogate			
1-Chlorooctane	133	S1+	70 - 130
o-Terphenyl	102		70 - 130

Lab Sample ID: 890-6116-1 MSD

Matrix: Solid

Analysis Batch: 72991

Client Sample ID: BH08

Prep Type: Total/NA

Prep Batch: 72672

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	1010	892.9		mg/Kg		88	70 - 130	10	20
Diesel Range Organics (Over C10-C28)	<50.3	U	1010	1104		mg/Kg		109	70 - 130	3	20

	MSD %Recovery	MSD Qualifier	Limits
Surrogate			
1-Chlorooctane	129		70 - 130
o-Terphenyl	98		70 - 130

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## QC Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-72641/1-A

Matrix: Solid

Analysis Batch: 72667

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			02/08/24 19:30	1

Lab Sample ID: LCS 880-72641/2-A

Matrix: Solid

Analysis Batch: 72667

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	248.6		mg/Kg		99	90 - 110

Lab Sample ID: LCSD 880-72641/3-A

Matrix: Solid

Analysis Batch: 72667

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	251.4		mg/Kg		101	90 - 110	1	20

Lab Sample ID: 890-6116-1 MS

Matrix: Solid

Analysis Batch: 72667

Client Sample ID: BH08

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	106		252	362.2		mg/Kg		102	90 - 110

Lab Sample ID: 890-6116-1 MSD

Matrix: Solid

Analysis Batch: 72667

Client Sample ID: BH08

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	106		252	374.0		mg/Kg		106	90 - 110	3	20

Lab Sample ID: 890-6116-A-11-B MS

Matrix: Solid

Analysis Batch: 72667

Client Sample ID: 890-6116-A-11-B MS

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	647	F1	249	852.1	F1	mg/Kg		83	90 - 110

Lab Sample ID: 890-6116-A-11-C MSD

Matrix: Solid

Analysis Batch: 72667

Client Sample ID: 890-6116-A-11-C MSD

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	647	F1	249	845.3	F1	mg/Kg		80	90 - 110	1	20

Lab Sample ID: MB 880-73613/1-A

Matrix: Solid

Analysis Batch: 73695

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.232		5.00	mg/Kg			02/21/24 08:25	1

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QC Sample Results

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCS 880-73613/2-A				Client Sample ID: Lab Control Sample							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 73695											
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	237.8		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-73613/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 73695											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	237.2		mg/Kg		95	90 - 110	0	20

Lab Sample ID: 880-39546-A-3-B MS				Client Sample ID: Matrix Spike							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 73695											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	83.7	B	250	329.0		mg/Kg		98	90 - 110		

Lab Sample ID: 880-39546-A-3-C MSD				Client Sample ID: Matrix Spike Duplicate							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 73695											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	83.7	B	250	329.5		mg/Kg		98	90 - 110	0	20

## QC Association Summary

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

## GC VOA

## Prep Batch: 73188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-1	BH08	Total/NA	Solid	5035	
890-6116-2	BH08A	Total/NA	Solid	5035	
890-6116-3	BH08B	Total/NA	Solid	5035	
890-6116-4	BH08C	Total/NA	Solid	5035	
890-6116-5	BH09	Total/NA	Solid	5035	
890-6116-6	BH09A	Total/NA	Solid	5035	
890-6116-7	BH09B	Total/NA	Solid	5035	
890-6116-8	BH09C	Total/NA	Solid	5035	
890-6116-9	BH10	Total/NA	Solid	5035	
890-6116-10	BH10A	Total/NA	Solid	5035	
890-6116-11	BH10B	Total/NA	Solid	5035	
890-6116-12	BH10C	Total/NA	Solid	5035	
890-6116-13	BH11	Total/NA	Solid	5035	
890-6116-14	BH11A	Total/NA	Solid	5035	
890-6116-15	BH11B	Total/NA	Solid	5035	
890-6116-16	BH11C	Total/NA	Solid	5035	
890-6116-17	BH12	Total/NA	Solid	5035	
890-6116-18	BH12A	Total/NA	Solid	5035	
890-6116-19	BH12B	Total/NA	Solid	5035	
890-6116-20	BH012C	Total/NA	Solid	5035	
MB 880-73188/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-73188/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-73188/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-6116-1 MS	BH08	Total/NA	Solid	5035	
890-6116-1 MSD	BH08	Total/NA	Solid	5035	

## Analysis Batch: 73398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-1	BH08	Total/NA	Solid	8021B	73188
890-6116-2	BH08A	Total/NA	Solid	8021B	73188
890-6116-3	BH08B	Total/NA	Solid	8021B	73188
890-6116-4	BH08C	Total/NA	Solid	8021B	73188
890-6116-5	BH09	Total/NA	Solid	8021B	73188
890-6116-6	BH09A	Total/NA	Solid	8021B	73188
890-6116-7	BH09B	Total/NA	Solid	8021B	73188
890-6116-8	BH09C	Total/NA	Solid	8021B	73188
890-6116-9	BH10	Total/NA	Solid	8021B	73188
890-6116-10	BH10A	Total/NA	Solid	8021B	73188
890-6116-11	BH10B	Total/NA	Solid	8021B	73188
890-6116-12	BH10C	Total/NA	Solid	8021B	73188
890-6116-13	BH11	Total/NA	Solid	8021B	73188
890-6116-14	BH11A	Total/NA	Solid	8021B	73188
890-6116-15	BH11B	Total/NA	Solid	8021B	73188
890-6116-16	BH11C	Total/NA	Solid	8021B	73188
890-6116-17	BH12	Total/NA	Solid	8021B	73188
890-6116-18	BH12A	Total/NA	Solid	8021B	73188
890-6116-19	BH12B	Total/NA	Solid	8021B	73188
890-6116-20	BH012C	Total/NA	Solid	8021B	73188
MB 880-73188/5-A	Method Blank	Total/NA	Solid	8021B	73188
LCS 880-73188/1-A	Lab Control Sample	Total/NA	Solid	8021B	73188
LCSD 880-73188/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	73188

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## QC Association Summary

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

## GC VOA (Continued)

## Analysis Batch: 73398 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-1 MS	BH08	Total/NA	Solid	8021B	73188
890-6116-1 MSD	BH08	Total/NA	Solid	8021B	73188

## Analysis Batch: 73574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-1	BH08	Total/NA	Solid	Total BTEX	
890-6116-2	BH08A	Total/NA	Solid	Total BTEX	
890-6116-3	BH08B	Total/NA	Solid	Total BTEX	
890-6116-4	BH08C	Total/NA	Solid	Total BTEX	
890-6116-5	BH09	Total/NA	Solid	Total BTEX	
890-6116-6	BH09A	Total/NA	Solid	Total BTEX	
890-6116-7	BH09B	Total/NA	Solid	Total BTEX	
890-6116-8	BH09C	Total/NA	Solid	Total BTEX	
890-6116-9	BH10	Total/NA	Solid	Total BTEX	
890-6116-10	BH10A	Total/NA	Solid	Total BTEX	
890-6116-11	BH10B	Total/NA	Solid	Total BTEX	
890-6116-12	BH10C	Total/NA	Solid	Total BTEX	
890-6116-13	BH11	Total/NA	Solid	Total BTEX	
890-6116-14	BH11A	Total/NA	Solid	Total BTEX	
890-6116-15	BH11B	Total/NA	Solid	Total BTEX	
890-6116-16	BH11C	Total/NA	Solid	Total BTEX	
890-6116-17	BH12	Total/NA	Solid	Total BTEX	
890-6116-18	BH12A	Total/NA	Solid	Total BTEX	
890-6116-19	BH12B	Total/NA	Solid	Total BTEX	
890-6116-20	BH012C	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 72672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-1	BH08	Total/NA	Solid	8015NM Prep	
890-6116-2	BH08A	Total/NA	Solid	8015NM Prep	
890-6116-3	BH08B	Total/NA	Solid	8015NM Prep	
890-6116-4	BH08C	Total/NA	Solid	8015NM Prep	
890-6116-5	BH09	Total/NA	Solid	8015NM Prep	
890-6116-6	BH09A	Total/NA	Solid	8015NM Prep	
890-6116-7	BH09B	Total/NA	Solid	8015NM Prep	
890-6116-8	BH09C	Total/NA	Solid	8015NM Prep	
890-6116-9	BH10	Total/NA	Solid	8015NM Prep	
890-6116-10	BH10A	Total/NA	Solid	8015NM Prep	
890-6116-11	BH10B	Total/NA	Solid	8015NM Prep	
890-6116-12	BH10C	Total/NA	Solid	8015NM Prep	
890-6116-13	BH11	Total/NA	Solid	8015NM Prep	
890-6116-14	BH11A	Total/NA	Solid	8015NM Prep	
890-6116-15	BH11B	Total/NA	Solid	8015NM Prep	
890-6116-16	BH11C	Total/NA	Solid	8015NM Prep	
890-6116-17	BH12	Total/NA	Solid	8015NM Prep	
890-6116-18	BH12A	Total/NA	Solid	8015NM Prep	
890-6116-19	BH12B	Total/NA	Solid	8015NM Prep	
890-6116-20	BH012C	Total/NA	Solid	8015NM Prep	
MB 880-72672/1-A	Method Blank	Total/NA	Solid	8015NM Prep	

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## QC Association Summary

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

## GC Semi VOA (Continued)

## Prep Batch: 72672 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-72672/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-72672/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6116-1 MS	BH08	Total/NA	Solid	8015NM Prep	
890-6116-1 MSD	BH08	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 72991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-1	BH08	Total/NA	Solid	8015B NM	72672
890-6116-2	BH08A	Total/NA	Solid	8015B NM	72672
890-6116-3	BH08B	Total/NA	Solid	8015B NM	72672
890-6116-4	BH08C	Total/NA	Solid	8015B NM	72672
890-6116-5	BH09	Total/NA	Solid	8015B NM	72672
890-6116-6	BH09A	Total/NA	Solid	8015B NM	72672
890-6116-7	BH09B	Total/NA	Solid	8015B NM	72672
890-6116-8	BH09C	Total/NA	Solid	8015B NM	72672
890-6116-9	BH10	Total/NA	Solid	8015B NM	72672
890-6116-10	BH10A	Total/NA	Solid	8015B NM	72672
890-6116-11	BH10B	Total/NA	Solid	8015B NM	72672
890-6116-12	BH10C	Total/NA	Solid	8015B NM	72672
890-6116-13	BH11	Total/NA	Solid	8015B NM	72672
890-6116-14	BH11A	Total/NA	Solid	8015B NM	72672
890-6116-15	BH11B	Total/NA	Solid	8015B NM	72672
890-6116-16	BH11C	Total/NA	Solid	8015B NM	72672
890-6116-17	BH12	Total/NA	Solid	8015B NM	72672
890-6116-18	BH12A	Total/NA	Solid	8015B NM	72672
890-6116-19	BH12B	Total/NA	Solid	8015B NM	72672
890-6116-20	BH012C	Total/NA	Solid	8015B NM	72672
MB 880-72672/1-A	Method Blank	Total/NA	Solid	8015B NM	72672
LCS 880-72672/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	72672
LCSD 880-72672/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	72672
890-6116-1 MS	BH08	Total/NA	Solid	8015B NM	72672
890-6116-1 MSD	BH08	Total/NA	Solid	8015B NM	72672

