

LT Environmental, Inc.

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

October 4, 2019

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

RE: Closure Request

Big Eddy Unit #74 Tank Battery Remediation Permit Numbers 2RP-2664 and 2RP-3213 Eddy County, New Mexico

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request report detailing soil sampling and excavation activities at the Big Eddy Unit #74 Tank Battery (Site) in Unit B, Section 25, Township 21 South, Range 28 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following two separate events that caused the release of produced water and crude oil at the Site. Based on the excavation activities and results of the soil sampling events, XTO is submitting this Closure Request, describing remediation that has occurred and requesting no further action for the release events.

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

RELEASE BACKGROUND

On December 4, 2014, a valve on the production tank coming from the water dump line was closed and the float valve on the scrubber failed causing approximately 1 barrel (bbl) of crude oil and 4 bbls of produced water to release from the flare stack. The release misted approximately 500 square feet of pasture and pooled in an area of approximately 648 square feet within the earthen containment surrounding the flare stack. Micro-Blaze® was applied to the affected pasture area. Approximately 1 bbl of released fluid was recovered. The closed valve was opened, and the float valve was repaired. The former operator reported the release to the NMOCD on a





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Release Notification and Corrective Action Form C-141 (Form C-141) on December 15, 2014, and was assigned Remediation Permit (RP) Number 2RP-2664 (Attachment 1).

On August 13, 2015, a second release occurred at the Site (south of previous release 2RP-2664). A heater began leaking from a corroded bottom and released approximately 12 bbls of crude oil. Approximately 545 square feet of caliche well pad were affected by the release. A vacuum truck recovered approximately 10 bbls of crude oil. The heater was drained, cleaned, and removed from service so that it could be replaced by an operational heater. The former operator reported the release to NMOCD on a Form C-141 on August 17, 2015, and was assigned RP Number 2RP-3213 (Attachment 1).

Although the releases occurred while the facility was operated by the previous operator, XTO is the current operator and is committed to addressing any releases that remain unresolved. Since both releases occurred on the same well pad, excavation and sampling activities were completed to address and close both releases simultaneously. Based on the excavation activities and results of the confirmation soil sampling events, XTO is requesting no further action for these two release events.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of 19.15.29.12 of the NMAC. Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) Well 322632104023001 21A.28E.36.12321, located approximately 4,527 feet south-southwest of the Site. The water well has a depth to groundwater of 141 feet bgs and a total depth of 161 feet bgs. Ground surface elevation at the water well location is approximately 3,200 feet above mean sea level (AMSL), which is approximately 35 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 540 feet southeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not located in a medium or high-potential karst area.

CLOSURE CRITERIA

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg;





Billings, B. Page 3

- TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg;
- Total petroleum hydrocarbons (TPH): 2,500 mg/kg; and

Chloride: 20,000 mg/kg.

SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

On June 14, 2019, LTE personnel inspected the Site to evaluate the release extents based on information provided on the Form C141s and visual observations. Surficial staining was observed in the release areas on the well pad. The release extents were mapped utilizing a handheld Global Positing System (GPS) unit and are depicted on Figure 2.

On June 17, 2019, LTE personnel returned to the Site to oversee excavation of soil as indicated by visual observations and field screening results. The excavation associated with the flare stack release was completed in the northeast corner of the pad. The excavation associated with the heater release was completed adjacent to the heater-treaters. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavations. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing.

Composite soil samples SW01 and SW02 were collected from the sidewalls of the flare release excavation at depths ranging from ground surface to 1.5 feet bgs. Composite soil samples FS01 and FS02 were collected from the floor of the flare release excavation at a depth of 1.5 feet bgs.

Composite soil samples SW03 and SW04 were collected from the sidewalls of the heater release excavation at depths ranging from ground surface to 1 foot bgs. Composite soil samples FS03 through FS05 were collected from the floor of the heater release excavation at a depth of 1 foot bgs. The excavation extents and soil sample locations are depicted on Figure 2.

On June 17 and June 18, 2019, LTE personnel advanced boreholes via hand auger at six locations within and around the release extents. Boreholes BH01 and BH02 were advanced in the pasture area north of the well pad to a depth of 1 foot bgs or 1.5 feet bgs to assess for additional potential soil impacts associated with the flare release. Boreholes BH03 through BH05 were advanced around the heater treaters to a depth of 3 feet or 4 feet bgs to assess for additional potential soil impacts associated with the heater release. Two delineation soil samples were collected from each borehole at depths ranging from 0.5 feet to 4 feet bgs. Soil from the boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach© chloride QuanTab© test strips, respectively. Field screening results and observations for each borehole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The borehole and delineation soil sample locations are depicted on Figure 3.





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The excavation and delineation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 3.

The combined excavation extents measured approximately 1,700 square feet in area. A total of approximately 100 cubic yards of impacted soil were removed from the excavations. The impacted soil was transported and properly disposed of at the Lea Land landfill facility located in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in the excavation soil samples collected from the final excavation extents and in all delineation soil samples collected from boreholes BH01 through BH06. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

CLOSURE REQUEST

Impacted soil was excavated from the release areas. Laboratory analytical results for the excavation soil samples collected from the final excavation extents indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Delineation soil sampling was completed in and around the release extents to confirm that all impacted soil was removed. Laboratory analytical results for the delineation soil samples indicated that benzene, BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Based on the laboratory analytical results, and no further remediation was required.

Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for RP Numbers 2RP-2664 and 2RP-3213. XTO will backfill the excavations with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 for each release is included in Attachment 1.

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





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Sincerely,

LT ENVIRONMENTAL, INC.

