

October 12, 2018

Mr. Mike Bratcher
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

**RE: Request For Closure
WPX Energy, Inc.
Remediation Permit Number 2RP-4984
EP USA #005
Eddy County, New Mexico**

Dear Mr. Bratcher:

On behalf of WPX Energy, Inc. (WPX), LT Environmental, Inc. (LTE) is pleased to present the following letter report detailing remediation and soil sampling activities at the EP USA #005 (Site) in Unit N, Section 26, Township 26 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The purpose of the excavation and soil sampling activities was to address impacts to soil after crude oil and produced water were released from a wellhead. The release was discovered on September 17, 2018. WPX estimated the release volume was approximately 5 barrels (bbls) of produced water and 3 bbls of crude oil. The release affected approximately 3,000 square feet of the well pad surface and approximately 1,100 square feet off of the pad surface to the east of the pad. WPX reported the release to the Bureau of Land Management (BLM) and the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 and was assigned Remediation Permit Number 2RP-4984 (Attachment 1). Based on the initial response efforts and the results of the confirmation soil sampling, WPX is requesting no further action for this release event.

BACKGROUND

The final site characterization occurred after August 14, 2018; therefore, LTE ranked the site according to Table 1, the Closure Criteria for Soils Impacted by a Release, of the New Mexico Administrative Code (NMAC) 19.15.29.12. Depth to groundwater at the Site is estimated to be between 51 feet and 100 feet below ground surface (bgs) based on known aquifer properties and the elevation difference between the Site and Red Bluff Reservoir. The closest surface water to the Site is an unnamed arroyo located approximately 541 feet east northeast of the Site. The Site is greater than 200 feet from any private domestic water source. Water well C01570 is located 1,850 feet northwest of the Site, but no depth to groundwater data is reported. No other permitted water wells within 2 miles of the Site have associated depth to groundwater data. As such, LTE approximated depth to groundwater based on the elevation difference between the



Site and Red Bluff Reservoir. The reservoir is located approximately 0.8 miles south of the Site and is approximately 70.95 feet lower in elevation.

Based on an estimated groundwater depth between 51 feet and 100 feet bgs, the NMOCD Table 1 closure criteria specifies that the Site will adhere to the following concentration limits for closure: 10,000 milligrams per kilogram (mg/kg) chloride; 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg total sum of TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); 50 mg/kg benzene, toluene, ethylbenzene, and total xylenes (BTEX); and 10 mg/kg benzene.

EXCAVATION ACTIVITIES

On September 24, 2018, LTE was on site to inspect the release area. To delineate hydrocarbon and chloride impacts to soil and direct excavation activities, LTE screened soil samples using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. Based on field screening, it was determined that remediation via excavation of the off-pad release area was necessary.

On September 25 and 26, 2018, LTE was on site with Kelley Oilfield Services, Inc. to excavate impacted soil as identified via field screening observations. The final excavation extent was approximately 1,100 square feet in area and extended to 4 feet bgs. The lateral extent of the remediation footprint was approximately 50 feet by 22 feet and is illustrated on Figure 2. Approximately 132 cubic yards of impacted soil were removed using a backhoe. Impacted soil was transported and properly disposed of at the R360 Red Bluff Landfill Facility located in Orla, Texas. Photographs of the release before and during the excavation are included as Attachment 1.

SOIL SAMPLING

Following the removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation to document removal of impacted soil. Seven composite soil samples (FS01, FS02, FS03, FS04, SW01, SW02, and SW03) were collected at depths ranging from 2 feet to 4 feet bgs. Additionally, six discrete soil samples were collected from the release footprint on the well pad surface. Well pad surface soil samples were collected from three locations (SS01, SS02, and SS03) at depths of 0.5 feet and 1 foot bgs at each location. Soil sample locations are depicted on Figure 2.

Soil samples were placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler, and method of analysis and immediately placed on ice. The samples were shipped at 4 degrees Celsius (°C) to Xenco Laboratories in Midland, Texas, under strict chain-of-custody procedures for analysis of BTEX by United States Environmental Protection Agency (EPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-motor oil range organics (MRO) by EPA Method 8015M, and chloride by EPA Method 300.0.





ANALYTICAL RESULTS

Laboratory analytical results indicated BTEX and TPH concentrations were either below the laboratory detection limit or compliant with NMOCD Table 1 closure criteria in all soil samples. Chloride concentrations ranged from 366 mg/kg in soil sample SW01 to 4,950 mg/kg in soil sample SS02 at 0.5 feet bgs. TPH concentrations ranged from 75.5 mg/kg in soil sample SS02 at 0.5 feet bgs to 729 mg/kg in soil sample SS02 at 1 foot bgs. Laboratory analytical results are presented on Figure 2 and summarized in Table 1. Complete laboratory analytical reports are included as Attachment 2.

CONCLUSIONS

Approximately 132 cubic yards of impacted soil were excavated from the release footprint, and laboratory analytical results of seven confirmation soil samples indicated compliance with NMOCD Table 1 closure criteria. Following the receipt of soil sample laboratory analytical results, the excavation area was backfilled with clean imported fill material to match the pre-existing grade. Based on the data collected, WPX is requesting closure of NMOCD Remediation Permit Number 2RP-4984 per New Mexico Administrative Code (NMAC) rule 19.15.29.12 Amended August 2018.

If you have any questions or comments, please do not hesitate to contact Daniel Burns at (701) 570-4727 or dburns@ltenv.com.

Sincerely,
LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink, appearing to read 'D. Burns'.

Daniel Burns
Project Geologist

A handwritten signature in blue ink, appearing to read 'Ashley L. Ager'.

Ashley L. Ager, M.S., P.G.
Senior Geologist

cc: Maria Pruett, NMOCD
Shelly Tucker, BLM
Jim Amos, BLM
Jim Raley, WPX





Attachments:

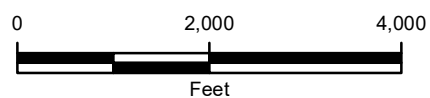
Figure 1	Site Location Map
Figure 2	Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141
Attachment 2	Photographic Log
Attachment 3	Laboratory Analytical Reports



IMAGE COURTESY OF ESRI/USGS

LEGEND

 SITE LOCATION



NOTE: REMEDIATION PERMIT
NUMBER 2RP-4984

FIGURE 1
SITE LOCATION MAP
EP USA #005
UNIT N SEC 26 T26S R29E
EDDY COUNTY, NEW MEXICO
WPX ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE
 SAMPLE DATE
 B: BENZENE (NMOCD = 10 mg/kg)
 BTEX: TOTAL BTEX (NMOCD = 50 mg/kg)
 GRO+DRO: GASOLINE RANGE AND DIESEL RANGE
 ORGANICS (NMOCD = 1,000 mg/kg)
 TPH: TOTAL PETROLEUM HYDROCARBONS
 (NMOCD = 2,500 mg/kg)
 Cl: CHLORIDE (NMOCD = 10,000 mg/kg)
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE STANDARD
 NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
 REGULATORY STANDARD