## Analysis Batch: 73134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-1	BH08	Total/NA	Solid	8015 NM	
890-6116-2	BH08A	Total/NA	Solid	8015 NM	
890-6116-3	BH08B	Total/NA	Solid	8015 NM	
890-6116-4	BH08C	Total/NA	Solid	8015 NM	
890-6116-5	BH09	Total/NA	Solid	8015 NM	
890-6116-6	BH09A	Total/NA	Solid	8015 NM	
890-6116-7	BH09B	Total/NA	Solid	8015 NM	
890-6116-8	BH09C	Total/NA	Solid	8015 NM	
890-6116-9	BH10	Total/NA	Solid	8015 NM	
890-6116-10	BH10A	Total/NA	Solid	8015 NM	
890-6116-11	BH10B	Total/NA	Solid	8015 NM	
890-6116-12	BH10C	Total/NA	Solid	8015 NM	
890-6116-13	BH11	Total/NA	Solid	8015 NM	
890-6116-14	BH11A	Total/NA	Solid	8015 NM	
890-6116-15	BH11B	Total/NA	Solid	8015 NM	
890-6116-16	BH11C	Total/NA	Solid	8015 NM	

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## QC Association Summary

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

## GC Semi VOA (Continued)

## Analysis Batch: 73134 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-17	BH12	Total/NA	Solid	8015 NM	
890-6116-18	BH12A	Total/NA	Solid	8015 NM	
890-6116-19	BH12B	Total/NA	Solid	8015 NM	
890-6116-20	BH012C	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 72641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-1	BH08	Soluble	Solid	DI Leach	
890-6116-2	BH08A	Soluble	Solid	DI Leach	
890-6116-3	BH08B	Soluble	Solid	DI Leach	
890-6116-4	BH08C	Soluble	Solid	DI Leach	
890-6116-5	BH09	Soluble	Solid	DI Leach	
890-6116-6	BH09A	Soluble	Solid	DI Leach	
890-6116-7	BH09B	Soluble	Solid	DI Leach	
890-6116-8	BH09C	Soluble	Solid	DI Leach	
890-6116-9	BH10	Soluble	Solid	DI Leach	
890-6116-10	BH10A	Soluble	Solid	DI Leach	
890-6116-12	BH10C	Soluble	Solid	DI Leach	
890-6116-13	BH11	Soluble	Solid	DI Leach	
890-6116-14	BH11A	Soluble	Solid	DI Leach	
890-6116-16	BH11C	Soluble	Solid	DI Leach	
890-6116-17	BH12	Soluble	Solid	DI Leach	
890-6116-18	BH12A	Soluble	Solid	DI Leach	
890-6116-19	BH12B	Soluble	Solid	DI Leach	
890-6116-20	BH012C	Soluble	Solid	DI Leach	
MB 880-72641/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-72641/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-72641/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6116-1 MS	BH08	Soluble	Solid	DI Leach	
890-6116-1 MSD	BH08	Soluble	Solid	DI Leach	
890-6116-A-11-B MS	890-6116-A-11-B MS	Soluble	Solid	DI Leach	
890-6116-A-11-C MSD	890-6116-A-11-C MSD	Soluble	Solid	DI Leach	

## Analysis Batch: 72667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-1	BH08	Soluble	Solid	300.0	72641
890-6116-2	BH08A	Soluble	Solid	300.0	72641
890-6116-3	BH08B	Soluble	Solid	300.0	72641
890-6116-4	BH08C	Soluble	Solid	300.0	72641
890-6116-5	BH09	Soluble	Solid	300.0	72641
890-6116-6	BH09A	Soluble	Solid	300.0	72641
890-6116-7	BH09B	Soluble	Solid	300.0	72641
890-6116-8	BH09C	Soluble	Solid	300.0	72641
890-6116-9	BH10	Soluble	Solid	300.0	72641
890-6116-10	BH10A	Soluble	Solid	300.0	72641
890-6116-12	BH10C	Soluble	Solid	300.0	72641
890-6116-13	BH11	Soluble	Solid	300.0	72641
890-6116-14	BH11A	Soluble	Solid	300.0	72641
890-6116-16	BH11C	Soluble	Solid	300.0	72641

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## QC Association Summary

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

## HPLC/IC (Continued)

## Analysis Batch: 72667 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-17	BH12	Soluble	Solid	300.0	72641
890-6116-18	BH12A	Soluble	Solid	300.0	72641
890-6116-19	BH12B	Soluble	Solid	300.0	72641
890-6116-20	BH012C	Soluble	Solid	300.0	72641
MB 880-72641/1-A	Method Blank	Soluble	Solid	300.0	72641
LCS 880-72641/2-A	Lab Control Sample	Soluble	Solid	300.0	72641
LCSD 880-72641/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	72641
890-6116-1 MS	BH08	Soluble	Solid	300.0	72641
890-6116-1 MSD	BH08	Soluble	Solid	300.0	72641
890-6116-A-11-B MS	890-6116-A-11-B MS	Soluble	Solid	300.0	72641
890-6116-A-11-C MSD	890-6116-A-11-C MSD	Soluble	Solid	300.0	72641

## Leach Batch: 73613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-11	BH10B	Soluble	Solid	DI Leach	
890-6116-15	BH11B	Soluble	Solid	DI Leach	
MB 880-73613/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-73613/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-73613/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-39546-A-3-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-39546-A-3-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 73695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6116-11	BH10B	Soluble	Solid	300.0	73613
890-6116-15	BH11B	Soluble	Solid	300.0	73613
MB 880-73613/1-A	Method Blank	Soluble	Solid	300.0	73613
LCS 880-73613/2-A	Lab Control Sample	Soluble	Solid	300.0	73613
LCSD 880-73613/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	73613
880-39546-A-3-B MS	Matrix Spike	Soluble	Solid	300.0	73613
880-39546-A-3-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	73613

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## Lab Chronicle

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

**Client Sample ID: BH08****Lab Sample ID: 890-6116-1****Date Collected: 02/06/24 12:15****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/16/24 20:29	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/16/24 20:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 09:56	SM	EET MID
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 09:56	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 19:44	CH	EET MID

**Client Sample ID: BH08A****Lab Sample ID: 890-6116-2****Date Collected: 02/06/24 12:45****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/16/24 20:50	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/16/24 20:50	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 11:04	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 11:04	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 19:57	CH	EET MID

**Client Sample ID: BH08B****Lab Sample ID: 890-6116-3****Date Collected: 02/06/24 12:40****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/16/24 21:10	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/16/24 21:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 11:25	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 11:25	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 20:02	CH	EET MID

**Client Sample ID: BH08C****Lab Sample ID: 890-6116-4****Date Collected: 02/06/24 12:30****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/16/24 21:31	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/16/24 21:31	SM	EET MID

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## Lab Chronicle

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

**Client Sample ID: BH08C****Date Collected: 02/06/24 12:30****Date Received: 02/06/24 14:49****Lab Sample ID: 890-6116-4****Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			73134	02/13/24 11:46	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 11:46	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 20:07	CH	EET MID

**Client Sample ID: BH09****Date Collected: 02/06/24 09:10****Date Received: 02/06/24 14:49****Lab Sample ID: 890-6116-5****Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/16/24 21:51	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/16/24 21:51	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 12:08	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 12:08	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 20:12	CH	EET MID

**Client Sample ID: BH09A****Date Collected: 02/06/24 09:15****Date Received: 02/06/24 14:49****Lab Sample ID: 890-6116-6****Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/16/24 22:12	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/16/24 22:12	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 12:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 12:30	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 20:25	CH	EET MID

**Client Sample ID: BH09B****Date Collected: 02/06/24 09:20****Date Received: 02/06/24 14:49****Lab Sample ID: 890-6116-7****Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/16/24 22:32	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/16/24 22:32	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 12:52	SM	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 12:52	SM	EET MID

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## Lab Chronicle

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

**Client Sample ID: BH09B****Lab Sample ID: 890-6116-7****Date Collected: 02/06/24 09:20****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.97 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 20:30	CH	EET MID

**Client Sample ID: BH09C****Lab Sample ID: 890-6116-8****Date Collected: 02/06/24 09:25****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/16/24 22:53	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/16/24 22:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 13:14	SM	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 13:14	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 20:35	CH	EET MID

**Client Sample ID: BH10****Lab Sample ID: 890-6116-9****Date Collected: 02/06/24 09:50****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/16/24 23:14	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/16/24 23:14	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 13:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 13:36	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 20:39	CH	EET MID

**Client Sample ID: BH10A****Lab Sample ID: 890-6116-10****Date Collected: 02/06/24 09:55****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/16/24 23:34	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/16/24 23:34	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 13:58	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 13:58	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 20:44	CH	EET MID

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## Lab Chronicle

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

**Client Sample ID: BH10B****Lab Sample ID: 890-6116-11****Date Collected: 02/06/24 10:00****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/17/24 00:57	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/17/24 00:57	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 14:41	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 14:41	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	73613	02/21/24 11:30	SA	EET MID
Soluble	Analysis	300.0		1	0 mL	1.0 mL	73695	02/21/24 12:35	CH	EET MID

**Client Sample ID: BH10C****Lab Sample ID: 890-6116-12****Date Collected: 02/06/24 10:05****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/17/24 01:18	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/17/24 01:18	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 15:03	SM	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 15:03	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 21:02	CH	EET MID

**Client Sample ID: BH11****Lab Sample ID: 890-6116-13****Date Collected: 02/06/24 10:30****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/17/24 01:38	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/17/24 01:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 15:26	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 15:26	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 21:07	CH	EET MID

**Client Sample ID: BH11A****Lab Sample ID: 890-6116-14****Date Collected: 02/06/24 10:35****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/17/24 01:59	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/17/24 01:59	SM	EET MID

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## Lab Chronicle

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

**Client Sample ID: BH11A****Date Collected: 02/06/24 10:35****Date Received: 02/06/24 14:49****Lab Sample ID: 890-6116-14****Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			73134	02/13/24 15:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 15:48	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 21:21	CH	EET MID

**Client Sample ID: BH11B****Date Collected: 02/06/24 10:40****Date Received: 02/06/24 14:49****Lab Sample ID: 890-6116-15****Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/17/24 02:20	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/17/24 02:20	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 16:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 16:10	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	73613	02/21/24 11:30	SA	EET MID
Soluble	Analysis	300.0		1	0 mL	1.0 mL	73695	02/21/24 12:42	CH	EET MID

**Client Sample ID: BH11C****Date Collected: 02/06/24 10:45****Date Received: 02/06/24 14:49****Lab Sample ID: 890-6116-16****Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/17/24 02:40	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/17/24 02:40	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 16:32	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 16:32	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		5			72667	02/08/24 21:30	CH	EET MID

**Client Sample ID: BH12****Date Collected: 02/06/24 12:00****Date Received: 02/06/24 14:49****Lab Sample ID: 890-6116-17****Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/17/24 03:01	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/17/24 03:01	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 16:54	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 16:54	SM	EET MID