Bryan Paraspolo

Dyn Ful

Project Environmental Scientist

Ashley L. Ager, P.G. Senior Geologist

ashley L. ager

cc: Kyle Littrell, XTO

Bureau of Land Management Mike Bratcher, NMOCD

Attachments:

Figure 1 Site Location Map

Figure 2 Excavation Soil Sample Locations
Figure 3 Delineation Soil Sample Locations

Table 1 Soil Analytical Results

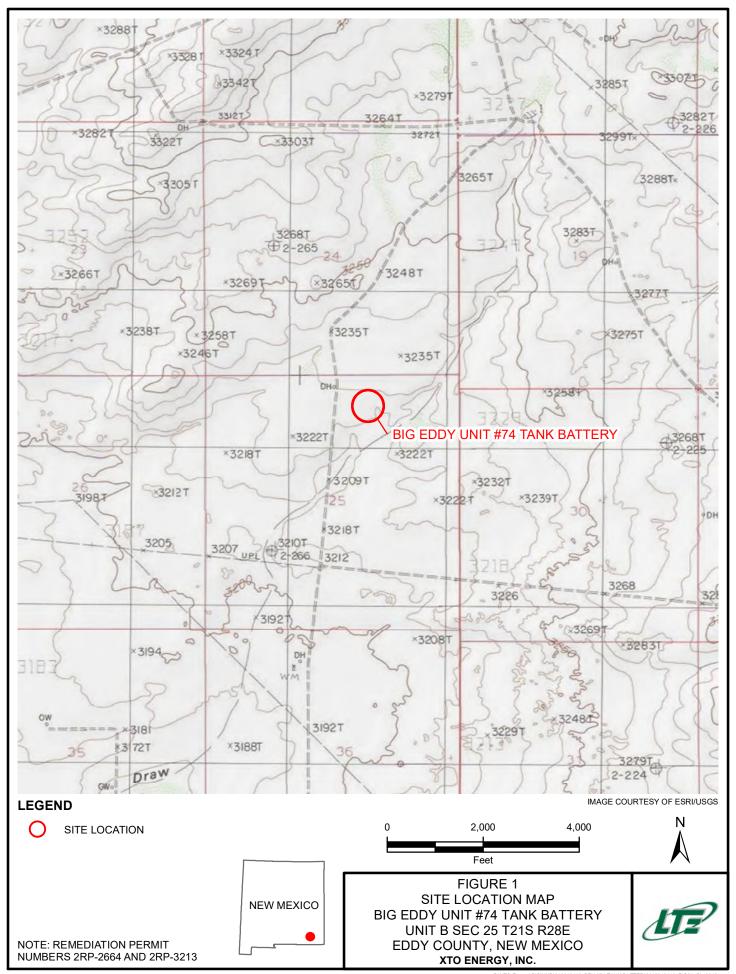
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-2664 and 2RP-3213)

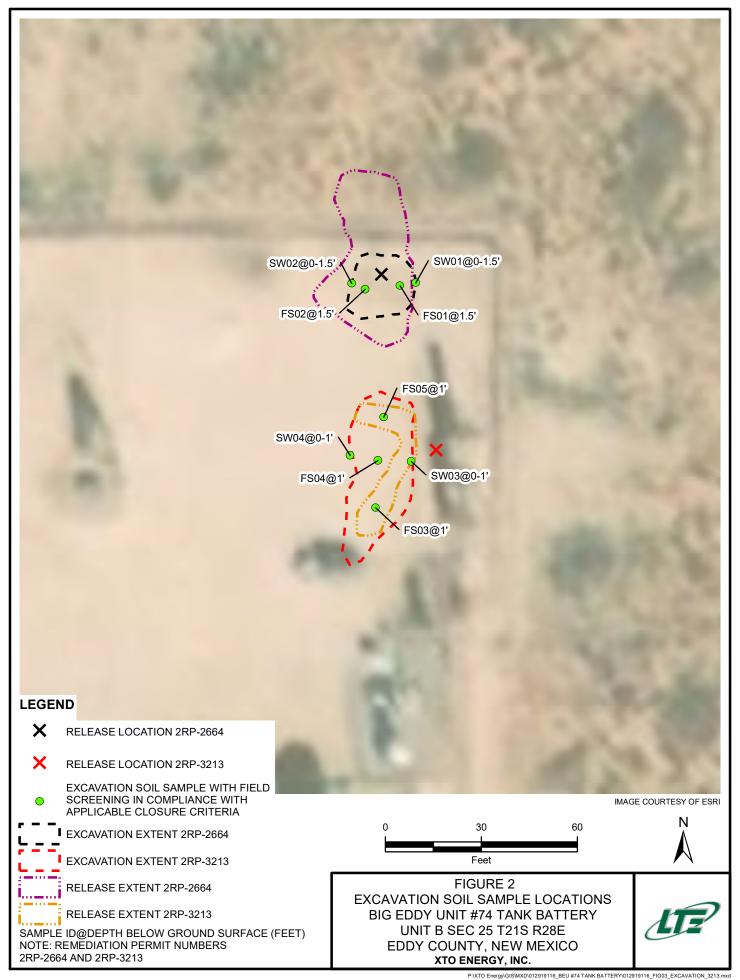
Attachment 2 Lithologic / Soil Sample Logs