SS01@0.5'
 9/26/2018
 B: <0.00202
 BTEX: <0.00202
 GRO+DRO: 216
 TPH: 216
 Cl: 1,880

SS01@1'
 9/26/2018
 B: <0.00201
 BTEX: <0.00201
 GRO+DRO: 214
 TPH: 214
 Cl: 3,340

SS02@0.5'
 9/26/2018
 B: <0.00202
 BTEX: <0.00202
 GRO+DRO: 75.5
 TPH: 75.5
 Cl: 4,950

SS02@1'
 9/26/2018
 B: <0.00198
 BTEX: <0.00198
 GRO+DRO: 680
 TPH: 729
 Cl: 3,770

SW01@2'
 9/26/2018
 B: <0.00200
 BTEX: <0.00200
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: 366

FS01@4'
 9/26/2018
 B: <0.00201
 BTEX: <0.00201
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: 1,900

SW02@2'
 9/26/2018
 B: <0.00202
 BTEX: <0.00202
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: 563

FS02@4'
 9/26/2018
 B: <0.00201
 BTEX: <0.00201
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: 1,910

FS03@4'
 9/26/2018
 B: <0.00199
 BTEX: <0.00199
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: 1,080

SS03@0.5'
 9/26/2018
 B: <0.00198
 BTEX: <0.00198
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: 1,200

SS03@1'
 9/26/2018
 B: <0.00200
 BTEX: <0.00200
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: 2,490

SW03@2'
 9/26/2018
 B: <0.00199
 BTEX: <0.00199
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: 1,780

FS04@4'
 9/26/2018
 B: <0.00200
 BTEX: <0.00200
 GRO+DRO: <15.0
 TPH: <15.0
 Cl: 1,960

LEGEND

- FINAL CONFIRMATION SOIL SAMPLE
- EXCAVATION EXTENT
- RELEASE EXTENT MAPPED BY WPX ON 09-2018

NOTE: REMEDIATION PERMIT NUMBER 2RP-4984

IMAGE COURTESY OF GOOGLE EARTH 2015

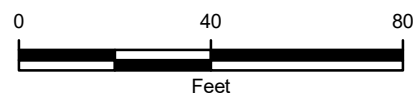


FIGURE 2
 SOIL SAMPLE LOCATIONS
 EP USA #005
 UNIT N SEC 26 T26S R29E
 EDDY COUNTY, NEW MEXICO
 WPX ENERGY, INC.



TABLE 1
SOIL ANALYTICAL RESULTS

EP USA #005
REMEDATION PERMIT NUMBER 2RP-4984
EDDY COUNTY, NEW MEXICO
WPX 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)	MRO (mg/kg)	Sum of GRO + DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
Off-pad Excavation Confirmation Closure Samples													
SW01	2	9/26/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	366
SW02	2	9/26/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	563
SW03	2	9/26/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,780
FS01	4	9/26/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,900
FS02	4	9/26/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,910
FS03	4	9/26/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,080
FS04	4	9/26/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,960
On-pad Site Characterization Confirmation Samples													
SS01	0.5	9/26/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	216	<15.0	216	216	1,880
SS01	1	9/26/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	214	<14.9	214	214	3,340
SS02	0.5	9/26/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	75.5	<15.0	75.5	75.5	4,950
SS02	1	9/26/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	680	49.3	680	729	3,770
SS03	0.5	9/26/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	1,200
SS03	1	9/26/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	2,490
NMOCD Table 1 Limit			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000

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

MRO - motor oil range organics

NMOCD - New Mexico Oil Conservation Division

NE - not established

Table 1 - Closure Criteria for Soils Impacted by a Release per 19.15.29 August 2018

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory detection limit

Bold indicates result exceeds the applicable regulatory standard.





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	NMAP1826970471
District RP	2RP-4984
Facility ID	N/A
Application ID	pMAP1826970173

Release Notification

Responsible Party

Responsible Party: WPX Energy/ RKI	OGRID: 246289
Contact Name: Jim Raley	Contact Telephone: 575-689-7597
Contact email: james.raley@wpxenergy.com	Incident # (assigned by OCD) NMAP1826970471
Contact mailing address: 5315 Buena Vista Dr., Carlsbad, NM 88220	

Location of Release Source

Latitude: **32.0069847** Longitude: **-103.9574661**
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: EP USA #005	Site Type: Oil
Date Release Discovered: 9/17/2018	API#: 30-015-25020

Unit Letter	Section	Township	Range	County
N	26	26S	29E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 3	Volume Recovered (bbls) 0
☒ Produced Water	Volume Released (bbls) 5	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Interior corrosion on 1" nipple located on wellhead allowed small hole to develop. This allowed fluids to escape to pad surface. Small area off pad was also impacted approx 50' on east side of well pad. BLM permission granted to excavate impacted area off-site.

Incident ID	NMAP1826970471
District RP	2RP-4984
Facility ID	N/A
Application ID	pMAP1826970173

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

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <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: Jim Raley	Title: Environmental Specialist
Signature: 	Date: 9/25/2018
email: james.ralej@wpenergy.com	Telephone: 575-689-7597

OCD Only

Received by:  Date: 09/26/18

Incident ID	NMAP1826970471
District RP	2RP-4984
Facility ID	N/A
Application ID	pMAP1826970173

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>51-100</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☒ Yes ☐ No

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

Characterization Report Checklist: *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

Incident ID	NMAP1826970471
District RP	2RP-4984
Facility ID	N/A
Application ID	pMAP1826970173

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: **Jim Raley**Title: **Environmental Specialist**

Signature: _____

Date: **10/18/18**

email: _____

James.Raley@wpenergy.comTelephone: **575-689-7597****OCD Only**

Received by: _____

Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NMAP1826970471
District RP	2RP-4984
Facility ID	N/A
Application ID	pMAP1826970173

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.

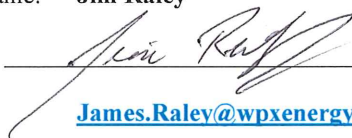
Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ 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: **Jim Raley**

Title: **Environmental Specialist**

Signature: 

Date: **10/18/18**

email: James.Raley@wpenergy.com

Telephone: **575-689-7597**

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: _____





Release footprint on pad surface before excavation– view east toward pasture excavation.

Project: 034818008	WPX Energy, Inc. EP USA #005	 <i>Advancing Opportunity</i>
September 24, 2018	Photographic Log	



Release footprint on pad surface before excavation – view northwest

Project: 034818008	WPX Energy, Inc. EP USA #005	 <i>Advancing Opportunity</i>
September 24, 2018	Photographic Log	



Release footprint on pad surface after excavation – view west

Project: 034818008	WPX Energy, Inc. EP USA #005	 <i>Advancing Opportunity</i>
September 26, 2018	Photographic Log	



Excavation area in pasture – view north

Project: 034818008	WPX Energy, Inc. EP USA #005	 <i>Advancing Opportunity</i>
September 26, 2018	Photographic Log	



Analytical Report 600488

for
LT Environmental, Inc.