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## Lab Chronicle

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

**Client Sample ID: BH12****Lab Sample ID: 890-6116-17****Date Collected: 02/06/24 12:00****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.02 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 21:35	CH	EET MID

**Client Sample ID: BH12A****Lab Sample ID: 890-6116-18****Date Collected: 02/06/24 12:05****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/17/24 03:22	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/17/24 03:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 17:16	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 17:16	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 21:40	CH	EET MID

**Client Sample ID: BH12B****Lab Sample ID: 890-6116-19****Date Collected: 02/06/24 12:10****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/17/24 03:42	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/17/24 03:42	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 17:38	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 17:38	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 21:44	CH	EET MID

**Client Sample ID: BH012C****Lab Sample ID: 890-6116-20****Date Collected: 02/06/24 12:35****Matrix: Solid****Date Received: 02/06/24 14:49**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	73188	02/14/24 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73398	02/17/24 04:03	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73574	02/17/24 04:03	SM	EET MID
Total/NA	Analysis	8015 NM		1			73134	02/13/24 17:59	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	72672	02/08/24 15:17	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72991	02/13/24 17:59	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	72641	02/08/24 11:39	SA	EET MID
Soluble	Analysis	300.0		1			72667	02/08/24 21:49	CH	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

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

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Accreditation/Certification Summary

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

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

**Protocol References:**  
ASTM = ASTM International  
EPA = US Environmental Protection Agency  
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

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

## Sample Summary

Client: Ensolum  
Project/Site: PLU Delaware CS WD

Job ID: 890-6116-1  
SDG: 03C1558232

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
890-6116-1	BH08	Solid	02/06/24 12:15	02/06/24 14:49
890-6116-2	BH08A	Solid	02/06/24 12:45	02/06/24 14:49
890-6116-3	BH08B	Solid	02/06/24 12:40	02/06/24 14:49
890-6116-4	BH08C	Solid	02/06/24 12:30	02/06/24 14:49
890-6116-5	BH09	Solid	02/06/24 09:10	02/06/24 14:49
890-6116-6	BH09A	Solid	02/06/24 09:15	02/06/24 14:49
890-6116-7	BH09B	Solid	02/06/24 09:20	02/06/24 14:49
890-6116-8	BH09C	Solid	02/06/24 09:25	02/06/24 14:49
890-6116-9	BH10	Solid	02/06/24 09:50	02/06/24 14:49
890-6116-10	BH10A	Solid	02/06/24 09:55	02/06/24 14:49
890-6116-11	BH10B	Solid	02/06/24 10:00	02/06/24 14:49
890-6116-12	BH10C	Solid	02/06/24 10:05	02/06/24 14:49
890-6116-13	BH11	Solid	02/06/24 10:30	02/06/24 14:49
890-6116-14	BH11A	Solid	02/06/24 10:35	02/06/24 14:49
890-6116-15	BH11B	Solid	02/06/24 10:40	02/06/24 14:49
890-6116-16	BH11C	Solid	02/06/24 10:45	02/06/24 14:49
890-6116-17	BH12	Solid	02/06/24 12:00	02/06/24 14:49
890-6116-18	BH12A	Solid	02/06/24 12:05	02/06/24 14:49
890-6116-19	BH12B	Solid	02/06/24 12:10	02/06/24 14:49
890-6116-20	BH012C	Solid	02/06/24 12:35	02/06/24 14:49

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300  
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334  
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Environment Testing  
Xenco

Work Order No:

www.xenco.com Page 1 of 2

Call



Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E Grete St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	(337) 251-8301	Email:	Garrett.Green@xconnmobil.com

Project Name:	Ply Delaware CSWD	Turn Around	
Project Number:	03C1558237	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	
Project Location:	32-248232-103.9208	Due Date:	15 days
Sampler's Name:	Mariah O'Dell	TAT starts the day received by the lab, if received by 4:30pm	
P.O. #:			

SAMPLE RECEIPT		Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:			
Cooler Custody Seals:	Yes No	Correction Factor:			
Sample Custody Seals:	Yes No	Temperature Reading:			
Total Containers:		Corrected Temperature:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	Preservative Codes
BH08	S	2/10/24	9:10	1'	G	1	X CHlorides	None: NO DI Water: H <sub>2</sub> O
BH08A			9:15	2'			X TPH	Cool: Cool MeOH: Me
BH08B			9:20	3'			X BTEX	HCL: HC HNO <sub>3</sub> : HN
BH08C			9:25	4'				H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na
BH09			9:50	1'				H <sub>3</sub> PO <sub>4</sub> : HP NaHSO <sub>4</sub> : NABIS
BH09A			9:55	2'				Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>
BH09B			10:00	3'				Zn Acetate+NaOH: Zn
BH09C			10:05	4'				NaOH+Ascorbic Acid: SAPC
BH10			10:30	1'				
BH10A			10:35	2'				

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM	Texas 11	Al Sb As Ba Be B Cd Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	TCLP / SPLP 6010 : 8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	Hg: 1631 / 245.1 / 7470 / 7471	

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>MA O'Dell</i>	<i>William</i>	11:44 2/6			

Revised Date: 08/25/2020 Rev. 2020.2







Environment Testing  
Xenco

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300  
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334  
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No:

www.xenco.com Page 2 of 2

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	ENSOLUM, LLC	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Greene St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	(337) 251-8307	Email:	Garrett.Green@ExxonMobil.com

Project Name:	PLU Delaware C SMD	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush
Project Number:	03C1558737	Due Date:	5 days
Project Location:	32.248232, -103.020000	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Mariana O'Dell		
P.O. #:			

SAMPLE RECEIPT		Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:			
Cooler Custody Seals:	Yes No N/A	Correction Factor:			
Sample Custody Seals:	Yes No N/A	Temperature Reading:			
Total Containers:		Corrected Temperature:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	Pres. Code	ANALYSIS REQUEST	Preservative Codes
BH10B	S	2/10/24	10:40	3'	6	1	Chlorides			None: NO DI Water: H <sub>2</sub> O Cool: Cool MeOH: Me HCL: HC HNO <sub>3</sub> : HN H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : HP NaHSO <sub>4</sub> : NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub> Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SACP
BH10C			10:45	4'			TPH			
BH11			12:00	1'			BTEX			
BH11A			12:05	2'						
BH11B			12:10	3'						
BH11C			12:15	4'						
BH12			12:30	1'						
BH12A			12:35	2'						
BH12B			12:40	3'						
BH12C			12:45	4'						

Total	200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471			

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>			1/4/24 1:12	

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-6116-1

SDG Number: 03C1558232

Login Number: 6116  
List Number: 1  
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-6116-1

SDG Number: 03C1558232

Login Number: 6116

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 02/08/24 11:21 AM

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





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February 10, 2025

KATHERINE KHAN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU DELAWARE C SWD

Enclosed are the results of analyses for samples received by the laboratory on 02/06/25 13:18.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
 KATHERINE KHAN  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received: 02/06/2025  
 Reported: 02/10/2025  
 Project Name: PLU DELAWARE C SWD  
 Project Number: 03C1558237  
 Project Location: XTO 32.248866-103.919096

Sampling Date: 02/04/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SS 07 1' (H250727-01)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/06/2025	ND	2.33	117	2.00	3.69	
Toluene*	<0.050	0.050	02/06/2025	ND	2.40	120	2.00	6.58	
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.36	118	2.00	8.05	
Total Xylenes*	<0.150	0.150	02/06/2025	ND	7.25	121	6.00	7.31	
Total BTEX	<0.300	0.300	02/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 122 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	800	16.0	02/07/2025	ND	480	120	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	202	101	200	0.710	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	206	103	200	0.748	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 95.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.3 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/04/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 07A 2' (H250727-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	2.33	117	2.00	3.69		
Toluene*	<0.050	0.050	02/06/2025	ND	2.40	120	2.00	6.58		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.36	118	2.00	8.05		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	7.25	121	6.00	7.31		
Total BTEx	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	512	16.0	02/07/2025	ND	480	120	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	202	101	200	0.710	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	206	103	200	0.748	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 93.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/04/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 07B 4' (H250727-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	2.33	117	2.00	3.69		
Toluene*	<0.050	0.050	02/06/2025	ND	2.40	120	2.00	6.58		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.36	118	2.00	8.05		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	7.25	121	6.00	7.31		
Total BTEX	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	688	16.0	02/07/2025	ND	480	120	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	202	101	200	0.710	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	206	103	200	0.748	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 88.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/04/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 20 1' (H250727-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	2.33	117	2.00	3.69		
Toluene*	<0.050	0.050	02/06/2025	ND	2.40	120	2.00	6.58		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.36	118	2.00	8.05		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	7.25	121	6.00	7.31		
Total BTEx	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 120 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1200	16.0	02/07/2025	ND	480	120	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	202	101	200	0.710	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	206	103	200	0.748	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 96.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/04/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 20A 2' (H250727-05)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	2.33	117	2.00	3.69		
Toluene*	<0.050	0.050	02/06/2025	ND	2.40	120	2.00	6.58		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.36	118	2.00	8.05		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	7.25	121	6.00	7.31		
Total BTEX	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1150	16.0	02/07/2025	ND	480	120	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	202	101	200	0.710	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	206	103	200	0.748	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 91.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/04/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 20B 4' (H250727-06)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	2.33	117	2.00	3.69		
Toluene*	<0.050	0.050	02/06/2025	ND	2.40	120	2.00	6.58		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.36	118	2.00	8.05		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	7.25	121	6.00	7.31		
Total BTEX	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 122 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	688	16.0	02/07/2025	ND	480	120	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	202	101	200	0.710	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	206	103	200	0.748	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 91.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/05/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 19 1' (H250727-07)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	1.78	89.1	2.00	0.788		
Toluene*	<0.050	0.050	02/06/2025	ND	1.99	99.5	2.00	1.60		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.00	99.8	2.00	1.29		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	6.18	103	6.00	0.986		
Total BTX	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	880	16.0	02/07/2025	ND	480	120	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	202	101	200	0.710	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	206	103	200	0.748	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 81.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 75.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/05/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 19A 2' (H250727-08)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/06/2025	ND	1.78	89.1	2.00	0.788	
Toluene*	<0.050	0.050	02/06/2025	ND	1.99	99.5	2.00	1.60	
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.00	99.8	2.00	1.29	
Total Xylenes*	<0.150	0.150	02/06/2025	ND	6.18	103	6.00	0.986	
Total BTEX	<0.300	0.300	02/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	02/07/2025	ND	480	120	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	202	101	200	0.710	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	206	103	200	0.748	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 97.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/05/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 19B 4' (H250727-09)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	1.78	89.1	2.00	0.788		
Toluene*	<0.050	0.050	02/06/2025	ND	1.99	99.5	2.00	1.60		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.00	99.8	2.00	1.29		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	6.18	103	6.00	0.986		
Total BTEX	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	02/07/2025	ND	480	120	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	202	101	200	0.710	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	206	103	200	0.748	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 95.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.4 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/05/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 17 1' (H250727-10)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	1.78	89.1	2.00	0.788		
Toluene*	<0.050	0.050	02/06/2025	ND	1.99	99.5	2.00	1.60		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.00	99.8	2.00	1.29		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	6.18	103	6.00	0.986		
Total BTEX	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	02/07/2025	ND	480	120	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	214	107	200	0.467	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	199	99.7	200	1.27	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 93.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.3 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/05/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 17A 3' (H250727-11)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	1.78	89.1	2.00	0.788		
Toluene*	<0.050	0.050	02/06/2025	ND	1.99	99.5	2.00	1.60		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.00	99.8	2.00	1.29		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	6.18	103	6.00	0.986		
Total BTEX	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1700	16.0	02/07/2025	ND	480	120	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	214	107	200	0.467	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	199	99.7	200	1.27	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 93.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/05/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 17B 4' (H250727-12)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	1.78	89.1	2.00	0.788		
Toluene*	<0.050	0.050	02/06/2025	ND	1.99	99.5	2.00	1.60		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.00	99.8	2.00	1.29		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	6.18	103	6.00	0.986		
Total BTEX	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2080	16.0	02/07/2025	ND	448	112	400	3.64	QM-07	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	214	107	200	0.467	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	199	99.7	200	1.27	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 87.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/05/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 21 1' (H250727-13)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	1.78	89.1	2.00	0.788		
Toluene*	<0.050	0.050	02/06/2025	ND	1.99	99.5	2.00	1.60		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.00	99.8	2.00	1.29		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	6.18	103	6.00	0.986		
Total BTEX	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	02/07/2025	ND	448	112	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	214	107	200	0.467	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	199	99.7	200	1.27	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 82.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 82.9 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/05/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 21A 2' (H250727-14)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/06/2025	ND	1.78	89.1	2.00	0.788		
Toluene*	<0.050	0.050	02/06/2025	ND	1.99	99.5	2.00	1.60		
Ethylbenzene*	<0.050	0.050	02/06/2025	ND	2.00	99.8	2.00	1.29		
Total Xylenes*	<0.150	0.150	02/06/2025	ND	6.18	103	6.00	0.986		
Total BTEX	<0.300	0.300	02/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	02/07/2025	ND	448	112	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	214	107	200	0.467	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	199	99.7	200	1.27	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 91.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/06/2025  
Reported: 02/10/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/05/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 21B 4' (H250727-15)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/07/2025	ND	1.94	97.2	2.00	4.74		
Toluene*	<0.050	0.050	02/07/2025	ND	2.03	102	2.00	4.48		
Ethylbenzene*	<0.050	0.050	02/07/2025	ND	1.93	96.7	2.00	5.39		
Total Xylenes*	<0.150	0.150	02/07/2025	ND	5.68	94.6	6.00	5.65		
Total BTEx	<0.300	0.300	02/07/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.8 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	592	16.0	02/07/2025	ND	448	112	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2025	ND	214	107	200	0.467	
DRO >C10-C28*	<10.0	10.0	02/07/2025	ND	199	99.7	200	1.27	
EXT DRO >C28-C36	<10.0	10.0	02/07/2025	ND					