Attachment 3 Photographic Log

Attachment 4 Laboratory Analytical Reports







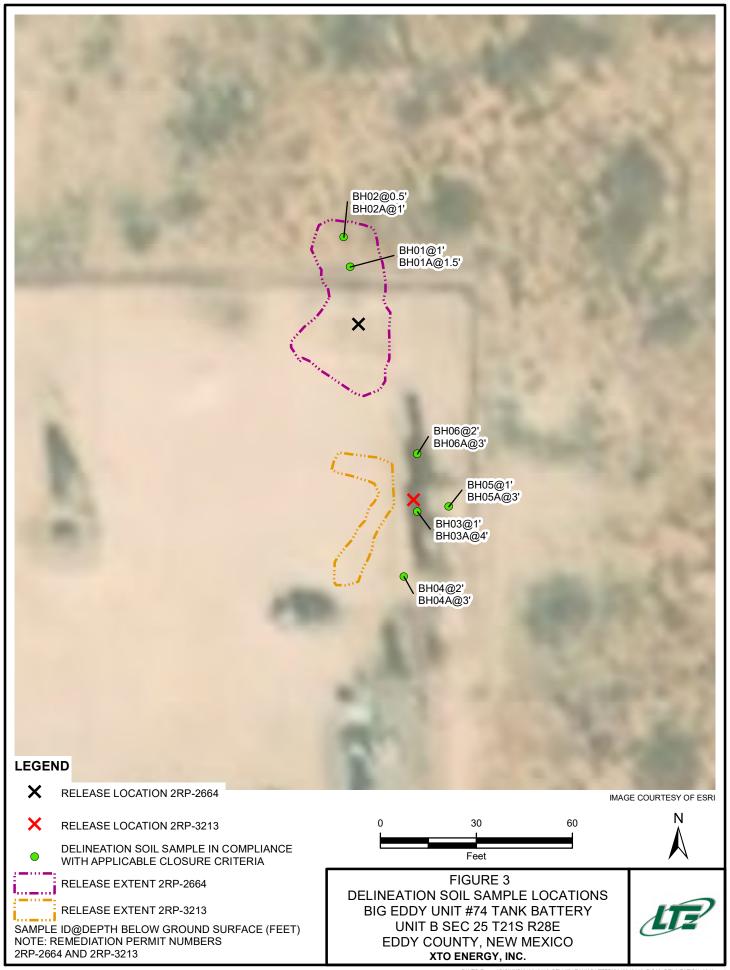


TABLE 1 **SOIL ANALYTICAL RESULTS**

BIG EDDY UNIT #74 TANK BATTERY REMEDIATION PERMIT NUMBERS 2RP-2664 AND 2RP-3213 EDDY COUNTY, NEW MEXICO XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SW01	0-1.5	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	170
SW02	0-1.5	06/17/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	348
SW03	0-1	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	132	18.1	150	150.1	15.5
SW04	0-1	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
FS01	1.5	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	237
FS02	1.5	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	319
FS03	1	06/17/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<5.02
FS04	1	06/17/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
FS05	1	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.96
BH01	1	06/17/2019	< 0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
BH01A	1.5	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	6.77
BH02	0.5	06/17/2019	< 0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<5.00
BH02A	1	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	<5.00
BH03	1	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	493	78.1	571	571.1	186
BH03A	4	06/18/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	19.5	<15.0	19.5	19.5	98.2
BH04	2	06/18/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	47.8
BH04A	3	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	201
BH05	1	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	5.95
BH05A	3	06/18/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	9.93
BH06	2	06/18/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	104
BH06A	3	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	117
NMOCD	Table 1 Closur	e Criteria	10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

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

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

NE - not established

ORO - oil range organics

TPH - total petroleum hydrocarbons

Bold - indicates result exceeds the applicable regulatory standard

< - indicates result is below laboratory reporting limits

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



Received by OCD: 2/20/2023 1:15:29 PM

Received by OCD: 2/20/2023 1:15:29 PM

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

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

NM OIL CONSERVATION $^{Page\ 13\ of\ 130}$

ARTESIA DISTRICT

Form C-141

DEC 1 5 2014 Revised August 8, 2011

Submit 1 Copy to appropriate District Office in RECEIVED NMAC.

			Rele	ease Notific	ation	and Co	rrective A	ction				
NAB14				11.140 ×	-	OPERA'			Initial	al Report		Final Report
Name of Co			04 Carls	20072		Contact: Tony Savoie Telephone No. 575-887-7329						
	the state of the s						e: Exploration a		duction		-	
Surface Ow	ner: Feder	al		Mineral O	wner: F	ederal			API No	. 30-015-2	2839	
				LOCA	TION	OF REI	EASE					
Unit Letter B	it Letter Section Township Range Feet from the North/			South Line	Feet from the	East/W	est Line	County Eddy				
							e W 103.037608	8				***
Town of Dala	C1- (\(\frac{1}{2} = \frac{1}{2} =	J	NAT	URE	OF REL	EASE Release: 1 Bbl cr	da	Valuma	Recovered:	hhl tot	ol fluid
Type of Rele	ase: Crude (on and produ	ced water			101704004400004004004	bls produced water		v olume i	Recovered:	i bbi tot	ai fiuid
Source of Re	lease: Facili	ty flare stack					lour of Occurrenc ne unknown	e:		Hour of Dis t approxima		
Was Immedia	ate Notice C			_		If YES, To			12/4/14 0	сарргохина	iciy 1.0	o p.m.
D. Wil. O.			Yes L	No Not Re	equired	D . 17	I was to					
By Whom? Was a Water	course Reac	hed?	****			Date and H	lour olume Impacting t	the Wate	rcourse.			
			Yes 🗵] No								
If a Watercou	irse was Im	pacted, Descr	ibe Fully.	*								
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		em and Reme d on the produ		n Taken, k coming from the	water d	ump line, the	e float valve failed	d on the	scrubber c	ausing fluid	to escap	oe from the
flare stack. T	he closed va	alve was open	ed and the	e float valve was r	epaired.							
		and Cleanup / mately 500 sq		ken.* ture area and pudo	lled up in	n an area of a	approximately 648	8 sq.ft. o	f earthen c	ontainment	around 1	the flare
stack. The pa	isture area w	vas washed do	wn with i	nicro-blaze. All of to the NMOCD an	f the free	standing flu	id was recovered	with a v	acuum tru	ck.		
				e is true and comp nd/or file certain r								
				ce of a C-141 repo								
or the enviro	nment. In a	ddition, NMC	CD accep	otance of a C-141								
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		9	10				OIL CON	SERV	ATION	DIVISIO	JIN	
Signature:	(gu	2 Xas	wv			Annroved by	En Signada Bat S	A Sil	, K.			
Printed Name	e: Tony Sav	oie		an a		тррготей бу	LINIOHANAGI S	рестира	- NO PORT	Edest.		
Title: Waste	Managemer	nt and Remed	ation Spe	cialist		Approval Da	te:12 14 14	- I	Expiration	Date:	H	-
E-mail Addre	ess: tasavoie	@basspet.co	n		***************************************	Conditions o				Attached		
Date: 12/15/1				Phone: 432-556-8	730	emediatio	n per O.C.D. F MEDIATION F	Rules &	k Guidel Sal NC			
Attach Addi	tional Shee	ets If Necess	ary			TER THA	11111	115		2	RP	-2664

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

Responsible Party: XTO Energy, Inc

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	
District RP	2RP-2664
Facility ID	
Application ID	