Project Manager: Adrian Baker

EP USA 005

04-OCT-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 (T104704400-18-18)
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)



04-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **600488**

EP USA 005

Project Address: Eddy, 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) 600488. 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. 600488 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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

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Sample Cross Reference 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	09-26-18 12:30	6 In	600488-001
SS01	S	09-26-18 12:35	1 ft	600488-002
SS02	S	09-26-18 12:40	6 In	600488-003
SS02	S	09-26-18 12:45	1 ft	600488-004
SS03	S	09-26-18 12:50	6 In	600488-005
SS03	S	09-26-18 12:55	1 ft	600488-006



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *EP USA 005*

Project ID:
Work Order Number(s): 600488

Report Date: 04-OCT-18
Date Received: 09/27/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3064901 Inorganic Anions by EPA 300

Lab Sample ID 600661-012 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 600488-003, -004, -005, -006.

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

Batch: LBA-3065219 BTEX by EPA 8021B

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



Certificate of Analysis Summary 600488

LT Environmental, Inc., Arvada, CO

Project Name: EP USA 005



Project Id:

Contact: Adrian Baker

Project Location: Eddy,NM

Date Received in Lab: Thu Sep-27-18 10:34 am

Report Date: 04-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	600488-001	600488-002	600488-003	600488-004	600488-005	600488-006
	Field Id:	SS01	SS01	SS02	SS02	SS03	SS03
	Depth:	6- In	1- ft	6- In	1- ft	6- In	1- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Sep-26-18 12:30	Sep-26-18 12:35	Sep-26-18 12:40	Sep-26-18 12:45	Sep-26-18 12:50	Sep-26-18 12:55
BTEX by EPA 8021B	Extracted:	Oct-03-18 08:00	Oct-03-18 08:00	Oct-03-18 08:00	Oct-03-18 08:00	Oct-03-18 08:00	Oct-03-18 08:00
	Analyzed:	Oct-03-18 15:38	Oct-03-18 16:13	Oct-03-18 16:34	Oct-03-18 16:55	Oct-03-18 17:16	Oct-03-18 17:38
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Benzene		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00404 0.00404	<0.00402 0.00402	<0.00403 0.00403	<0.00397 0.00397	<0.00396 0.00396	<0.00401 0.00401
o-Xylene		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200
Inorganic Anions by EPA 300	Extracted:	Sep-27-18 16:30	Sep-27-18 16:30	Oct-01-18 09:15	Oct-01-18 09:15	Oct-01-18 09:15	Oct-01-18 09:15
	Analyzed:	Sep-28-18 11:57	Sep-28-18 12:03	Oct-01-18 10:47	Oct-01-18 10:52	Oct-01-18 11:44	Oct-01-18 10:58
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Chloride		1880 25.0	3340 25.0	4950 49.6	3770 24.8	1200 5.05	2490 25.2
TPH by SW8015 Mod	Extracted:	Sep-28-18 16:00	Sep-28-18 16:00	Sep-28-18 16:00	Sep-28-18 16:00	Sep-28-18 16:00	Sep-28-18 16:00
	Analyzed:	Sep-28-18 23:36	Sep-29-18 00:34	Sep-29-18 00:53	Sep-29-18 01:12	Sep-29-18 01:31	Sep-29-18 01:51
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		216 15.0	214 14.9	75.5 15.0	680 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	49.3 15.0	<15.0 15.0	<15.0 15.0
Total TPH		216 15.0	214 14.9	75.5 15.0	729 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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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **SS01**
Lab Sample Id: 600488-001

Matrix: Soil
Date Collected: 09.26.18 12.30

Date Received: 09.27.18 10.34
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064713

Date Prep: 09.27.18 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1880	25.0	mg/kg	09.28.18 11.57		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064912

Date Prep: 09.28.18 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	09.28.18 23.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	216	15.0	mg/kg	09.28.18 23.36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.28.18 23.36	U	1
Total TPH	PHC635	216	15.0	mg/kg	09.28.18 23.36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.28.18 23.36	
o-Terphenyl	84-15-1	102	%	70-135	09.28.18 23.36	



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **SS01**
Lab Sample Id: 600488-001

Matrix: Soil
Date Collected: 09.26.18 12.30

Date Received: 09.27.18 10.34
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.03.18 08.00

Basis: Wet Weight

Seq Number: 3065219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.03.18 15.38	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.03.18 15.38	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.03.18 15.38	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.03.18 15.38	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.03.18 15.38	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.03.18 15.38	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.03.18 15.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	10.03.18 15.38		
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.03.18 15.38		



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **SS01**
Lab Sample Id: 600488-002

Matrix: Soil
Date Collected: 09.26.18 12.35

Date Received: 09.27.18 10.34
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064713

Date Prep: 09.27.18 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3340	25.0	mg/kg	09.28.18 12.03		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064912

Date Prep: 09.28.18 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.29.18 00.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	214	14.9	mg/kg	09.29.18 00.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	09.29.18 00.34	U	1
Total TPH	PHC635	214	14.9	mg/kg	09.29.18 00.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.29.18 00.34	
o-Terphenyl	84-15-1	108	%	70-135	09.29.18 00.34	



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **SS01**
Lab Sample Id: 600488-002

Matrix: Soil
Date Collected: 09.26.18 12.35

Date Received: 09.27.18 10.34
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.03.18 08.00

Basis: Wet Weight

Seq Number: 3065219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.03.18 16.13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.03.18 16.13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.03.18 16.13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.03.18 16.13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.03.18 16.13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.03.18 16.13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.03.18 16.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.03.18 16.13		
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.03.18 16.13		



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: SS02
Lab Sample Id: 600488-003

Matrix: Soil
Date Collected: 09.26.18 12.40

Date Received: 09.27.18 10.34
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064901

Date Prep: 10.01.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4950	49.6	mg/kg	10.01.18 10.47		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064912

Date Prep: 09.28.18 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	09.29.18 00.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	75.5	15.0	mg/kg	09.29.18 00.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 00.53	U	1
Total TPH	PHC635	75.5	15.0	mg/kg	09.29.18 00.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.29.18 00.53	
o-Terphenyl	84-15-1	95	%	70-135	09.29.18 00.53	



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: SS02
Lab Sample Id: 600488-003

Matrix: Soil
Date Collected: 09.26.18 12.40

Date Received: 09.27.18 10.34
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.03.18 08.00

Basis: Wet Weight

Seq Number: 3065219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.03.18 16.34	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.03.18 16.34	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.03.18 16.34	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.03.18 16.34	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.03.18 16.34	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.03.18 16.34	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.03.18 16.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.03.18 16.34		
1,4-Difluorobenzene	540-36-3	93	%	70-130	10.03.18 16.34		



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: SS02
Lab Sample Id: 600488-004

Matrix: Soil
Date Collected: 09.26.18 12.45

Date Received: 09.27.18 10.34
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064901