Surrogate: 1-Chlorooctane 83.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 82.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager

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### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

142

Company Name: Ensolum, LLC

Project Manager: Katherine Kahn

Address: 3122 National Parks Hwy

City: Carlsbad

State: NM Zip: 88220

Phone #: 503 319 0604

Fax #:

Project #: 6301556237

Project Owner: XTO

Project Name: PLU Delaware C SMT

Project Location: 32.248866, -103.919096

Sampler Name: Joshua Boxley

BILL TO

P.O. #:

Company: XTO Energy Inc

Attn: Colton Brown

Address: 3104 E Green St

City: Carlsbad

State: NM Zip: 88220

Phone #:

Fax #:

ANALYSIS REQUEST

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	Chlorides	TPH	BTEX
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H50737	S507	1		1											
2	S507A	2		1											
3	S507B	4		1											
4	PH20	1		1											
5	PH20A	2		1											
6	PH20B	4		1											

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Relinquished By:

Date: 2/25/25

Received By:

Date: 2/25/25

Verbal Result: ☐ Yes ☐ No Add'l Phone #:

All Results are emailed. Please provide Email address:

Ensolum.com, TMorrissey@ensolum.com, KThomason@ensolum.com

Relinquished By:

Date:

Received By:

Date:

REMARKS: Incident: 11/18/24, 8179, WJAM/193454739, WJAM/1231129593, NJAMW-123456789, NJAMW/123456789

Cost Center: 1000021001

Standard

Delivered By: (Circle One)

Observed Temp. °C

Sample Condition

CHECKED BY:

Turnaround Time:

Standard

Bacteria (only)

Sample Condition

Sampler - UPS - Bus - Other:

Corrected Temp. °C

Sample Condition

CHECKED BY:

Thermometer ID:

Standard

Bacteria (only)

Sample Condition





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(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2 of 2

Company Name: Ensolum, LLC		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>									
Project Manager: Katherine Kahn		P.O. #:											
Address: 3122 National Parks Hwy		Company: XTO Energy Inc											
City: Carlsbad		Attn: Colton Brown											
State: NM Zip: 88220		Address: 3104 E Green St											
Phone #: 505 319 9604 Fax #:		City: Carlsbad											
Project #: 03C1556237 Project Owner: XTO		State: NM Zip: 88220											
Project Location: 32.248806, -103.919096		Phone #:											
Sampler Name: Joshua Boxley		Fax #:											
FOR LAB USE ONLY													
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX				PRESERV.	SAMPLING			
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :
H50787	PH19	1	✓	1									
7	PH19A	2											
8	PH19B	4											
9	PH17	1											
10	PH17A	3											
11	PH17B	4											
12	PH21	1											
13	PH21A	2											
14	PH21B	4											
15	PH21C	4											
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Relinquished By:	Date: 2/10/25	Received By:	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:										
Relinquished By:	Time: 1:58	Received By:	All Results are emailed. Please provide Email address: <a href="mailto:K@Ensolum.com">K@Ensolum.com</a> , <a href="mailto:TMorrissey@ensolum.com">TMorrissey@ensolum.com</a> , <a href="mailto:KThomason@ensolum.com">KThomason@ensolum.com</a>										
REMARKS: Incident: 4/14/11 8:31 PM, WJAW/19345730, WJAW 1531129595, NJMW 122842808, Cost Center: 1080821001, APT: 30-015-31412, NJMW 1228429248													
Delivered By: (Circle One)	Observed Temp. °C: 8.4	Sample Condition	CHECKED BY: (initials)										
Sampler - UPS - Bus - Other:	Corrected Temp. °C: 8.7	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Thermometer ID: 41108, Correction Factor: 0.08										

FORM-006 R 3.2 10/07/21

+ Cardinal cannot accept verbal changes. Please email changes to [celey.keene@cardinallabsnm.com](mailto:celey.keene@cardinallabsnm.com)



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 13, 2025

KATHERINE KHAN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU DELAWARE C SWD

Enclosed are the results of analyses for samples received by the laboratory on 02/11/25 13:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BH 17 1' (H250820-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188	
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16	
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17	
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34	
Total BTX	<0.300	0.300	02/12/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	288	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	204	102	200	6.00	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	202	101	200	8.72	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 94.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 25 1' (H250820-02)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTX	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	416	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	204	102	200	6.00	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	202	101	200	8.72	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 95.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 25A 3' (H250820-03)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTX	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	656	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2025	ND	204	102	200	6.00	
DRO >C10-C28*	<10.0	10.0	02/12/2025	ND	202	101	200	8.72	
EXT DRO >C28-C36	<10.0	10.0	02/12/2025	ND					

Surrogate: 1-Chlorooctane 93.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BH 17A 3' (H250820-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTEx	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2025	ND	204	102	200	6.00	
DRO >C10-C28*	<10.0	10.0	02/12/2025	ND	202	101	200	8.72	
EXT DRO >C28-C36	<10.0	10.0	02/12/2025	ND					

Surrogate: 1-Chlorooctane 94.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.4 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BH 17B 4' (H250820-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTEx	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2025	ND	204	102	200	6.00	
DRO >C10-C28*	<10.0	10.0	02/12/2025	ND	202	101	200	8.72	
EXT DRO >C28-C36	<10.0	10.0	02/12/2025	ND					

Surrogate: 1-Chlorooctane 97.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 26 1' (H250820-06)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTEx	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2025	ND	204	102	200	6.00	
DRO >C10-C28*	<10.0	10.0	02/12/2025	ND	202	101	200	8.72	
EXT DRO >C28-C36	<10.0	10.0	02/12/2025	ND					

Surrogate: 1-Chlorooctane 99.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 26A 3' (H250820-07)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTX	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	912	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/12/2025	ND	204	102	200	6.00	
DRO >C10-C28*	<10.0	10.0	02/12/2025	ND	202	101	200	8.72	
EXT DRO >C28-C36	<10.0	10.0	02/12/2025	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 103 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 27 1' (H250820-08)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTEx	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 98.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 27A 3' (H250820-09)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTEX	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	288	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 27B 4' (H250820-10)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTX	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	464	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 96.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SS 02 0.5' (H250820-11)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTX	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	02/12/2025	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 99.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 103 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SS 02A 1' (H250820-12)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTEx	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 86.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.5 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SS 02B 4' (H250820-13)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTEx	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	336	16.0	02/12/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SS 01 0.5' (H250820-14)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTX	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6080	16.0	02/12/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	243	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	126	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 179 % 48.2-134

Surrogate: 1-Chlorooctadecane 146 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SS 12 0.5' (H250820-15)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188	
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16	
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17	
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34	
Total BTEx	<0.300	0.300	02/12/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/12/2025	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 85.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BH 15 1' (H250820-16)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTEx	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	02/12/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 98.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BH 15A 2' (H250820-17)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTX	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	02/12/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 98.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.2 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BH 15B 4' (H250820-18)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTEx	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	720	16.0	02/12/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 23 1' (H250820-19)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTX	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	02/12/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 97.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.9 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 23A 2' (H250820-20)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	2.02	101	2.00	0.188		
Toluene*	<0.050	0.050	02/12/2025	ND	2.18	109	2.00	2.16		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.31	115	2.00	5.17		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	6.92	115	6.00	7.34		
Total BTX	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	688	16.0	02/12/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 95.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.0 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/11/2025  
Reported: 02/13/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/06/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 23B 3' (H250820-21)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2025	ND	1.98	99.1	2.00	8.83		
Toluene*	<0.050	0.050	02/12/2025	ND	2.17	109	2.00	14.1		
Ethylbenzene*	<0.050	0.050	02/12/2025	ND	2.32	116	2.00	17.4		
Total Xylenes*	<0.150	0.150	02/12/2025	ND	7.12	119	6.00	17.2		
Total BTX	<0.300	0.300	02/12/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	848	16.0	02/12/2025	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/11/2025	ND	182	90.9	200	1.82	
DRO >C10-C28*	<10.0	10.0	02/11/2025	ND	185	92.4	200	6.22	
EXT DRO >C28-C36	<10.0	10.0	02/11/2025	ND					

Surrogate: 1-Chlorooctane 88.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.1 % 49.1-148

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\*=Accredited Analyte

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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-04	The RPD for the BS/BSD was outside of historical limits.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