Release Notification

Responsible Party

OGRID: 5380

Contact Name: Kyle Littrell				Contact T	Contact Telephone: (432)-221-7331				
Contact email: Kyle_Littrell@xtoenergy.com				Incident #	Incident #: 2RP-2664				
Contact mail NM 88220	ing address:	522 W. Mermod,	Suite 704 Carlsba	d,					
			Location	of Release S	ource				
Latitude N 32	2.456855		(NAD 83 in dec	Longitude	<u>W -103.037608</u> mal places)	8			
Site Name: B	ig Eddy Uni	t #74 Tank Battery	7	Site Type:	Production W	ell Facility			
Date Release	Discovered:	12/4/2014		API# (if ap	plicable): 30-015	5-22839			
Unit Letter	Section	Township	Range	Cour	nty]			
В	25	21S	28E	Edo					
Crude Oil			I that apply and attach	l Volume of 2	c justification for th	ne volumes provided below) overed (bbls): 0.5			
		Volume Released	. ,		Volume Recovered (bbls): 0.5				
Produced	Water	Volume Released			Volume Recovered (bbls): 0.5				
		Is the concentrate produced water >	ion of dissolved costs 10,000 mg/1?	hloride in the	ide in the Yes No				
Condensa	ite	Volume Released			Volume Recovered (bbls)				
Natural G	as	Volume Released	d (Mcf)		Volume Recovered (Mcf)				
Other (describe) Volume/Weight Released (provide unit			e units)	ts) Volume/Weight Recovered (provide units)					
	ne production			line was closed an eed water to be rele		e on the scrubber failed causing flare stack.			

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Incident ID	
District RP	2RP-2664
Facility ID	
Application ID	

Was this a major release as defined by	If YES, for what reason(s) does the responsible party consider this a major release? N/A
19.15.29.7(A) NMAC?	
☐ Yes ⊠ No	
If YES, was immediate no N/A	otice 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 rele	ease has been stopped.
The impacted area ha	s been secured to protect human health and the environment.
Released materials ha	ave been contained via the use of berms or dikes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed and managed appropriately.
If all the actions described N/A	d above have <u>not</u> been undertaken, explain why:
has begun, please attach	AC the responsible party may commence remediation immediately after discovery of a release. If remediation a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred at area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
regulations all operators are public health or the environi failed to adequately investig	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and required to report and/or file certain release notifications and perform corrective actions for releases which may endanger nent. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have at and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
Printed Name: Kylo	e Littrell Title: SH&E Supervisor
Signature:	E Littrell
email: <u>Kyle Littrell@xto</u>	energy.com Telephone: <u>432-221-7331</u>
OCD Only	
-	
Received by:	Date:

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Incident ID	
District RP	2RP-2664
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>>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 ver contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.	tical extents of soil
<u>Characterization Report Checklist</u> : 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 wel 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 	ls.
☐ Boring or excavation logs	

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.

Topographic/Aerial maps

Photographs including date and GIS information

☐ Laboratory data including chain of custody

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Received by:

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ident ID			

Incident ID	
District RP	2RP-2664
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Printed Name: Kyle Littrell Title: SH&E Supervisor Signature: Date: <u>10/4/2019</u> Telephone: (432)-221-7331 email: _____ Kyle_Littrell@xtoenergy.com _____ **OCD Only**

Date: _____

Page 18 of 130

Incident ID	
District RP	2RP-2664
Facility ID	
Application ID	

Closure

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

Closure Report Attachment Checklist: Each of the following is	tems must be incl	luded 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 ODG	C District office n	nust be notified 2 days prior to final sampling)				
Description of remediation activities						
I hereby certify that the information given above is true and comple and regulations all operators are required to report and/or file certain may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and rephuman health or the environment. In addition, OCD acceptance of compliance with any other federal, state, or local laws and/or regular restore, reclaim, and re-vegetate the impacted surface area to the conformation accordance with 19.15.29.13 NMAC including notification to the Conformation and re-vegetate the impacted surface area.	n release notificate a C-141 report by mediate contamina a C-141 report do ations. The responditions that exist	ions and perform corrective actions for releases which we the OCD does not relieve the operator of liability ation that pose a threat to groundwater, surface water, es not relieve the operator of responsibility for asible party acknowledges they must substantially and prior to the release or their final land use in				
Printed Name:Kyle Littrell	Title:	SH&E Supervisor				
Signature:	Date:10	/4/2019				
email: Kyle Littrell@xtoenergy.com	Telephone:	432-221-7331				
OCD Only						
Received by:	Date:					
Closure approval by the OCD does not relieve the responsible party remediate contamination that poses a threat to groundwater, surface party of compliance with any other federal, state, or local laws and/	water, human hea					
Closure Approved by: Wall	Date:	2/20/2023				
Printed Name: Brittany Hall	Title:	Environmental Specialist				

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 Fc, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action												
NABI	5237	23104	2			OPERAT	OR	\boxtimes	Initia	l Report		Final Report
Name of Co	mpany: B	OPCO, L.P.		UD'13'/		Contact: Am						
				ad, N.M. 88220			lo. 575-887-732		4			
Facility Nan	ne: Big E	ady Unit # 74	I ank B	апегу	<u> 1</u>	acility Typ	e: Exploration a	na Produc	tion			
Surface Ow	ner: Fede	ral		Mineral O	wner:	Federal	-	Α	Pl No	. 30-015-2	2839	
				,		OF REI	LEASE					
Unit Letter B	Section 25	Township 21S	Range 28E	Feet from the 660	North/S North	South Line	Feet from the 1980	East/West East	Line	County Eddy		
	Latitude_32.456689°Longitude104.037531°											
				NAT	URE	OF RELI						
Type of Rele		de Oil ater				 	Release 12 bbls our of Occurrence			Recovered Hour of Dis		
Source of Re	iease rie	alci					time unknown			5 II am	-	
Was Immedia	ate Notice (Yes [No 🛭 Not Re	quired	If YES, To N/A	Whom?		OURSE. NM OIL CONSERVA ARTESIA DISTRICT AUG 17		O4.	
By Whom?						Date and H					ARTES	MSERVA
Was a Water	course Read		Yes ⊠] No		If YES, Volume Impacting the Watercourse. N/A			,	AUG j	7 2015	
If a Watercou N/A	ırse was Im	pacted, Descr	ibe Fully.	*						F	RECE	IVED
		em and Reme om corroded b		n Taken.* ne heater was drair	ned, clea	ncd, and LO	ΓO – will not be i	n use until i	t is ren	noved from	location	1
		and Cleanup A		ken.* of caliche pad. A	vacuun	n trúck recov	ered standing flui	ds.				
regulations a public health should their cor the environ	Il operators or the envi operations h nment. In a	are required tronment. The nave failed to	o report a acceptana accuately OCD accep	e is true and comp nd/or file certain rece of a C-141 report investigate and real atance of a C-141	elease no ort by the emediate	otifications and NMOCD made contaminati	nd perform correct arked as "Final Roon that pose a three the operator of	ctive actions eport" does eat to groun responsibili	for rel not rel d wate ty for c	eases which ieve the ope r, surface w compliance v	may er rator of ater, hu with any	ndanger Tliability man health
	OIL CONSERVATION DIVISION											
Signature: N. my ()				Approved by Environmental Specialist:								
Printed Name	Amy Rut	<u>h }</u>						7	10-	700		
Title: Assista	nt-Remedia	tion Foreman				Approval Da	te: 8 20 14	<u>Бхр</u>	iration	Date: N	<u>A_</u>	
E-mail Addro	ess: ACRuti	h@basspet.co	m			Conditions of mediatio	ACD	Rules &	Guid	B in A ached		•
	/2015	. 1037		: 432-661-0571	اط	LIDRAIT RE	MEDIALIUM	PROPOS	DAL L	Ψ		
Attach Addi	tional She	ets If Necess	ary		Ĺ	ATER THA	N: 9/2/	H 9 —			26	P-3213