Date Prep: 10.01.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3770	24.8	mg/kg	10.01.18 10.52		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064912

Date Prep: 09.28.18 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	09.29.18 01.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	680	15.0	mg/kg	09.29.18 01.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	49.3	15.0	mg/kg	09.29.18 01.12		1
Total TPH	PHC635	729	15.0	mg/kg	09.29.18 01.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	09.29.18 01.12	
o-Terphenyl	84-15-1	107	%	70-135	09.29.18 01.12	



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: SS02
Lab Sample Id: 600488-004

Matrix: Soil
Date Collected: 09.26.18 12.45

Date Received: 09.27.18 10.34
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.03.18 08.00

Basis: Wet Weight

Seq Number: 3065219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.03.18 16.55	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.03.18 16.55	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.03.18 16.55	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.03.18 16.55	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.03.18 16.55	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.03.18 16.55	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.03.18 16.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.03.18 16.55		
4-Bromofluorobenzene	460-00-4	90	%	70-130	10.03.18 16.55		



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: SS03
Lab Sample Id: 600488-005

Matrix: Soil
Date Collected: 09.26.18 12.50

Date Received: 09.27.18 10.34
Sample Depth: 6 In

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064901

Date Prep: 10.01.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1200	5.05	mg/kg	10.01.18 11.44		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064912

Date Prep: 09.28.18 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	09.29.18 01.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.29.18 01.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 01.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.29.18 01.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.29.18 01.31	
o-Terphenyl	84-15-1	93	%	70-135	09.29.18 01.31	



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: SS03
Lab Sample Id: 600488-005

Matrix: Soil
Date Collected: 09.26.18 12.50

Date Received: 09.27.18 10.34
Sample Depth: 6 In

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.03.18 08.00

Basis: Wet Weight

Seq Number: 3065219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.03.18 17.16	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.03.18 17.16	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.03.18 17.16	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	10.03.18 17.16	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.03.18 17.16	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.03.18 17.16	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.03.18 17.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.03.18 17.16		
4-Bromofluorobenzene	460-00-4	97	%	70-130	10.03.18 17.16		



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: SS03
Lab Sample Id: 600488-006

Matrix: Soil
Date Collected: 09.26.18 12.55

Date Received: 09.27.18 10.34
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064901

Date Prep: 10.01.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2490	25.2	mg/kg	10.01.18 10.58		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064912

Date Prep: 09.28.18 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	09.29.18 01.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.29.18 01.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 01.51	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.29.18 01.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.29.18 01.51	
o-Terphenyl	84-15-1	92	%	70-135	09.29.18 01.51	



Certificate of Analytical Results 600488



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: SS03
Lab Sample Id: 600488-006

Matrix: Soil
Date Collected: 09.26.18 12.55

Date Received: 09.27.18 10.34
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.03.18 08.00

Basis: Wet Weight

Seq Number: 3065219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.03.18 17.38	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.03.18 17.38	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.03.18 17.38	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.03.18 17.38	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.03.18 17.38	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.03.18 17.38	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.03.18 17.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	10.03.18 17.38		
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.03.18 17.38		

- 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.
EP USA 005

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064713

MB Sample Id: 7663129-1-BLK

Matrix: Solid

LCS Sample Id: 7663129-1-BKS

Prep Method: E300P

Date Prep: 09.27.18

LCSD Sample Id: 7663129-1-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	255	102	256	102	90-110	0	20	mg/kg	09.28.18 09:24	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064901

MB Sample Id: 7663267-1-BLK

Matrix: Solid

LCS Sample Id: 7663267-1-BKS

Prep Method: E300P

Date Prep: 10.01.18

LCSD Sample Id: 7663267-1-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	258	103	259	104	90-110	0	20	mg/kg	10.01.18 10:13	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064713

Parent Sample Id: 600460-001

Matrix: Soil

MS Sample Id: 600460-001 S

Prep Method: E300P

Date Prep: 09.27.18

MSD Sample Id: 600460-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.850	248	262	106	261	105	90-110	0	20	mg/kg	09.28.18 09:41	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064713

Parent Sample Id: 600490-001

Matrix: Soil

MS Sample Id: 600490-001 S

Prep Method: E300P

Date Prep: 09.27.18

MSD Sample Id: 600490-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	455	253	704	98	704	98	90-110	0	20	mg/kg	09.28.18 11:00	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064901

Parent Sample Id: 600488-005

Matrix: Soil

MS Sample Id: 600488-005 S

Prep Method: E300P

Date Prep: 10.01.18

MSD Sample Id: 600488-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1200	253	1400	79	1400	79	90-110	0	20	mg/kg	10.01.18 11:49	X

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



QC Summary 600488

LT Environmental, Inc.

EP USA 005

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064901

Parent Sample Id: 600661-012

Matrix: Soil

MS Sample Id: 600661-012 S

Prep Method: E300P

Date Prep: 10.01.18

MSD Sample Id: 600661-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	247	99	248	99	90-110	0	20	mg/kg	10.01.18 10:30	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064912

MB Sample Id: 7663248-1-BLK

Matrix: Solid

LCS Sample Id: 7663248-1-BKS

Prep Method: TX1005P

Date Prep: 09.28.18

LCSD Sample Id: 7663248-1-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	987	99	1080	108	70-135	9	20	mg/kg	09.28.18 19:29	
Diesel Range Organics (DRO)	<8.13	1000	1000	100	1080	108	70-135	8	20	mg/kg	09.28.18 19:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		120		125		70-135	%	09.28.18 19:29
o-Terphenyl	100		114		115		70-135	%	09.28.18 19:29

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064912

Parent Sample Id: 600266-005

Matrix: Soil

MS Sample Id: 600266-005 S

Prep Method: TX1005P

Date Prep: 09.28.18

MSD Sample Id: 600266-005 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	999	965	97	981	98	70-135	2	20	mg/kg	09.28.18 20:26	
Diesel Range Organics (DRO)	<8.12	999	987	99	1010	101	70-135	2	20	mg/kg	09.28.18 20:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		116		70-135	%	09.28.18 20:26
o-Terphenyl	102		104		70-135	%	09.28.18 20:26

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

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

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

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

LT Environmental, Inc.
EP USA 005

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065219

MB Sample Id: 7663470-1-BLK

Matrix: Solid

LCS Sample Id: 7663470-1-BKS

Prep Method: SW5030B

Date Prep: 10.03.18

LCSD Sample Id: 7663470-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.105	105	0.101	100	70-130	4	35	mg/kg	10.03.18 08:13	
Toluene	<0.00201	0.100	0.0967	97	0.0954	94	70-130	1	35	mg/kg	10.03.18 08:13	
Ethylbenzene	<0.00201	0.100	0.110	110	0.106	105	70-130	4	35	mg/kg	10.03.18 08:13	
m,p-Xylenes	<0.00402	0.201	0.219	109	0.211	104	70-130	4	35	mg/kg	10.03.18 08:13	
o-Xylene	<0.00201	0.100	0.109	109	0.106	105	70-130	3	35	mg/kg	10.03.18 08:13	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		114		96		70-130	%	10.03.18 08:13
4-Bromofluorobenzene	76		100		97		70-130	%	10.03.18 08:13