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Celey D. Keene, Lab Director/Quality Manager





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Page 24 of 26





101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2 of 3

Company Name: Ensolum, LLC				<b>BILL TO</b>				ANALYSIS REQUEST				
Project Manager: Katherine Kahn				P.O. #:								
Address: 3122 National Parks Hwy				Company: XTO Energy Inc								
City: Carlsbad				Attn: Colton Brown								
Phone #: 305 319 9604				Address: 3104 E Green St								
State: NM Zip: 88220												
Project #: 03C1558237				City: Carlsbad								
Project Owner: XTO				State: NM Zip: 88220								
Project Location: 52.248866, -103.91996				Phone #:								
Sampler Name: Joshua Boxley				Fax #:								
FOR LAB USE ONLY												
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX			PRESERV	SAMPLING	Chlorides	TPH	BTEX
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :		
					ACID/BASE:	ICE / COOL	OTHER :					
					DATE	TIME						
4250820	PH26	1	G	1	2.6.25	0950	X	X	X			
6	PH26A	3	G	1								
7	PH27	1	G	1								
8	PH27A	3	G	1								
9	PH27B	4	G	1								
10	PH27C	0.5	G	1								
11	SS02	1	G	1								
12	SS02A	4	G	1								
13	SS02B	0.5	G	1								
14	SS01	0.5	G	1								
15	SS12	0.5	G	1								
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Relinquished By:	Date: 4-11-25	Received By:	Date: 4-11-25	Time: 1305	Time: 1305	Time: 1305	Time: 1305	Time: 1305	Time: 1305	Time: 1305	Time: 1305	Time: 1305
Relinquished By:	Date:	Received By:	Date:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:
Delivered By: (Circle One)	Observed Temp. °C	Corrected Temp. °C	Sample Condition	Cool Intact	Checked By: (Initials)	Turnaround Time:	Standard	Bacteria (only)	Sample Condition	Observed Temp. °C	Corrected Temp. °C	Thermometer ID
Sampler - UPS - Bus - Other:	0.0	0.0	Yes	Yes	Yes	48hr	Standard	Yes	Yes	Yes	Yes	48hr
			No	No	No			No	No	No	No	
Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:												
All Results are emailed. Please provide Email address: <a href="mailto:JTB@ensolum.com">JTB@ensolum.com</a> , <a href="mailto:TMorrissey@ensolum.com">TMorrissey@ensolum.com</a> , <a href="mailto:KThomason@ensolum.com">KThomason@ensolum.com</a>												
REMARKS: N/A AP 1111928179 N5MW 1231124593 N5MW 1238428008												
Incident: N5MW 1231124593 N5MW 1238428008												
Cost Center: 1080621001												
APL: 30-015-31112												

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to [celey.keene@cardinallabsnm.com](mailto:celey.keene@cardinallabsnm.com)





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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

3 of 3

Company Name: Ensolum, LLC

Project Manager: Katherine Kahn

Address: 3122 National Parks Hwy

City: Carlsbad

Phone #: 305 319 9604

Project #: 05C1558237

Project Name: PLU Delaware C SWD

Project Location: 32.248866, -103.919096

Sampler Name: Joshua Boxley

BILL TO

P.O. #:

Company: XTO Energy Inc

Attn: Colton Brown

Address: 3104 E Green St

City: Carlsbad

State: NM Zip: 88220

Phone #:

Fax #:

ANALYSIS REQUEST

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV.	SAMPLING	DATE	TIME	Chlorides	TPH	BTEX					
4250820	BH15	1	G	1	X	X	X	2.6.25	1045	X	X	X					
16	BH15A	2	G	1	X	X	X		1048	X	X	X					
17	BH15B	4	G	1	X	X	X		1053	X	X	X					
18	PH23	1	G	1	X	X	X		1447	X	X	X					
20	PH23A	2	G	1	X	X	X		1450	X	X	X					
21	PH23B	3	G	1	X	X	X		1500	X	X	X					

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Relinquished By: [Signature] Date: 8-1-25 Received By: [Signature] Date: 8-1-25

Relinquished By: [Signature] Date: 1305 Received By: [Signature] Date: 1305

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Observed Temp. °C -0.3

Corrected Temp. °C 0.0

Sample Condition Cool Intact Yes No

CHECKED BY: (Initials)

Turnaround Time: Standard Rush

Bacteria (only) Sample Condition Cool Intact Yes No

Corrected Temp. °C

Verbal Result: Yes No Add'l Phone #:

All Results are emailed. Please provide Email address:

376 @ensolum.com, T Morrissey@ensolum.com, K Thomason@ensolum.com

REMARKS: N4M1231124593 N5MW1238429248

Cost Center: N5MW1219345739 N5MW1239428008

Incident: N5MW1231124593

Thermometer ID: #140

Correction Factor: +0.32

AT: 30-015-31112



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---

February 24, 2025

KATHERINE KHAN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU DELAWARE C SWD

Enclosed are the results of analyses for samples received by the laboratory on 02/20/25 14:02.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SS 01 1' (H251012-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18	
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17	
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33	
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97	
Total BTX	<0.300	0.300	02/21/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1330	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 84.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.0 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SS 01A 4' (H251012-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18		
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97		
Total BTEx	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2920	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 90.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.8 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 30 1' (H251012-03)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18		
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97		
Total BTX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 95.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 30A 3' (H251012-04)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18		
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97		
Total BTEX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 79.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 30B 4' (H251012-05)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18		
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97		
Total BTEX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 92.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.8 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 31 1' (H251012-06)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18		
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97		
Total BTX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 94.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 31A 3 ' (H251012-07)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18	
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17	
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33	
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97	
Total BTEX	<0.300	0.300	02/21/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 80.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 79.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 31B 4' (H251012-08)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18		
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97		
Total BTX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 93.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 32 1' (H251012-09)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18		
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97		
Total BTEX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 96.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 32A 2' (H251012-10)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18		
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97		
Total BTEx	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 98.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 32B 3' (H251012-11)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18	
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17	
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33	
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97	
Total BTX	<0.300	0.300	02/21/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 85.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/19/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 32C 4' (H251012-12)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18	
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17	
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33	
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97	
Total BTEX	<0.300	0.300	02/21/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	202	101	200	0.110	
DRO >C10-C28*	13.7	10.0	02/21/2025	ND	190	94.9	200	2.15	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 82.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 83.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/18/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 22 1' (H251012-13)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2025	ND	2.00	100	2.00	4.18	
Toluene*	<0.050	0.050	02/21/2025	ND	2.19	109	2.00	4.17	
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.28	114	2.00	4.33	
Total Xylenes*	<0.150	0.150	02/21/2025	ND	6.79	113	6.00	3.97	
Total BTEX	<0.300	0.300	02/21/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	960	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	211	106	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	203	102	200	3.91	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 118 % 48.2-134

Surrogate: 1-Chlorooctadecane 123 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/18/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 22A 2' (H251012-14)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.03	101	2.00	2.56		
Toluene*	<0.050	0.050	02/21/2025	ND	2.09	105	2.00	1.93		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.02	101	2.00	2.38		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	5.96	99.4	6.00	2.54		
Total BTEX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	816	16.0	02/21/2025	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	211	106	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	203	102	200	3.91	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 114 % 48.2-134

Surrogate: 1-Chlorooctadecane 118 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/18/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 22B 4' (H251012-15)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.03	101	2.00	2.56		
Toluene*	<0.050	0.050	02/21/2025	ND	2.09	105	2.00	1.93		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.02	101	2.00	2.38		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	5.96	99.4	6.00	2.54		
Total BTEX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	704	16.0	02/21/2025	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	211	106	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	203	102	200	3.91	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 111 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/18/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 28 1' (H251012-16)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.03	101	2.00	2.56		
Toluene*	<0.050	0.050	02/21/2025	ND	2.09	105	2.00	1.93		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.02	101	2.00	2.38		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	5.96	99.4	6.00	2.54		
Total BTEX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	02/21/2025	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	211	106	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	203	102	200	3.91	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 122 % 48.2-134

Surrogate: 1-Chlorooctadecane 125 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/18/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 28A 3' (H251012-17)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2025	ND	2.03	101	2.00	2.56	
Toluene*	<0.050	0.050	02/21/2025	ND	2.09	105	2.00	1.93	
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.02	101	2.00	2.38	
Total Xylenes*	<0.150	0.150	02/21/2025	ND	5.96	99.4	6.00	2.54	
Total BTEx	<0.300	0.300	02/21/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1090	16.0	02/21/2025	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	211	106	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	203	102	200	3.91	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 120 % 48.2-134

Surrogate: 1-Chlorooctadecane 123 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/18/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 28B 4' (H251012-18)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.03	101	2.00	2.56		
Toluene*	<0.050	0.050	02/21/2025	ND	2.09	105	2.00	1.93		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.02	101	2.00	2.38		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	5.96	99.4	6.00	2.54		
Total BTEX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1720	16.0	02/21/2025	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	211	106	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	203	102	200	3.91	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 111 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/18/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 29 1' (H251012-19)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.03	101	2.00	2.56		
Toluene*	<0.050	0.050	02/21/2025	ND	2.09	105	2.00	1.93		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.02	101	2.00	2.38		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	5.96	99.4	6.00	2.54		
Total BTEX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	02/21/2025	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	211	106	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	203	102	200	3.91	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 119 % 48.2-134

Surrogate: 1-Chlorooctadecane 121 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/18/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 29A 3' (H251012-20)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.03	101	2.00	2.56		
Toluene*	<0.050	0.050	02/21/2025	ND	2.09	105	2.00	1.93		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.02	101	2.00	2.38		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	5.96	99.4	6.00	2.54		
Total BTEX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	02/21/2025	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	211	106	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	203	102	200	3.91	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/20/2025  
Reported: 02/24/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/18/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: PH 29B 4' (H251012-21)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2025	ND	2.03	101	2.00	2.56		
Toluene*	<0.050	0.050	02/21/2025	ND	2.09	105	2.00	1.93		
Ethylbenzene*	<0.050	0.050	02/21/2025	ND	2.02	101	2.00	2.38		
Total Xylenes*	<0.150	0.150	02/21/2025	ND	5.96	99.4	6.00	2.54		
Total BTEX	<0.300	0.300	02/21/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	02/21/2025	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/21/2025	ND	206	103	200	0.394	
DRO >C10-C28*	<10.0	10.0	02/21/2025	ND	194	97.1	200	1.67	
EXT DRO >C28-C36	<10.0	10.0	02/21/2025	ND					

Surrogate: 1-Chlorooctane 97.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

---

### Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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\*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager