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

Responsible Party: XTO Energy, Inc

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	
District RP	2RP-3213
Facility ID	
Application ID	

Release Notification

Responsible Party

OGRID: 5380

Contact Name: Kyle Littrell				Contact T	Contact Telephone: (432)-221-7331		
Contact email: Kyle_Littrell@xtoenergy.com				Incident #	Incident #: 2RP-3213		
Contact mail NM 88220	ing address:	522 W. Mermod,	Suite 704 Carlsba	ad,			
			Location	of Release S	ource		
Latitude N 32	2.456689		(NAD 83 in de	Longitude cimal degrees to 5 decir	W -103.037531 mal places)		
Site Name: B	ig Eddy Uni	t #74 Tank Battery	7	Site Type:	Production Well Facility		
Date Release	• •				plicable): 30-015-22839		
TImit I atta	Sant's a	T1-1	Dagger				
Unit Letter B	Section 25	Township 21S	Range 28E	Cour			
Crude Oil	Material			calculations or specific	i justification for the volumes provided below) Volume Recovered (bbls): 10		
	Material	(s) Released (Select al		d Volume of			
		Volume Release			Volume Recovered (bbls): 10		
Produced	Water	Volume Release			Volume Recovered (bbls):		
		Is the concentrat produced water	ion of dissolved c >10,000 mg/l?	chloride in the	☐ Yes ☐ No		
Condensa	ite	Volume Release			Volume Recovered (bbls)		
Natural G	ias	Volume Release	d (Mcf)		Volume Recovered (Mcf)		
Other (describe) Volume/Weight Released (provide units			Released (provide	e units)	Volume/Weight Recovered (provide units)		
Cause of Rel A heater beg		om a corroded bot	tom. The leak aff	ected approximatel	ly 545 square feet of caliche well pad.		

73	~ ~ ~		~ ~ ~ .	n
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Incident ID	
District RP	2RP-3213
Facility ID	
Application ID	

Was this a major release as defined by	If YES, for what reason(s) does the res	sponsible party consider this a major release?			
19.15.29.7(A) NMAC?					
☐ Yes ⊠ No					
If YES, was immediate n N/A	otice 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 immedia	liately unless they could create a safety hazard that would result in injury			
The source of the rele	ease has been stopped.				
The impacted area ha	as been secured to protect human health a	and the environment.			
Released materials ha	ave been contained via the use of berms of	or dikes, absorbent pads, or other containment devices.			
All free liquids and re	ecoverable materials have been removed	and managed appropriately.			
If all the actions described above have <u>not</u> been undertaken, explain why: N/A					
has begun, please attach	a narrative of actions to date. If remedi	ce remediation immediately after discovery of a release. If remediation lial efforts have been successfully completed or if the release occurred C), please attach all information needed for closure evaluation.			
regulations all operators are public health or the environi failed to adequately investig	required to report and/or file certain release nement. The acceptance of a C-141 report by the gate and remediate contamination that pose a t	the best of my knowledge and understand that pursuant to OCD rules and notifications and perform corrective actions for releases which may endanger he OCD does not relieve the operator of liability should their operations have threat to groundwater, surface water, human health or the environment. In r of responsibility for compliance with any other federal, state, or local laws			
Printed Name: Kyle	e Littrell	Title: _SH&E Supervisor			
Signature:	Factor -	Title: <u>SH&E Supervisor</u> Date: <u>10/4/2019</u>			
email: <u>Kyle Littrell@xto</u>	energy.com	Telephone: 432-221-7331			
OCD Only					
Received by:		Date:			
		_			

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Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no taler than 20 days after the release discovery date.			
What is the shallowest depth to groundwater beneath the area affected by the release?	<u>>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 man showing impacted area surface features subsurface features delineation points and monitoring wells			

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.

Received by OCD: 2/20/2023 1:15:29 PM Form C-141 State of New Mexico Page 4 Oil Conservation Division

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Incident ID	
District RP	2RP-3213
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Application ID	

I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release not public health or the environment. The acceptance of a C-141 report by the 6 failed to adequately investigate and remediate contamination that pose a thruaddition, OCD acceptance of a C-141 report does not relieve the operator of and/or regulations.	ifications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have eat to groundwater, surface water, human health or the environment. In
Printed Name:Kyle Littrell	Title: SH&E Supervisor
Signature:	Date:10/4/2019
email: Kyle Littrell@xtoenergy.com	Telephone:(432)-221-7331
OCD Only	
Received by:	Date:

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Incident ID	
District RP	2RP-3213
Facility ID	
Application ID	