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065219

Parent Sample Id: 600489-004

Matrix: Soil

MS Sample Id: 600489-004 S

Prep Method: SW5030B

Date Prep: 10.03.18

MSD Sample Id: 600489-004 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	0.101	0.0742	73	0.0242	24	70-130	102	35	mg/kg	10.03.18 14:13	XF
Toluene	<0.00201	0.101	0.0664	66	0.0220	22	70-130	100	35	mg/kg	10.03.18 14:13	XF
Ethylbenzene	<0.00201	0.101	0.0744	74	0.0218	22	70-130	109	35	mg/kg	10.03.18 14:13	XF
m,p-Xylenes	<0.00102	0.201	0.148	74	0.0412	21	70-130	113	35	mg/kg	10.03.18 14:13	XF
o-Xylene	<0.00201	0.101	0.0750	74	0.0211	21	70-130	112	35	mg/kg	10.03.18 14:13	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		94		70-130	%	10.03.18 14:13
4-Bromofluorobenzene	107		82		70-130	%	10.03.18 14:13

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

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Phoenix, Arizona (480-355-0900)

Xenco Quote #	Xenco Job #

Matrix Codes

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: IT Environmental, Inc.				Project Name/Number: EP USA 005											
Company Address: 3300 N. St. Building 1 Unit 103 Midland, TX 79701				Project Location: EDPA, NM											
Email: adrian.baker@itenv.com				Phone No: (432) 704-5178				Invoice To: IT Environmental, Inc - Adrian Baker							
Project Contact: Adrian Baker				PO Number: 034818008											
Samples Name: Leachate															
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	SS01	6"	09/26	12:30	S	1									
2	SS01	1'		12:35	S	1									
3	SS02	6"		12:40	S	1									
4	SS02	1'		12:45	S	1									
5	SS03	6"		12:50	S	1									
6	SS03	1'		12:55	S	1									
7															
8															
9															
10															
Turnaround Time (Business days)				Data Deliverable Information				Notes:							
☐ Same Day TAT				☐ 5 Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg / raw data)			
☐ Next Day EMERGENCY				☐ 7 Day TAT				☐ Level III Std QC + Forms				☐ TRRP Level IV			
☐ 2 Day EMERGENCY				☒ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG -411			
☐ 3 Day EMERGENCY								☐ 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 Sample:				Date Time: 9/26/15 15:00				Received By: [Signature]				Date Time: 9/27/15 10:34			
Relinquished by:				Date Time: 9/26/15 15:00				Received By: [Signature]				Date Time: 9/27/15 10:34			
3				Date Time: 9/26/15 15:00				Received By: [Signature]				Date Time: 9/27/15 10:34			
Relinquished by:				Date Time: 9/26/15 15:00				Received By: [Signature]				Date Time: 9/27/15 10:34			
5				Date Time: 9/26/15 15:00				Received By: [Signature]				Date Time: 9/27/15 10:34			
On Ice				Cooler Temp. 0.3				Therm. Corr. Factor 1020.0							

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 cancelled unless previously negotiated under a fully executed client contract.

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UNITED STATES US

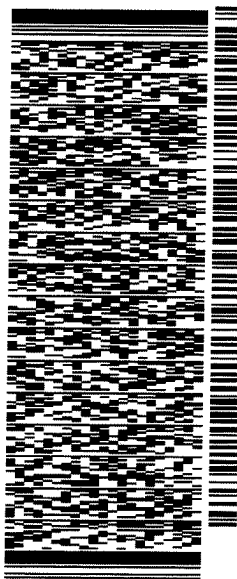
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ACTWGT: 40.00 LB
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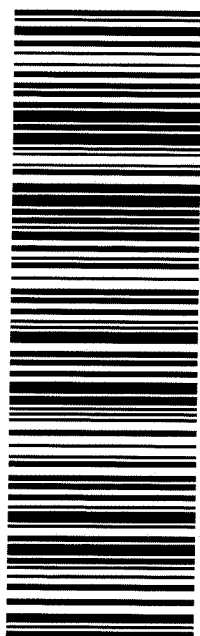


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STANDARD OVERNIGHT

41 MAFA

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 09/27/2018 10:34:00 AM

Work Order #: 600488

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)?	.3	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	No	
#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	TPH received in bulk container
#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)?	No	
#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

Brianna Teel

Date: 09/27/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 09/28/2018

Analytical Report 600489

for
LT Environmental, Inc.

Project Manager: Adrian Baker

EP USA 005

03-OCT-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 (T104704400-18-18)
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)



03-OCT-18

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **600489**

EP USA 005

Project Address: Eddy, 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) 600489. 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. 600489 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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Sample Cross Reference 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	09-26-18 11:05	2 ft	600489-001
SW02	S	09-26-18 11:10	2 ft	600489-002
SW03	S	09-26-18 11:15	2 ft	600489-003
FS01	S	09-26-18 11:45	4 ft	600489-004
FS02	S	09-26-18 11:50	4 ft	600489-005
FS03	S	09-26-18 11:55	4 ft	600489-006
FS04	S	09-26-18 12:00	4 ft	600489-007



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: EP USA 005

Project ID:
Work Order Number(s): 600489

Report Date: 03-OCT-18
Date Received: 09/27/2018

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3065147 BTEX by EPA 8021B

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

Batch: LBA-3065219 BTEX by EPA 8021B

Lab Sample ID 600489-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Toluene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Benzene, Ethylbenzene, 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: 600489-003, -004, -005, -006, -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.

Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 600489-003, -004, -005, -006, -007



Certificate of Analysis Summary 600489

LT Environmental, Inc., Arvada, CO

Project Name: EP USA 005



Project Id:

Contact: Adrian Baker

Project Location: Eddy, NM

Date Received in Lab: Thu Sep-27-18 10:34 am

Report Date: 03-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	600489-001	600489-002	600489-003	600489-004	600489-005	600489-006
	Field Id:	SW01	SW02	SW03	FS01	FS02	FS03
	Depth:	2- ft	2- ft	2- ft	4- ft	4- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Sep-26-18 11:05	Sep-26-18 11:10	Sep-26-18 11:15	Sep-26-18 11:45	Sep-26-18 11:50	Sep-26-18 11:55
BTEX by EPA 8021B	Extracted:	Oct-02-18 15:00	Oct-02-18 15:00	Oct-03-18 08:00	Oct-03-18 08:00	Oct-03-18 08:00	Oct-03-18 08:00
	Analyzed:	Oct-03-18 01:08	Oct-03-18 01:29	Oct-03-18 13:09	Oct-03-18 10:19	Oct-03-18 13:30	Oct-03-18 13:51
	Units/RL:	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	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199
m,p-Xylenes		<0.00399 0.00399	<0.00404 0.00404	<0.00398 0.00398	<0.00402 0.00402	<0.00402 0.00402	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199
Inorganic Anions by EPA 300	Extracted:	Oct-01-18 09:15	Oct-01-18 09:15	Oct-01-18 09:15	Oct-01-18 09:15	Oct-01-18 09:15	Oct-01-18 09:15
	Analyzed:	Oct-01-18 11:15	Oct-01-18 11:21	Oct-01-18 11:26	Oct-01-18 11:32	Oct-01-18 11:38	Oct-01-18 12:01
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		366 50.1	563 4.97	1780 25.0	1900 49.5	1910 50.5	1080 49.5
TPH by SW8015 Mod	Extracted:	Sep-28-18 16:00	Sep-28-18 16:00	Sep-28-18 16:00	Sep-28-18 16:00	Sep-28-18 16:00	Sep-28-18 17:00
	Analyzed:	Sep-29-18 02:10	Sep-29-18 02:29	Sep-29-18 02:48	Sep-29-18 03:08	Sep-29-18 03:27	Sep-29-18 09:36
	Units/RL:	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
Motor Oil Range Hydrocarbons (MRO)		<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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 600489

LT Environmental, Inc., Arvada, CO

Project Name: EP USA 005



Project Id:

Contact: Adrian Baker

Project Location: Eddy, NM

Date Received in Lab: Thu Sep-27-18 10:34 am

Report Date: 03-OCT-18

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	600489-007					
	Field Id:	FS04					
	Depth:	4- ft					
	Matrix:	SOIL					
	Sampled:	Sep-26-18 12:00					
BTEX by EPA 8021B	Extracted:	Oct-03-18 08:00					
	Analyzed:	Oct-03-18 15:18					
	Units/RL:	mg/kg RL					
Benzene		<0.00200 0.00200					
Toluene		<0.00200 0.00200					
Ethylbenzene		<0.00200 0.00200					
m,p-Xylenes		<0.00399 0.00399					
o-Xylene		<0.00200 0.00200					
Total Xylenes		<0.00200 0.00200					
Total BTEX		<0.00200 0.00200					
Inorganic Anions by EPA 300	Extracted:	Oct-01-18 09:15					
	Analyzed:	Oct-01-18 12:06					
	Units/RL:	mg/kg RL					
Chloride		1960 101					
TPH by SW8015 Mod	Extracted:	Sep-28-18 17:00					
	Analyzed:	Sep-29-18 10:33					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0					
Diesel Range Organics (DRO)		<15.0 15.0					
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0					
Total TPH		<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 Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **SW01**
Lab Sample Id: 600489-001

Matrix: Soil
Date Collected: 09.26.18 11.05

Date Received: 09.27.18 10.34
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064901

Date Prep: 10.01.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	366	50.1	mg/kg	10.01.18 11.15		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064912

Date Prep: 09.28.18 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	09.29.18 02.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.29.18 02.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 02.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.29.18 02.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	09.29.18 02.10	
o-Terphenyl	84-15-1	92	%	70-135	09.29.18 02.10	



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **SW01**
Lab Sample Id: 600489-001

Matrix: Soil
Date Collected: 09.26.18 11.05

Date Received: 09.27.18 10.34
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.02.18 15.00

Basis: Wet Weight

Seq Number: 3065147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.03.18 01.08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.03.18 01.08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.03.18 01.08	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.03.18 01.08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.03.18 01.08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.03.18 01.08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.03.18 01.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.03.18 01.08		
4-Bromofluorobenzene	460-00-4	99	%	70-130	10.03.18 01.08		



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **SW02**
Lab Sample Id: 600489-002

Matrix: Soil
Date Collected: 09.26.18 11.10

Date Received: 09.27.18 10.34
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064901

Date Prep: 10.01.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	563	4.97	mg/kg	10.01.18 11.21		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064912

Date Prep: 09.28.18 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	09.29.18 02.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.29.18 02.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 02.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.29.18 02.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	09.29.18 02.29	
o-Terphenyl	84-15-1	86	%	70-135	09.29.18 02.29	



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **SW02**
Lab Sample Id: 600489-002

Matrix: Soil
Date Collected: 09.26.18 11.10

Date Received: 09.27.18 10.34
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.02.18 15.00

Basis: Wet Weight

Seq Number: 3065147

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.03.18 01.29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.03.18 01.29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.03.18 01.29	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.03.18 01.29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.03.18 01.29	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.03.18 01.29	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.03.18 01.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.03.18 01.29		
4-Bromofluorobenzene	460-00-4	97	%	70-130	10.03.18 01.29		



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **SW03**
Lab Sample Id: 600489-003

Matrix: Soil
Date Collected: 09.26.18 11.15

Date Received: 09.27.18 10.34
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064901

Date Prep: 10.01.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1780	25.0	mg/kg	10.01.18 11.26		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064912

Date Prep: 09.28.18 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	09.29.18 02.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.29.18 02.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 02.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.29.18 02.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.29.18 02.48	
o-Terphenyl	84-15-1	92	%	70-135	09.29.18 02.48	



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **SW03**
Lab Sample Id: 600489-003

Matrix: Soil
Date Collected: 09.26.18 11.15

Date Received: 09.27.18 10.34
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.03.18 08.00

Basis: Wet Weight

Seq Number: 3065219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.03.18 13.09	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.03.18 13.09	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.03.18 13.09	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.03.18 13.09	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.03.18 13.09	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.03.18 13.09	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.03.18 13.09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	79	%	70-130	10.03.18 13.09		
1,4-Difluorobenzene	540-36-3	95	%	70-130	10.03.18 13.09		



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **FS01** Matrix: Soil Date Received: 09.27.18 10.34
Lab Sample Id: 600489-004 Date Collected: 09.26.18 11.45 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: SCM % Moisture:
Analyst: CHE Date Prep: 10.01.18 09.15 Basis: Wet Weight
Seq Number: 3064901

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1900	49.5	mg/kg	10.01.18 11.32		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 09.28.18 16.00 Basis: Wet Weight
Seq Number: 3064912

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.29.18 03.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.29.18 03.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 03.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.29.18 03.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.29.18 03.08	
o-Terphenyl	84-15-1	91	%	70-135	09.29.18 03.08	



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **FS01**
Lab Sample Id: 600489-004

Matrix: Soil
Date Collected: 09.26.18 11.45

Date Received: 09.27.18 10.34
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.03.18 08.00

Basis: Wet Weight

Seq Number: 3065219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.03.18 10.19	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.03.18 10.19	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.03.18 10.19	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.03.18 10.19	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.03.18 10.19	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.03.18 10.19	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.03.18 10.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	80	%	70-130	10.03.18 10.19		
4-Bromofluorobenzene	460-00-4	97	%	70-130	10.03.18 10.19		



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **FS02**
Lab Sample Id: 600489-005

Matrix: Soil
Date Collected: 09.26.18 11.50

Date Received: 09.27.18 10.34
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064901

Date Prep: 10.01.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1910	50.5	mg/kg	10.01.18 11.38		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064912