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Page 24 of 26





101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2083

Company Name: Ensolum, LLC		<b>BILL TO</b>		ANALYSIS REQUEST														
Project Manager: Katherine Kahn		P.O. #:																
Address: 3122 National Parks Hwy		Company: XTO Energy Inc																
City: Carlsbad		Attn: Colton Brown																
State: NM Zip: 88220		Address: 3104 E Green St																
Phone #: 505 319 9604 Fax #:		City: Carlsbad																
Project #: 08C1558237 Project Owner: XTO		State: NM Zip: 88220																
Project Name: PLU Delaware C SWD		Phone #:																
Project Location: 32.218866, -103.919096		Fax #:																
Sampler Name: Joshua Boxley																		
FOR LAB USE ONLY																		
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.	SAMPLING			Chlorides	TPH	BTEX		
H251012	PH32B	3	C	1	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME			
11	PH32C	4												12.19.25	1315			
12	PH22	1												12.19.25	1330			
13	PH22A	2												12.18.25	1220			
14	PH22B	4													1224			
15	PH22B	1													1240			
16	PH22A	3													1310			
17	PH22B	4													1318			
18	PH22B	1													1325			
19	PH22A	3													1345			
20	PH22A	3													1350			
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Relinquished By: [Signature]		Date: 8-20-25	Received By: [Signature]															
Relinquished By: [Signature]		Date: 1-10-26	Received By: [Signature]															
Delivered By: (Circle One)		Observed Temp. °C	Sample Condition	CHECKED BY: (Initials)														
Sampler - UPS - Bus - Other:		Corrected Temp. °C	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>															
FORM-006 R 3.2 10/07/21		† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com																





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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

383

BILL TO

ANALYSIS REQUEST

Company Name: Ensolum, LLC

Project Manager: Katherine Kahn

Address: 3122 National Parks Hwy

City: Carlsbad

State: NM Zip: 88220

Phone #: 303 319 9604

Fax #:

Project #: 03C1558237

Project Owner: XTO

Project Name: PLU Delaware C SWD

Project Location: 32, 248866, -103.919096

Sample Name: Joshua Boxley

P.O. #:

Company: XTO Energy Inc

Attn: Colton Brown

Address: 3104 E Green St

City: Carlsbad

State: NM Zip: 88220

Phone #:

Fax #:

PRESERV

SAMPLING

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

Depth (feet)

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

Chlorides

TPH

BTEX

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Relinquished By:

Date:

Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:

All Results are emailed. Please provide Email address:

REM: KKH Resolution/Carlsbad NM, NM

REMARKS: NHMP1411828179, NJMW1219345739, NJMW1231129593, NJMW1228428008, NJMW1228429248

Cost Center:

Turnaround Time: 1080621001

Thermometer ID: #440

Correction Factor: #0.30

Bacteria (only) Sample Condition

Cool Intact ☐ Yes ☐ No

Delivered By: (Circle One)

Observed Temp. °C

Corrected Temp. °C

Sample Condition

Turnaround Time: 48 hr

Cool Intact ☐ Yes ☐ No

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 26, 2025

KATHERINE KHAN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU DELAWARE C SWD

Enclosed are the results of analyses for samples received by the laboratory on 02/24/25 12:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/24/2025  
Reported: 02/26/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/20/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: PH 33 1' (H251070-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/25/2025	ND	2.02	101	2.00	0.0537	
Toluene*	<0.050	0.050	02/25/2025	ND	2.04	102	2.00	5.63	
Ethylbenzene*	<0.050	0.050	02/25/2025	ND	2.10	105	2.00	9.82	QM-07
Total Xylenes*	<0.150	0.150	02/25/2025	ND	6.22	104	6.00	10.9	QM-07
Total BTX	<0.300	0.300	02/25/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	02/25/2025	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2025	ND	207	103	200	0.708	
DRO >C10-C28*	<10.0	10.0	02/25/2025	ND	203	101	200	0.592	
EXT DRO >C28-C36	<10.0	10.0	02/25/2025	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 KATHERINE KHAN  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received: 02/24/2025  
 Reported: 02/26/2025  
 Project Name: PLU DELAWARE C SWD  
 Project Number: 03C1558237  
 Project Location: XTO 32.248866-103.919096

Sampling Date: 02/20/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: PH 33A 4' (H251070-02)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/25/2025	ND	2.02	101	2.00	0.0537	
Toluene*	<0.050	0.050	02/25/2025	ND	2.04	102	2.00	5.63	
Ethylbenzene*	<0.050	0.050	02/25/2025	ND	2.10	105	2.00	9.82	
Total Xylenes*	<0.150	0.150	02/25/2025	ND	6.22	104	6.00	10.9	
Total BTEx	<0.300	0.300	02/25/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	02/25/2025	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2025	ND	207	103	200	0.708	
DRO >C10-C28*	<10.0	10.0	02/25/2025	ND	203	101	200	0.592	
EXT DRO >C28-C36	<10.0	10.0	02/25/2025	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/24/2025  
Reported: 02/26/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/20/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: BH 18 1' (H251070-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/25/2025	ND	2.02	101	2.00	0.0537		
Toluene*	<0.050	0.050	02/25/2025	ND	2.04	102	2.00	5.63		
Ethylbenzene*	<0.050	0.050	02/25/2025	ND	2.10	105	2.00	9.82		
Total Xylenes*	<0.150	0.150	02/25/2025	ND	6.22	104	6.00	10.9		
Total BTEx	<0.300	0.300	02/25/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	02/25/2025	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2025	ND	207	103	200	0.708	
DRO >C10-C28*	248	10.0	02/25/2025	ND	203	101	200	0.592	
EXT DRO >C28-C36	67.7	10.0	02/25/2025	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 125 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/24/2025  
Reported: 02/26/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/20/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: BH 18A 4' (H251070-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/25/2025	ND	2.02	101	2.00	0.0537		
Toluene*	<0.050	0.050	02/25/2025	ND	2.04	102	2.00	5.63		
Ethylbenzene*	<0.050	0.050	02/25/2025	ND	2.10	105	2.00	9.82		
Total Xylenes*	<0.150	0.150	02/25/2025	ND	6.22	104	6.00	10.9		
Total BTEx	<0.300	0.300	02/25/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	02/25/2025	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2025	ND	207	103	200	0.708	
DRO >C10-C28*	<10.0	10.0	02/25/2025	ND	203	101	200	0.592	
EXT DRO >C28-C36	<10.0	10.0	02/25/2025	ND					

Surrogate: 1-Chlorooctane 118 % 48.2-134

Surrogate: 1-Chlorooctadecane 124 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/24/2025  
Reported: 02/26/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/20/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: BH 19 1' (H251070-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/25/2025	ND	2.02	101	2.00	0.0537		
Toluene*	<0.050	0.050	02/25/2025	ND	2.04	102	2.00	5.63		
Ethylbenzene*	<0.050	0.050	02/25/2025	ND	2.10	105	2.00	9.82		
Total Xylenes*	<0.150	0.150	02/25/2025	ND	6.22	104	6.00	10.9		
Total BTEx	<0.300	0.300	02/25/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	02/25/2025	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2025	ND	207	103	200	0.708	
DRO >C10-C28*	<10.0	10.0	02/25/2025	ND	203	101	200	0.592	
EXT DRO >C28-C36	<10.0	10.0	02/25/2025	ND					

Surrogate: 1-Chlorooctane 115 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/24/2025  
Reported: 02/26/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/20/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: BH 19A 4' (H251070-06)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/25/2025	ND	2.02	101	2.00	0.0537	
Toluene*	<0.050	0.050	02/25/2025	ND	2.04	102	2.00	5.63	
Ethylbenzene*	<0.050	0.050	02/25/2025	ND	2.10	105	2.00	9.82	
Total Xylenes*	<0.150	0.150	02/25/2025	ND	6.22	104	6.00	10.9	
Total BTEX	<0.300	0.300	02/25/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	02/25/2025	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2025	ND	207	103	200	0.708	
DRO >C10-C28*	<10.0	10.0	02/25/2025	ND	203	101	200	0.592	
EXT DRO >C28-C36	<10.0	10.0	02/25/2025	ND					

Surrogate: 1-Chlorooctane 96.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/24/2025  
Reported: 02/26/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/20/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: BH 20 1' (H251070-07)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/25/2025	ND	2.02	101	2.00	0.0537		
Toluene*	<0.050	0.050	02/25/2025	ND	2.04	102	2.00	5.63		
Ethylbenzene*	<0.050	0.050	02/25/2025	ND	2.10	105	2.00	9.82		
Total Xylenes*	<0.150	0.150	02/25/2025	ND	6.22	104	6.00	10.9		
Total BTEx	<0.300	0.300	02/25/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	02/25/2025	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2025	ND	207	103	200	0.708	
DRO >C10-C28*	<10.0	10.0	02/25/2025	ND	203	101	200	0.592	
EXT DRO >C28-C36	<10.0	10.0	02/25/2025	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 02/24/2025  
Reported: 02/26/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 02/20/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: BH 20A 4' (H251070-08)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/25/2025	ND	2.02	101	2.00	0.0537		
Toluene*	<0.050	0.050	02/25/2025	ND	2.04	102	2.00	5.63		
Ethylbenzene*	<0.050	0.050	02/25/2025	ND	2.10	105	2.00	9.82		
Total Xylenes*	<0.150	0.150	02/25/2025	ND	6.22	104	6.00	10.9		
Total BTEx	<0.300	0.300	02/25/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	02/25/2025	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2025	ND	207	103	200	0.708	
DRO >C10-C28*	<10.0	10.0	02/25/2025	ND	203	101	200	0.592	
EXT DRO >C28-C36	<10.0	10.0	02/25/2025	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager

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---

### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> Ensolum, LLC				<b>P.O. #:</b>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>									
<b>Project Manager:</b> Katherine Kahn				<b>Company:</b> XTO Energy Inc																	
<b>Address:</b> 3122 National Parks Hwy				<b>Attn:</b> Colton Brown																	
<b>City:</b> Carlsbad				<b>State:</b> NM <b>Zip:</b> 88220																	
<b>Phone #:</b> 303 319 9604 <b>Fax #:</b>				<b>Address:</b> 3104 E Green St																	
<b>Project #:</b> 03C1558237 <b>Project Owner:</b> XTO				<b>City:</b> Carlsbad																	
<b>Project Name:</b> PLU Delaware C SWD				<b>State:</b> NM <b>Zip:</b> 88220																	
<b>Project Location:</b> 32.218866, -103.919096				<b>Phone #:</b>																	
<b>Sampler Name:</b> Joshua Boxley				<b>Fax #:</b>																	
FOR LAB USE ONLY																					
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP. # CONTAINERS	MATRIX						PRESERV.	SAMPLING	Chlorides	TPH	BTEX							
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE: ICE / COOL OTHER :	DATE	TIME									
H251070	PH33	1	C 1	X							220.15	1240	X	X	X						
	PH33A	4	I									1305									
	BH18	1	I									1410									
	BH18A	4	I									1417									
	BH19	1	I									1336									
	BH19A	4	I									1344									
	BH20	1	I									1355									
	BH20A	4	I									1400									

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<b>Relinquished By:</b>	<b>Date:</b> 8-4-25	<b>Received By:</b>	<b>Date:</b> 8-4-25
<b>Relinquished By:</b>	<b>Date:</b> 8-30	<b>Received By:</b>	<b>Date:</b> 8-30
<b>Time:</b>			

<b>Delivered By:</b> (Circle One) Sampler - UPS - Bus - Other:	<b>Observed Temp.: °C</b> <b>Corrected Temp.: °C</b>	<b>Sample Condition</b> Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>CHECKED BY:</b> (Signature)	<b>Turnaround Time:</b> Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	<b>Bacteria (only)</b> Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Sample Condition</b> Observed Temp. °C Corrected Temp. °C
---	---	---	-----------------------------------	---	--	--