Closure

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

Closure Report Attachment Checklist: Each of the following i	items must be included in the closure report.
A scaled site and sampling diagram as described in 19.15.29.1	11 NMAC
Photographs of the remediated site prior to backfill or photos must be notified 2 days prior to liner inspection)	s of the liner integrity if applicable (Note: appropriate OCD District office
☐ Laboratory analyses of final sampling (Note: appropriate ODG	C District office must be notified 2 days prior to final sampling)
Description of remediation activities	
may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and re- human health or the environment. In addition, OCD acceptance of	ations. The responsible party acknowledges they must substantially onditions that existed prior to the release or their final land use in
Printed Name: Kyle Littrell	Title:SH&E Supervisor
Signature:	Date:10/4/2019
email: Kyle Littrell@xtoenergy.com	Telephone:432-221-7331
OCD Only	
Received by:	Date:
	of liability should their operations have failed to adequately investigate and water, human health, or the environment nor does not relieve the responsible for regulations.
Closure Approved by:	Date:

1430

1435

-	Propertial, Inc.				ronment at Stevens New Mexic	Identifier: Bt Project Name:		Date: 06/19/19 RP Number.			
		LITHO	LOGIC	/ SOI	L SAMP	Logged By:	Robert M	Method: Hand Augu			
at/Long	į.				Field Scree	Hole Diameter	3"	Total Depth: 2			
ommen	ts:										
Moisture	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type			Lithology/Re	emarks
D	1723	0.8	2		0]	· ·	5	SF	? - SM	Brown	
D	(12)	1.2	N		2	1.5	5	58.	-SM	Brown	
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					11						
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LT Fraim	P mental, Inc.		I	LT Env	ironmenta st Stevens New Mexic	II, Inc. Street			Identifier: B	102	Date: 06/17/19
2	5								Project Name:	74	RP Number:
_		LITHO			Engineering L SAMPI				Logged By:		
Lat/Long		LITIIO	LOGIC	. 7501	Field Scree		Hole Diameter		Method: Hand And Total Depth: 2		
Commen	its:										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type			Lithology/Re	emarks
D	<12 ⁸	1.3	2		0]	Q 5	5	5	P-5M	Brow	n
D	C128	1.1	4		2	2	6	SP	-5M	Brown	
\					3						
					4						
					5	<u> </u>					
					1						
					6						
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					8	#					
					9						
					10	+					
					10	#					
					11	#					
						#					

LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation									Identifier Project Na			06/18 (1 ⁹) Number:
								BEU 74				RP-2664 RP-3213
		LITHO	LOGIC	/SOI	L SAMP	Logged By		Met	hod: Hand Auger			
Lat/Long					Field Scree	ening:			Hole Diam	eter: 3"	Tota	d Depth:
Commen	IS:											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type			Litholog	gy/Remark	s
h	213	11.7	N		0]	1'	S	SP	-SM			brown
W	d24	13	h		2	2'	5	SP -	SM			brown
N	4124		N		3	3'	5	SP-	Sc	w/ trac	e s.lt	reddish brow
W	424	G.7	N		4	4	5	SP-	50			reddish brown
					5 .	\mathbb{H}						
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						7				-1454	/	
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					11	1						
					12	1						

U Empressed inc.	LІТНО	Comp	liance · E	ngineering	al, Inc. s Street co 88220 g · Remedi	ation	Identifier: BHOY Project Name: BEU 74 Logged By: Spencer Method: Hand Auger
Lat/Long:				Field Scree	ening:		Hole Diameter: 3 n Total Depth: 3;
Comments:							
Moisture Content Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D KIZ	4	1		0]	ı'	5	SP-SM Brown trace caliché
D 213	.6	H		2	2'	5	SP-SC Reddish -Brann
D 213	٠5	4		-	3	5	SP-SC Reddish - Brann
				4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12			Refusal

U Environmenta, inc.		50 Carls	8 West sbad, N		al, Inc. Street CO 88220 Remedi			Project Name:	5 74	06/18/19 RP Number:		
Lat/Long:	LITHO	LOGIC			obert	Method: Hand Ange						
Comments:				Field Scree				Tiole Diameter	3"	Total Depth: 3'		
Moisture Content Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type			Lithology/R	emarks		
D (124	0.4	N		0]	\ \ \ '	ζ	SP -	-SM Brown				
M (124	0.3	N		2	2'	5	SP-S					
M 2124	0.4	N		3	3	5	SP-5	c Redd	ish Brown			
				4			H	and)	41061	Refusal		

U Engran			Ca	508 We risbad,	ironment st Stevens New Mexi Engineering	s Street co 88220			Project Name: BEV 074 Date: 06/16/19 RP Number:						
1 2		LITHO	LOGIC	/ SOI	L SAMP	Logged By Robert M	Method: Hand Augo Total Depth:								
Lat/Long Commen					Tield Scied	annig.			Hole Diameter 3"	Total Depth: 3					
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology	/Remarks					
D	CRY	0.5	7		0]	ι'	ζ	SP-	SP-SM Brown						
M	Lny	0.8	N		2	2'	5		P-SC reddish Brown						
M	224	0.5	N		3	3	5	SP - 50	scred Brown						
					4			h.	and auger re	efusal					
					11										



PHOTOGRAPHIC LOG



Photograph 1: View northeast corner of pad and release location (2RP-2664).



Photograph 3: View of release location (2RP-2664) facing north.



Photograph 2: View of the release location (2RP-2664) facing southeast.



Photograph 4: View of release location (2RP-2664) facing northwest.

Big Eddy Unit #74 Eddy County, New Mexico Photographs Taken: June 14, 17 & 18, 2019

Page 1 of 4



Received by OCD: 2/20/2023 1:15:29 PM

PHOTOGRAPHIC LOG



Photograph 5: View of excavated location (2RP-2664) facing northeast.



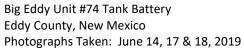
Photograph 7: View of excavated location (2RP-2664) facing north.



Photograph 6: View of excavated location (2RP-2664) facing west.



Photograph 8: View of completed excavation (2RP-2664) facing west.





PHOTOGRAPHIC LOG



Photograph 9: View eastern portion of pad and release location (2RP-3213).



Photograph 11: View of release location (2RP-3213) facing northeast.



Photograph 10: View of release location (2RP-3213) facing south.



Photograph 12: View of release location (2RP-3213) facing east.

Big Eddy Unit #74 Tank Battery Eddy County, New Mexico Photographs Taken: June 14, 17 & 18, 2019



PHOTOGRAPHIC LOG



Photograph 13: View of excavated location (2RP-3213) facing southeast.