Date Prep: 09.28.18 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	09.29.18 03.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.29.18 03.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 03.27	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.29.18 03.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	09.29.18 03.27	
o-Terphenyl	84-15-1	88	%	70-135	09.29.18 03.27	



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **FS02**
Lab Sample Id: 600489-005

Matrix: Soil
Date Collected: 09.26.18 11.50

Date Received: 09.27.18 10.34
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 10.03.18 08.00

Basis: Wet Weight

Seq Number: 3065219

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.03.18 13.30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.03.18 13.30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.03.18 13.30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.03.18 13.30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.03.18 13.30	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.03.18 13.30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.03.18 13.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	85	%	70-130	10.03.18 13.30		
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.03.18 13.30		



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **FS03**
Lab Sample Id: 600489-006

Matrix: Soil
Date Collected: 09.26.18 11.55

Date Received: 09.27.18 10.34
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064901

Date Prep: 10.01.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1080	49.5	mg/kg	10.01.18 12.01		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064919

Date Prep: 09.28.18 17.00

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	09.29.18 09.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.29.18 09.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 09.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.29.18 09.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.29.18 09.36	
o-Terphenyl	84-15-1	91	%	70-135	09.29.18 09.36	



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **FS03**
Lab Sample Id: 600489-006

Matrix: Soil
Date Collected: 09.26.18 11.55

Date Received: 09.27.18 10.34
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065219

Date Prep: 10.03.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.03.18 13.51	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.03.18 13.51	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.03.18 13.51	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.03.18 13.51	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.03.18 13.51	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.03.18 13.51	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.03.18 13.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.03.18 13.51		
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.03.18 13.51		



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **FS04**
Lab Sample Id: 600489-007

Matrix: Soil
Date Collected: 09.26.18 12.00

Date Received: 09.27.18 10.34
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: CHE

Seq Number: 3064901

Date Prep: 10.01.18 09.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1960	101	mg/kg	10.01.18 12.06		20

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3064919

Date Prep: 09.28.18 17.00

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	09.29.18 10.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.29.18 10.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	09.29.18 10.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	09.29.18 10.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	09.29.18 10.33	
o-Terphenyl	84-15-1	92	%	70-135	09.29.18 10.33	



Certificate of Analytical Results 600489



LT Environmental, Inc., Arvada, CO

EP USA 005

Sample Id: **FS04**
Lab Sample Id: 600489-007

Matrix: Soil
Date Collected: 09.26.18 12.00

Date Received: 09.27.18 10.34
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3065219

Date Prep: 10.03.18 08.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.03.18 15.18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.03.18 15.18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.03.18 15.18	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.03.18 15.18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.03.18 15.18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.03.18 15.18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.03.18 15.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.03.18 15.18		
4-Bromofluorobenzene	460-00-4	103	%	70-130	10.03.18 15.18		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 600489

LT Environmental, Inc. EP USA 005

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064901

MB Sample Id: 7663267-1-BLK

Matrix: Solid

LCS Sample Id: 7663267-1-BKS

Prep Method: E300P

Date Prep: 10.01.18

LCSD Sample Id: 7663267-1-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	258	103	259	104	90-110	0	20	mg/kg	10.01.18 10:13	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064901

Parent Sample Id: 600488-005

Matrix: Soil

MS Sample Id: 600488-005 S

Prep Method: E300P

Date Prep: 10.01.18

MSD Sample Id: 600488-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1200	253	1400	79	1400	79	90-110	0	20	mg/kg	10.01.18 11:49	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3064901

Parent Sample Id: 600661-012

Matrix: Soil

MS Sample Id: 600661-012 S

Prep Method: E300P

Date Prep: 10.01.18

MSD Sample Id: 600661-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	247	99	248	99	90-110	0	20	mg/kg	10.01.18 10:30	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064912

MB Sample Id: 7663248-1-BLK

Matrix: Solid

LCS Sample Id: 7663248-1-BKS

Prep Method: TX1005P

Date Prep: 09.28.18

LCSD Sample Id: 7663248-1-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	987	99	1080	108	70-135	9	20	mg/kg	09.28.18 19:29	
Diesel Range Organics (DRO)	<8.13	1000	1000	100	1080	108	70-135	8	20	mg/kg	09.28.18 19:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		120		125		70-135	%	09.28.18 19:29
o-Terphenyl	100		114		115		70-135	%	09.28.18 19:29

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

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

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

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



QC Summary 600489

LT Environmental, Inc.

EP USA 005

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064919

MB Sample Id: 7663251-1-BLK

Matrix: Solid

LCS Sample Id: 7663251-1-BKS

Prep Method: TX1005P

Date Prep: 09.28.18

LCSD Sample Id: 7663251-1-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	1020	102	930	93	70-135	9	20	mg/kg	09.29.18 08:58	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	941	94	70-135	10	20	mg/kg	09.29.18 08:58	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	109		117		111		70-135	%	09.29.18 08:58			
o-Terphenyl	112		113		98		70-135	%	09.29.18 08:58			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064912

Parent Sample Id: 600266-005

Matrix: Soil

MS Sample Id: 600266-005 S

Prep Method: TX1005P

Date Prep: 09.28.18

MSD Sample Id: 600266-005 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	999	965	97	981	98	70-135	2	20	mg/kg	09.28.18 20:26	
Diesel Range Organics (DRO)	<8.12	999	987	99	1010	101	70-135	2	20	mg/kg	09.28.18 20:26	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			115			116			70-135	%	09.28.18 20:26	
o-Terphenyl			102			104			70-135	%	09.28.18 20:26	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3064919

Parent Sample Id: 600489-006

Matrix: Soil

MS Sample Id: 600489-006 S

Prep Method: TX1005P

Date Prep: 09.28.18

MSD Sample Id: 600489-006 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)	8.67	999	987	98	974	97	70-135	1	20	mg/kg	09.29.18 09:55	
Diesel Range Organics (DRO)	<8.12	999	1010	101	1000	100	70-135	1	20	mg/kg	09.29.18 09:55	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			118			115			70-135	%	09.29.18 09:55	
o-Terphenyl			100			96			70-135	%	09.29.18 09:55	

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.
EP USA 005

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065147

MB Sample Id: 7663421-1-BLK

Matrix: Solid

LCS Sample Id: 7663421-1-BKS

Prep Method: SW5030B

Date Prep: 10.02.18

LCSD Sample Id: 7663421-1-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	0.0806	80	0.0858	85	70-130	6	35	mg/kg	10.02.18 18:24	
Toluene	<0.00202	0.101	0.0762	75	0.0825	82	70-130	8	35	mg/kg	10.02.18 18:24	
Ethylbenzene	<0.00202	0.101	0.0860	85	0.0947	94	70-130	10	35	mg/kg	10.02.18 18:24	
m,p-Xylenes	<0.00102	0.202	0.167	83	0.189	94	70-130	12	35	mg/kg	10.02.18 18:24	
o-Xylene	<0.00202	0.101	0.0856	85	0.0948	94	70-130	10	35	mg/kg	10.02.18 18:24	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	96		106		100		70-130			%	10.02.18 18:24	
4-Bromofluorobenzene	90		102		105		70-130			%	10.02.18 18:24	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065219