**Verbal Result:** ☐ Yes ☐ No **Add'l Phone #:**

**All Results are emailed. Please provide Email address:**  
K@Ensolum.com, T.Morrissey@ensolum.com, K.Thomason@ensolum.com

**REMARKS:**  
NHMP1411828179, NJMMW1219345739, NJMMW1231129593,  
NJMMW1228428008, NJMMW1228429248

**Cost Center:** 1080621001





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 21, 2025

KATHERINE KHAN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU DELAWARE C SWD

Enclosed are the results of analyses for samples received by the laboratory on 05/15/25 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
 KATHERINE KHAN  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received: 05/15/2025  
 Reported: 05/21/2025  
 Project Name: PLU DELAWARE C SWD  
 Project Number: 03C1558237  
 Project Location: XTO 32.248866-103.919096

Sampling Date: 05/14/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SS 02 SURFACE (H252942-01)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	0.727	
Toluene*	<0.050	0.050	05/16/2025	ND	2.32	116	2.00	1.50	
Ethylbenzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	2.00	
Total Xylenes*	<0.150	0.150	05/16/2025	ND	6.54	109	6.00	1.76	
Total BTEX	<0.300	0.300	05/16/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	05/16/2025	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/16/2025	ND	180	89.8	200	1.49	
DRO >C10-C28*	<10.0	10.0	05/16/2025	ND	175	87.4	200	1.26	
EXT DRO >C28-C36	<10.0	10.0	05/16/2025	ND					

Surrogate: 1-Chlorooctane 82.4 % 44.4-145

Surrogate: 1-Chlorooctadecane 69.8 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 05/15/2025  
Reported: 05/21/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 05/14/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SS 07 0.5 (H252942-02)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	0.727	
Toluene*	<0.050	0.050	05/16/2025	ND	2.32	116	2.00	1.50	
Ethylbenzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	2.00	
Total Xylenes*	<0.150	0.150	05/16/2025	ND	6.54	109	6.00	1.76	
Total BTEx	<0.300	0.300	05/16/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	05/16/2025	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/16/2025	ND	180	89.8	200	1.49	
DRO >C10-C28*	<10.0	10.0	05/16/2025	ND	175	87.4	200	1.26	
EXT DRO >C28-C36	<10.0	10.0	05/16/2025	ND					

Surrogate: 1-Chlorooctane 74.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 63.8 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 KATHERINE KHAN  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received: 05/15/2025  
 Reported: 05/21/2025  
 Project Name: PLU DELAWARE C SWD  
 Project Number: 03C1558237  
 Project Location: XTO 32.248866-103.919096

Sampling Date: 05/14/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH 21 1 (H252942-03)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	0.727	
Toluene*	<0.050	0.050	05/16/2025	ND	2.32	116	2.00	1.50	
Ethylbenzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	2.00	
Total Xylenes*	<0.150	0.150	05/16/2025	ND	6.54	109	6.00	1.76	
Total BTX	<0.300	0.300	05/16/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	05/16/2025	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/16/2025	ND	180	89.8	200	1.49	
DRO >C10-C28*	<10.0	10.0	05/16/2025	ND	175	87.4	200	1.26	
EXT DRO >C28-C36	<10.0	10.0	05/16/2025	ND					

Surrogate: 1-Chlorooctane 69.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 57.9 % 40.6-153

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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 05/15/2025  
Reported: 05/21/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 05/14/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BH 21A 4 (H252942-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	0.727		
Toluene*	<0.050	0.050	05/16/2025	ND	2.32	116	2.00	1.50		
Ethylbenzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	2.00		
Total Xylenes*	<0.150	0.150	05/16/2025	ND	6.54	109	6.00	1.76		
Total BTEX	<0.300	0.300	05/16/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	05/16/2025	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/16/2025	ND	180	89.8	200	1.49	
DRO >C10-C28*	<10.0	10.0	05/16/2025	ND	175	87.4	200	1.26	
EXT DRO >C28-C36	<10.0	10.0	05/16/2025	ND					

Surrogate: 1-Chlorooctane 83.8 % 44.4-145

Surrogate: 1-Chlorooctadecane 72.1 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 05/15/2025  
Reported: 05/21/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 05/14/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BH 22 0.5 (H252942-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	0.727		
Toluene*	<0.050	0.050	05/16/2025	ND	2.32	116	2.00	1.50		
Ethylbenzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	2.00		
Total Xylenes*	<0.150	0.150	05/16/2025	ND	6.54	109	6.00	1.76		
Total BTEx	<0.300	0.300	05/16/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	05/16/2025	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/16/2025	ND	180	89.8	200	1.49	
DRO >C10-C28*	<10.0	10.0	05/16/2025	ND	175	87.4	200	1.26	
EXT DRO >C28-C36	<10.0	10.0	05/16/2025	ND					

Surrogate: 1-Chlorooctane 78.8 % 44.4-145

Surrogate: 1-Chlorooctadecane 66.7 % 40.6-153

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 05/15/2025  
Reported: 05/21/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 05/14/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BH 22A 1 (H252942-06)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	0.727		
Toluene*	<0.050	0.050	05/16/2025	ND	2.32	116	2.00	1.50		
Ethylbenzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	2.00		
Total Xylenes*	<0.150	0.150	05/16/2025	ND	6.54	109	6.00	1.76		
Total BTEx	<0.300	0.300	05/16/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	05/16/2025	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/16/2025	ND	180	89.8	200	1.49	
DRO >C10-C28*	<10.0	10.0	05/16/2025	ND	175	87.4	200	1.26	
EXT DRO >C28-C36	<10.0	10.0	05/16/2025	ND					

Surrogate: 1-Chlorooctane 79.2 % 44.4-145

Surrogate: 1-Chlorooctadecane 67.9 % 40.6-153

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
KATHERINE KHAN  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 05/15/2025  
Reported: 05/21/2025  
Project Name: PLU DELAWARE C SWD  
Project Number: 03C1558237  
Project Location: XTO 32.248866-103.919096

Sampling Date: 05/14/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BH 22B 4 (H252942-07)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	0.727		
Toluene*	<0.050	0.050	05/16/2025	ND	2.32	116	2.00	1.50		
Ethylbenzene*	<0.050	0.050	05/16/2025	ND	2.19	110	2.00	2.00		
Total Xylenes*	<0.150	0.150	05/16/2025	ND	6.54	109	6.00	1.76		
Total BTX	<0.300	0.300	05/16/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	05/16/2025	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/16/2025	ND	178	88.9	200	1.41	
DRO >C10-C28*	<10.0	10.0	05/16/2025	ND	171	85.3	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	05/16/2025	ND					

Surrogate: 1-Chlorooctane 83.8 % 44.4-145

Surrogate: 1-Chlorooctadecane 86.9 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "C. D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager





101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1 of 1

Company Name: Ensolum, LLC

Project Manager: Katherine Kahn

Address: 3122 National Parks Hwy

City: Carlsbad

Phone #: 305 319 9604

Project #: 03C1558237

Project Name: PLU Delaware C SWD

Project Location: 32.248866, -103.99996

Sampler Name: Joshua Boxley

BILL TO

P.O. #:

Company: XTO Energy Inc

Attn: Colton Brown

Address: 3104 E Green St

City: Carlsbad

State: NM Zip: 88220

Phone #:

Fax #:

ANALYSIS REQUEST

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					DATE	TIME	ANALYSIS REQUEST				
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE			Chlorides	TPH	BTEX		
HS2942	5502	SURFACE	G	1						5-14-25	0950					
	5501	0.5								1000	1120					
	BH21	1								1137	0945					
	BH21A	0.5								1127	1140					
	BH22	1														
	BH22A	1														
	BH22B	4														

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Relinquished By: Date: 5-15-25 Received By: Date: 5-15-25

Relinquished By: Date: Received By: Date:

Delivered By: (Circle One)	Observed Temp. °C	Sample Condition	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:	Corrected Temp. °C	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



## APPENDIX B

Incident Number nAPP2506458430  
Laboratory Analytical Reports  
& Chain-of-Custody Documentation

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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

September 04, 2025

TRACY HILLARD

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU BATT. 184

Enclosed are the results of analyses for samples received by the laboratory on 08/29/25 15:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C25-00101. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
TRACY HILLARD  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/29/2025  
Reported: 09/04/2025  
Project Name: PLU BATT. 184  
Project Number: 03C1558711  
Project Location: XTO 32.248634, -103.91903

Sampling Date: 08/29/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 01 SURFACE (H255423-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/02/2025	ND	1.71	85.7	2.00	0.0236	
Toluene*	<0.050	0.050	09/02/2025	ND	1.81	90.6	2.00	0.502	
Ethylbenzene*	<0.050	0.050	09/02/2025	ND	1.84	91.9	2.00	1.06	
Total Xylenes*	<0.150	0.150	09/02/2025	ND	5.43	90.5	6.00	1.10	
Total BTX	<0.300	0.300	09/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	09/03/2025	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/02/2025	ND	228	114	200	0.537	
DRO >C10-C28*	<10.0	10.0	09/02/2025	ND	209	105	200	3.63	
EXT DRO >C28-C36	<10.0	10.0	09/02/2025	ND					

Surrogate: 1-Chlorooctane 87.8 % 44.4-145

Surrogate: 1-Chlorooctadecane 86.5 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
TRACY HILLARD  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/29/2025  
Reported: 09/04/2025  
Project Name: PLU BATT. 184  
Project Number: 03C1558711  
Project Location: XTO 32.248634, -103.91903

Sampling Date: 08/29/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 02 SURFACE (H255423-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/02/2025	ND	1.71	85.7	2.00	0.0236		
Toluene*	<0.050	0.050	09/02/2025	ND	1.81	90.6	2.00	0.502		
Ethylbenzene*	<0.050	0.050	09/02/2025	ND	1.84	91.9	2.00	1.06		
Total Xylenes*	<0.150	0.150	09/02/2025	ND	5.43	90.5	6.00	1.10		
Total BTEX	<0.300	0.300	09/02/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.5 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	09/03/2025	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/02/2025	ND	228	114	200	0.537	
DRO >C10-C28*	<10.0	10.0	09/02/2025	ND	209	105	200	3.63	
EXT DRO >C28-C36	<10.0	10.0	09/02/2025	ND					

Surrogate: 1-Chlorooctane 86.5 % 44.4-145

Surrogate: 1-Chlorooctadecane 84.2 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
TRACY HILLARD  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/29/2025  
Reported: 09/04/2025  
Project Name: PLU BATT. 184  
Project Number: 03C1558711  
Project Location: XTO 32.248634, -103.91903