Photograph 15: View of excavated location (2RP-3213).



Photograph 14: View of excavated location (2RP-3213) facing northeast.



Photograph 16: View of completed excavated location (2RP-3213) facing north.

Big Eddy Unit #74 Tank Battery Eddy County, New Mexico Photographs Taken: June 14, 17 & 18, 2019



Analytical Report 628186

for

LT Environmental, Inc.

Project Manager: Ashley Ager BEU 074

27-JUN-19

Collected By: Client





1211 W. Florida Ave Midland TX 79701

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)

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





27-JUN-19

Project Manager: Ashley Ager LT Environmental, Inc. 4600 W. 60th Avenue Arvada, CO 80003

Reference: XENCO Report No(s): 628186

BEU 074

Project Address: Delaware Basin

Ashley Ager:

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) 628186. 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. 628186 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 628186



LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	06-17-19 13:30	1.5 ft	628186-001
FS02	S	06-17-19 13:35	1.5 ft	628186-002
SW01	S	06-17-19 13:45	0 - 1.5 ft	628186-003
SW02	S	06-17-19 13:50	0 - 1.5 ft	628186-004

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: BEU 074

Project ID: Report Date: 27-JUN-19
Work Order Number(s): 628186

Report Date: 27-JUN-19
Date Received: 06/19/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093723 BTEX by EPA 8021B

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

Final 1.000



Certificate of Analysis Summary 628186

LT Environmental, Inc., Arvada, CO

Project Name: BEU 074



Project Id: Contact:

Project Location:

Ashley Ager Delaware Basin

Date Received in Lab: Wed Jun-19-19 11:40 am

Report Date: 27-JUN-19

Project Manager: Jessica Kramer

	Lab Id:	628186-0	001	628186-0	002	628186-0	003	628186-	004		
	Field Id:	FS01		FS02		SW01		SW02	2		
Analysis Requested	Depth:	1.5- ft		1.5- ft	1.5- ft		0-1.5 ft		ft		
	Matrix:	SOIL		SOIL	SOIL		SOIL		,		
	Sampled:	Jun-17-19 1	Jun-17-19 13:30		Jun-17-19 13:35		Jun-17-19 13:45		13:50		
BTEX by EPA 8021B	Extracted:	Jun-25-19	Jun-25-19 14:00		4:00	Jun-25-19	14:00	Jun-25-19	14:00		
	Analyzed:	Jun-27-19 (Jun-27-19 02:51		03:14	Jun-27-19 (03:37	Jun-27-19	10:27		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199		
Toluene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199		
Ethylbenzene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199		
m,p-Xylenes		< 0.00399	0.00399	< 0.00400	0.00400	< 0.00401	0.00401	< 0.00398	0.00398		
o-Xylene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199		
Total Xylenes		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199		
Total BTEX		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199		
Chloride by EPA 300	Extracted:	Jun-19-19	16:10	Jun-19-19	6:10	Jun-19-19	17:00	Jun-19-19	17:00		
	Analyzed:	Jun-20-19 (00:55	Jun-20-19 (01:03	Jun-20-19	16:48	Jun-20-19	16:53		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		237	4.99	319	5.03	170	4.97	348	4.99		
TPH by SW8015 Mod	Extracted:	Jun-19-19	17:00	Jun-19-19	7:00	Jun-19-19	17:00	Jun-20-19	11:50		
	Analyzed:	Jun-20-19 (09:02	Jun-20-19 (9:26	Jun-20-19 ()9:51	Jun-21-19	10:46		
	Units/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		
Diesel Range Organics (DRO)		<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		
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0		
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0		

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

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

Jessica Kramer Project Assistant





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: **FS01** Matrix:

Result

Cas Number

16887-00-6

Date Received:06.19.19 11.40

Lab Sample Id: 628186-001

Soil Date Collected: 06.17.19 13.30

Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: CHE CHE

RL

4.99

Wet Weight

Seq Number: 3092962

Parameter

Chloride

Date Prep:

237

06.19.19 16.10

Basis:

Units

mg/kg

Dil

1

Flag

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Analysis Date

06.20.19 00.55

% Moisture:

Tech: Analyst: ARM ARM

Date Prep:

06.19.19 17.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	06.20.19 09.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.20.19 09.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.20.19 09.02	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.20.19 09.02	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.20.19 09.02	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	93	%	70-135	06.20.19 09.02		
o-Terphenyl		84-15-1	92	%	70-135	06.20.19 09.02		





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: FS01

Matrix: Soil

Date Received:06.19.19 11.40

Lab Sample Id: 628186-001

Date Collected: 06.17.19 13.30

Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech:

DVM

% Moisture:

Analyst: DVM

Date Prep: 06.25.19 14.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.27.19 02.51	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.27.19 02.51	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.27.19 02.51	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	06.27.19 02.51	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.27.19 02.51	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.27.19 02.51	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.27.19 02.51	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	127	%	70-130	06.27.19 02.51		
1,4-Difluorobenzene		540-36-3	92	%	70-130	06.27.19 02.51		





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: FS02

Matrix:

Soil

Date Received:06.19.19 11.40

Lab Sample Id: 628186-002

Date Collected: 06.17.19 13.35

Sample Depth: 1.5 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

Tech: Analyst: CHE CHE

Date Prep: 06.19.19 16.10

Basis:

Wet Weight

Seq Number: 3092962

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 319
 5.03
 mg/kg
 06.20.19 01.03
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

Analyst: ARM

Date Prep: 06.19.19 17.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	06.20.19 09.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.20.19 09.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.20.19 09.26	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.20.19 09.26	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.20.19 09.26	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	95	%	70-135	06.20.19 09.26		
o-Terphenyl		84-15-1	94	%	70-135	06.20.19 09.26		





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: FS02

Matrix:

Soil

Date Received:06.19.19 11.40

Lab Sample Id: 628186-002

Date Collected: 06.17.19 13.35

Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B % Moisture:

Tech:

Analyst:

DVM DVM

Date Prep: 06.25.19 14.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.27.19 03.14	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.27.19 03.14	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.27.19 03.14	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	06.27.19 03.14	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.27.19 03.14	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.27.19 03.14	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.27.19 03.14	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	129	%	70-130	06.27.19 03.14		
1,4-Difluorobenzene		540-36-3	91	%	70-130	06.27.19 03.14		