MB Sample Id: 7663470-1-BLK

Matrix: Solid

LCS Sample Id: 7663470-1-BKS

Prep Method: SW5030B

Date Prep: 10.03.18

LCSD Sample Id: 7663470-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.105	105	0.101	100	70-130	4	35	mg/kg	10.03.18 08:13	
Toluene	<0.00201	0.100	0.0967	97	0.0954	94	70-130	1	35	mg/kg	10.03.18 08:13	
Ethylbenzene	<0.00201	0.100	0.110	110	0.106	105	70-130	4	35	mg/kg	10.03.18 08:13	
m,p-Xylenes	<0.00402	0.201	0.219	109	0.211	104	70-130	4	35	mg/kg	10.03.18 08:13	
o-Xylene	<0.00201	0.100	0.109	109	0.106	105	70-130	3	35	mg/kg	10.03.18 08:13	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	91		114		96		70-130			%	10.03.18 08:13	
4-Bromofluorobenzene	76		100		97		70-130			%	10.03.18 08:13	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065147

Parent Sample Id: 600989-001

Matrix: Soil

MS Sample Id: 600989-001 S

Prep Method: SW5030B

Date Prep: 10.02.18

MSD Sample Id: 600989-001 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	0.0724	72	0.0845	85	70-130	15	35	mg/kg	10.02.18 19:07	
Toluene	<0.00200	0.100	0.0660	66	0.0758	76	70-130	14	35	mg/kg	10.02.18 19:07	X
Ethylbenzene	<0.00200	0.100	0.0676	68	0.0785	79	70-130	15	35	mg/kg	10.02.18 19:07	X
m,p-Xylenes	<0.00401	0.200	0.131	66	0.154	77	70-130	16	35	mg/kg	10.02.18 19:07	X
o-Xylene	<0.00200	0.100	0.0672	67	0.0791	79	70-130	16	35	mg/kg	10.02.18 19:07	X
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits		Units	Analysis Date		
1,4-Difluorobenzene			110		101		70-130		%	10.02.18 19:07		
4-Bromofluorobenzene			106		100		70-130		%	10.02.18 19:07		

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



QC Summary 600489

LT Environmental, Inc. EP USA 005

Analytical Method: BTEX by EPA 8021B

Seq Number: 3065219

Parent Sample Id: 600489-004

Matrix: Soil

MS Sample Id: 600489-004 S

Prep Method: SW5030B

Date Prep: 10.03.18

MSD Sample Id: 600489-004 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	0.101	0.0742	73	0.0242	24	70-130	102	35	mg/kg	10.03.18 14:13	XF
Toluene	<0.00201	0.101	0.0664	66	0.0220	22	70-130	100	35	mg/kg	10.03.18 14:13	XF
Ethylbenzene	<0.00201	0.101	0.0744	74	0.0218	22	70-130	109	35	mg/kg	10.03.18 14:13	XF
m,p-Xylenes	<0.00102	0.201	0.148	74	0.0412	21	70-130	113	35	mg/kg	10.03.18 14:13	XF
o-Xylene	<0.00201	0.101	0.0750	74	0.0211	21	70-130	112	35	mg/kg	10.03.18 14:13	XF

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		94		70-130	%	10.03.18 14:13
4-Bromofluorobenzene	107		82		70-130	%	10.03.18 14:13

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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1001-104

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: <u>LT Environmental, Inc. Polina Office</u>				Project Name/Number: <u>EP USA 005</u>											
Company Address: <u>3200 NW 8th St. Building 1 Unit 103 Midland, TX 79702</u>				Project Location: <u>EDDY, NM</u>											
Email: <u>ababec@ltenv.com</u> Phone No: <u>(432) 704-5178</u>				Invoice To: <u>LT Environmental - Adria Baker</u>											
Project Contact: <u>Adria Baker</u>				PO Number: <u>034818008</u>											
Sampler's Name															
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	SW01	2'	09/26	11:05	S	1									are depth
2	SW02	2'		11:10	S	1									
3	SW03	2'		11:15	S	1									
4	FS01	4'		11:45	S	1									
5	FS02	4'		11:50	S	1									
6	FS03	4'		11:55	S	1									
7	FS04	4'		12:00	S	1									
8															
9															
10															
Turnaround Time (Business days)															
Data Deliverable Information															
Notes:															
Same Day TAT ☐ 5 Day TAT ☐ Level II Std QC ☐ Level IV (Full Data Pkg / raw data) ☐															
Next Day EMERGENCY ☐ 7 Day TAT ☐ Level III Std QC+ Forms ☐ TRRP Level IV ☐															
2 Day EMERGENCY ☒ Contract TAT ☐ Level 3 (CLP Forms) ☐ UST / RG 411 ☐															
3 Day EMERGENCY ☐ 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 CARRIER DELIVERY															
Relinquished by Sampler:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:	
1		09/26/18 15:00		1		2		09/26/18 10:24		3		09/26/18 10:24		4	
Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:	
3				3		4				4				4	
Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:	
5				5		6				6				6	
Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:	

Notes: 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.

ORIGIN ID:CAOA (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST
CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 26SEP18
ACTWGT: 40.00 LB
CAD: 10181308/NET4040
DIMS: 18x12x15 IN
BILL RECIPIENT

TO HOLD FOR XENCO

FEDEX EXPRESS SHIP CENTER
FEDEX SHIP CENTER
3600 COUNTY RD 1276 S

MIDLAND TX 79711

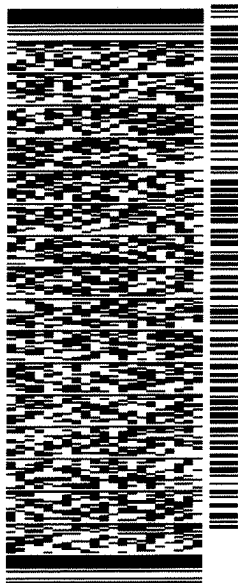
(806) 794-1296

REF:

INV:

DEPT:

552J1/F78C/DCA5



THU - 27 SEP HOLD

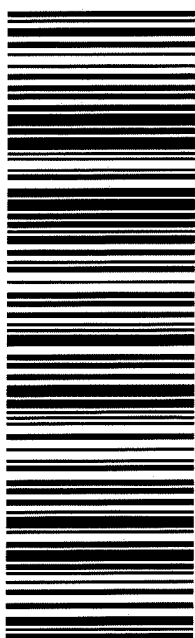
STANDARD OVERNIGHT

TRK# 7733 3400 9590

HLD

41 MAFA

MAFA
TX-US LBB



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. 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 ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 09/27/2018 10:34:00 AM

Work Order #: 600489

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

Brianna Teel

Date: 09/27/2018

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 09/28/2018