Sampling Date: 08/29/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 03 SURFACE (H255423-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/02/2025	ND	1.71	85.7	2.00	0.0236		
Toluene*	<0.050	0.050	09/02/2025	ND	1.81	90.6	2.00	0.502		
Ethylbenzene*	<0.050	0.050	09/02/2025	ND	1.84	91.9	2.00	1.06		
Total Xylenes*	<0.150	0.150	09/02/2025	ND	5.43	90.5	6.00	1.10		
Total BTEX	<0.300	0.300	09/02/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.9 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	09/03/2025	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/02/2025	ND	202	101	200	0.184	
DRO >C10-C28*	<10.0	10.0	09/02/2025	ND	218	109	200	2.20	
EXT DRO >C28-C36	<10.0	10.0	09/02/2025	ND					

Surrogate: 1-Chlorooctane 77.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 70.4 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
TRACY HILLARD  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/29/2025  
Reported: 09/04/2025  
Project Name: PLU BATT. 184  
Project Number: 03C1558711  
Project Location: XTO 32.248634, -103.91903

Sampling Date: 08/29/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 04 SURFACE (H255423-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/02/2025	ND	1.71	85.7	2.00	0.0236		
Toluene*	<0.050	0.050	09/02/2025	ND	1.81	90.6	2.00	0.502		
Ethylbenzene*	<0.050	0.050	09/02/2025	ND	1.84	91.9	2.00	1.06		
Total Xylenes*	<0.150	0.150	09/02/2025	ND	5.43	90.5	6.00	1.10		
Total BTEX	<0.300	0.300	09/02/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	09/03/2025	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/02/2025	ND	202	101	200	0.184	
DRO >C10-C28*	39.5	10.0	09/02/2025	ND	218	109	200	2.20	
EXT DRO >C28-C36	27.1	10.0	09/02/2025	ND					

Surrogate: 1-Chlorooctane 83.1 % 44.4-145

Surrogate: 1-Chlorooctadecane 80.4 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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---

### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager



**CARDINAL**  
Laboratories

**101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476**

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>BILL TO</b>										<b>ANALYSIS REQUEST</b>											
Company Name: Ensolum, LLC										P.O. #: <u>        </u>											
Project Manager: Tracy Howard										Company: XTO Energy, Inc.											
Address: 3122 National Parks Hwy										Attn: Weston Bealain											
City: Carlsbad										State: NM Zip: 88220											
Phone #: 575-937-3906										Fax #: <u>        </u>											
Project #: 03C1558211										Project Owner: XTO ENERGY											
Project Name: PLU BATT. 184										City: CARLSBAD											
Project Location: 32.248634, -103.91903										State: NM Zip: 88220											
Sample Name: CHES HEIGHT										Phone #: <u>        </u>											
FOR LAB USE ONLY										Fax #: <u>        </u>											
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING	DATE	TIME	Chlorides	TPH	BTEX				
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :								
<u>H3554B3</u>																					
1	SSD1	G 1												8/24/25	12:50	✓	✓	✓			
2	SSD2	X SURFACE G 1												8/24/25	13:11	✓	✓	✓			
3	SSO3	D SURFACE G 1												8/24/25	12:42	✓	✓	✓			
4	SSO4	D SURFACE G 1												8/29/25	11:58	✓	✓	✓			
<u>CFL</u>																					
PLEASE NOTE: Liability and Damages Cardholder's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analysis. All claims resulting from negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.																					
Relinquished By: <u>CFL</u>										Date: <u>8/29/25</u> Received By: <u>[Signature]</u>											
Time: <u>1535</u>										Received By: <u>[Signature]</u>											
Date: <u>1535</u>										Time: <u>        </u>											
Relinquished By: <u>CFL</u>										CHECKED BY: <u>[Signature]</u>											
Delivered By: (Circle One)										Overserved Temp.: <u>48.8</u> Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No											
Sampler - UPS - Bus - Other:										Corrected Temp.: <u>5.12</u> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:										All Results are emailed. Please provide Email address: <u>kthilland@ensolum.com kthomasov@ensolum.com kmcross@ensolum.com</u>											
REMARKS: Incident: n APP1506458430 Cost Center: 1080821061										Turnaround Time: Standard Rush <input checked="" type="checkbox"/> Bacteria (only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Corrected Temp.: <u>70.32</u>											



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

September 04, 2025

TRACY HILLARD

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU BATT. 184

Enclosed are the results of analyses for samples received by the laboratory on 08/29/25 15:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C25-00101. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

ENSOLUM  
TRACY HILLARD  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/29/2025  
Reported: 09/04/2025  
Project Name: PLU BATT. 184  
Project Number: 03C1558711  
Project Location: XTO 32.248634, -103.91903

Sampling Date: 08/29/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: BH 01 0.5 (H255424-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/02/2025	ND	1.71	85.7	2.00	0.0236	
Toluene*	<0.050	0.050	09/02/2025	ND	1.81	90.6	2.00	0.502	
Ethylbenzene*	<0.050	0.050	09/02/2025	ND	1.84	91.9	2.00	1.06	
Total Xylenes*	<0.150	0.150	09/02/2025	ND	5.43	90.5	6.00	1.10	
Total BTX	<0.300	0.300	09/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	960	16.0	09/03/2025	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/02/2025	ND	202	101	200	0.184	
DRO >C10-C28*	10.6	10.0	09/02/2025	ND	218	109	200	2.20	
EXT DRO >C28-C36	<10.0	10.0	09/02/2025	ND					

Surrogate: 1-Chlorooctane 70.8 % 44.4-145

Surrogate: 1-Chlorooctadecane 65.3 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
TRACY HILLARD  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/29/2025  
Reported: 09/04/2025  
Project Name: PLU BATT. 184  
Project Number: 03C1558711  
Project Location: XTO 32.248634, -103.91903

Sampling Date: 08/29/2025  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: BH 01A 1 (H255424-02)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/02/2025	ND	1.71	85.7	2.00	0.0236	
Toluene*	<0.050	0.050	09/02/2025	ND	1.81	90.6	2.00	0.502	
Ethylbenzene*	<0.050	0.050	09/02/2025	ND	1.84	91.9	2.00	1.06	
Total Xylenes*	<0.150	0.150	09/02/2025	ND	5.43	90.5	6.00	1.10	
Total BTEX	<0.300	0.300	09/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.8 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	720	16.0	09/03/2025	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/02/2025	ND	202	101	200	0.184	
DRO >C10-C28*	38.4	10.0	09/02/2025	ND	218	109	200	2.20	
EXT DRO >C28-C36	41.5	10.0	09/02/2025	ND					

Surrogate: 1-Chlorooctane 85.8 % 44.4-145

Surrogate: 1-Chlorooctadecane 79.8 % 40.6-153

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---

### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

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A handwritten signature in black ink, appearing to read "Caley D. Keene".

---

Caley D. Keene, Lab Director/Quality Manager





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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC

BILL TO

ANALYSIS REQUEST

Project Manager: Tracy Hildebrand

P.O. #:

Address: 3122 National Parks Hwy

Company: XTO Energy, Inc.

City: Carlsbad

State: NM Zip: 88220

Attn: Cotton Reagin

Phone #: 575.937.3906

Fax #:

Address: 3104 E Greene St

Project #: 03C1558711

Project Owner: XTO Energy, Inc.

City: Carlsbad

Project Name: PLU BAT. 184

State: NM Zip: 88220

Project Location: 32.248634, -103.91903

Phone #:

Sample Name: CHES MEGH

Fax #:

FOR LAB USE ONLY

MATRIX

PRESERV

SAMPLING

Lab I.D.

Sample I.D.

Depth (feet)

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER:

ACID/BASE:

ICE / COOL

OTHER:

DATE

TIME

Chlorides

TPH

BTEX

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Relinquished By:

Received By:

Date:

Time:

Relinquished By:

Received By:

Date:

Time:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Observed Temp. °C

Corrected Temp. °C

Sample Condition Cool Intact

CHECKED BY: (Initials)

Turnaround Time:

Standard Rush

Bacteria (only)

Cool Intact

Observed Temp. °C

Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



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Phone: (505) 629-6116

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

QUESTIONS

Action 528755

**QUESTIONS**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 528755
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Prerequisites</b>	
Incident ID (n#)	nJMW1231129593
Incident Name	NJMW1231129593 POKER LAKE UNIT #153 @ 30-015-31412
Incident Type	Produced Water Release
Incident Status	Remediation Plan Received
Incident Well	[30-015-31412] POKER LAKE UNIT #153

**Location of Release Source**

Please answer all the questions in this group.

Site Name	POKER LAKE UNIT #153
Date Release Discovered	09/19/2012
Surface Owner	Federal

**Incident Details**

Please answer all the questions in this group.

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

**Nature and Volume of Release**

Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.

Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Equipment Failure   Flow Line - Injection   Produced Water   Released: 650 BBL   Recovered: 0 BBL   Lost: 650 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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

QUESTIONS, Page 2

Action 528755

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 528755
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

**Initial Response**

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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

I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: NMEnvNotifications@exxonmobil.com Date: 11/21/2025
--	---

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

QUESTIONS, Page 3

Action 528755

**QUESTIONS (continued)**

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
	Action Number:  528755
	Action Type:  [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS****Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	Attached Document
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1000 (ft.) and ½ (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Greater than 5 (mi.)
Any other fresh water well or spring	Greater than 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between ½ and 1 (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

**Remediation Plan**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

**Soil Contamination Sampling:** (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	6270
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	4800
GRO+DRO (EPA SW-846 Method 8015M)	1840
BTEX (EPA SW-846 Method 8021B or 8260B)	0.1
Benzene (EPA SW-846 Method 8021B or 8260B)	0

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	09/19/2012
On what date will (or did) the final sampling or liner inspection occur	05/14/2025
On what date will (or was) the remediation complete(d)	05/14/2025
What is the estimated surface area (in square feet) that will be reclaimed	8200
What is the estimated volume (in cubic yards) that will be reclaimed	1215
What is the estimated surface area (in square feet) that will be remediated	8200
What is the estimated volume (in cubic yards) that will be remediated	1215

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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

QUESTIONS, Page 4

Action 528755

**QUESTIONS (continued)**

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
	Action Number:  528755
	Action Type:  [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Remediation Plan (continued)</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
<b>This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:</b>	
(Select all answers below that apply.)	
(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Yes
Other Non-listed Remedial Process. Please specify	no impacted soils removed
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: NMEnvNotifications@exxonmobil.com Date: 11/21/2025
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 5

Action 528755

QUESTIONS (continued)

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
	Action Number:  528755
	Action Type:  [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

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

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

QUESTIONS, Page 6

Action 528755

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 528755
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	519043
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	10/28/2025
What was the (estimated) number of samples that were to be gathered	6
What was the sampling surface area in square feet	15000

**Remediation Closure Request**

Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.

Requesting a remediation closure approval with this submission	No
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1220 S. St Francis Dr.  
Santa Fe, NM 87505

CONDITIONS

Action 528755

CONDITIONS

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
	Action Number:  528755
	Action Type:  [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
scwells	Remediation plan approved with the following condition: 1) At the previously sampled locations of BH15 and SS12 OCD would like delineation samples to be collected at surface, 1', 2', 3' and 4' depths during the same collection event. Samples that were previously collected a year ago do not suffice, as one heavy rain can push contaminants deeper in the soil column and the southeast of New Mexico experienced these in 2025. Photographic documentation should be included of the sample collection. Submit remediation closure report to the OCD by 3/19/26.	12/19/2025