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: SW01

Lab Sample Id: 628186-003

V01

Matrix: Soil

Date Received:06.19.19 11.40

Date Collected: 06.17.19 13.45

Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

CHE

Prep Method: E300P % Moisture:

Tech:

Analyst: CHE

Date Prep: 06.19.19 17.00

% Moisture:
Basis:

Wet Weight

Seq Number: 3093006

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 170
 4.97
 mg/kg
 06.20.19 16.48
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM

ARM

Date Prep: 06.19.19 17.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	06.20.19 09.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.20.19 09.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.20.19 09.51	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.20.19 09.51	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.20.19 09.51	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	103	%	70-135	06.20.19 09.51		
o-Terphenyl		84-15-1	93	%	70-135	06.20.19 09.51		





LT Environmental, Inc., Arvada, CO

BEU 074

Soil

Sample Id: SW01

Matrix:

Date Received:06.19.19 11.40

Lab Sample Id: 628186-003

Date Collected: 06.17.19 13.45

Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech:

Analyst:

DVM DVM

Date Prep: 06.25.19 14.00

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.27.19 03.37	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.27.19 03.37	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.27.19 03.37	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	06.27.19 03.37	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.27.19 03.37	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.27.19 03.37	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.27.19 03.37	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	126	%	70-130	06.27.19 03.37		
1,4-Difluorobenzene		540-36-3	93	%	70-130	06.27.19 03.37		





LT Environmental, Inc., Arvada, CO

BEU 074

Soil

Sample Id: **SW02**

Matrix:

Date Received:06.19.19 11.40

Lab Sample Id: 628186-004

Date Collected: 06.17.19 13.50

Sample Depth: 0 - 1.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

CHE

Date Prep: 06.19.19 17.00 Basis:

Wet Weight

CHE Analyst: Seq Number: 3093006

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 06.20.19 16.53 348 4.99 mg/kg 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

06.20.19 11.50 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	06.21.19 10.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.21.19 10.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.21.19 10.46	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.21.19 10.46	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.21.19 10.46	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	89	%	70-135	06.21.19 10.46		
o-Terphenyl		84-15-1	78	%	70-135	06.21.19 10.46		





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: **SW02** Matrix: Soil Date Received:06.19.19 11.40

Lab Sample Id: 628186-004

DVM

Date Collected: 06.17.19 13.50

Sample Depth: 0 - 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

DVM Tech:

Analyst:

Basis:

% Moisture:

06.25.19 14.00 Date Prep:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.27.19 10.27	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.27.19 10.27	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.27.19 10.27	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.27.19 10.27	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.27.19 10.27	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.27.19 10.27	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.27.19 10.27	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	116	%	70-130	06.27.19 10.27		
1,4-Difluorobenzene		540-36-3	96	%	70-130	06.27.19 10.27		



Flagging Criteria





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

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

^{**} Surrogate recovered outside laboratory control limit.

Flag

E300P

E300P

Prep Method:

Prep Method:



QC Summary 628186

LT Environmental, Inc.

BEU 074

Analytical Method: Chloride by EPA 300

Seq Number: 3092962 Matrix: Solid Date Prep: 06.19.19

LCS Sample Id: 7680340-1-BKS LCSD Sample Id: 7680340-1-BSD MB Sample Id: 7680340-1-BLK

MR Spike LCS LCS Limits %RPD RPD Limit Units LCSD LCSD Analysis Flag **Parameter** Result Amount Result %Rec Date %Rec Result 06.19.19 21:32 Chloride < 0.858 250 246 98 246 98 90-110 0 20 mg/kg

Analytical Method: Chloride by EPA 300

E300P Prep Method: Seq Number: 3093006 Matrix: Solid Date Prep: 06.19.19

MB Sample Id: 7680341-1-BLK LCS Sample Id: 7680341-1-BKS LCSD Sample Id: 7680341-1-BSD

MB Spike LCS LCS %RPD RPD Limit Units LCSD LCSD Limits Analysis Flag **Parameter** Result %Rec Date Result Amount Result %Rec Chloride < 5.00 250 245 98 246 98 90-110 0 20 mg/kg 06.20.19 14:42

Analytical Method: Chloride by EPA 300

Prep Method: E300P 3092962 Matrix: Soil 06.19.19 Seq Number: Date Prep:

MS Sample Id: 628183-003 S MSD Sample Id: 628183-003 SD 628183-003 Parent Sample Id:

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis **Parameter** Result Date Result Amount %Rec Result %Rec Chloride 201 252 441 95 441 95 90-110 0 20 06.19.19 21:54 mg/kg

Analytical Method: Chloride by EPA 300

3092962 Matrix: Soil Seq Number: Date Prep: 06.19.19 628185-006 S MSD Sample Id: 628185-006 MS Sample Id: 628185-006 SD Parent Sample Id:

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Result %Rec Date Result Amount Result %Rec Chloride 79.2 333 102 332 90-110 0 20 06.19.19 23:35 248 102 mg/kg

Analytical Method: Chloride by EPA 300

E300P Prep Method: 3093006 Matrix: Soil Seq Number: Date Prep: 06.19.19

Parent Sample Id: 628389-001 MS Sample Id: 628389-001 S MSD Sample Id: 628389-001 SD

Parent Spike MS MS Limits %RPD RPD Limit Units Analysis **MSD MSD** Flag **Parameter** Result Date Result Amount %Rec Result %Rec Chloride 421 252 632 84 630 83 90-110 0 20 mg/kg 06.20.19 14:57 X

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

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |[D] = 100 * (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

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

Flag

Flag



QC Summary 628186

LT Environmental, Inc.

BEU 074

Analytical Method: Chloride by EPA 300

Seq Number: 3093006 Matrix: Soil

MS Sample Id: 628389-010 S Parent Sample Id: 628389-010

E300P Prep Method:

Date Prep: 06.19.19 MSD Sample Id: 628389-010 SD

Spike MS MS %RPD RPD Limit Units Parent **MSD MSD** Limits Analysis Flag **Parameter** Result Result Amount %Rec %Rec Date Result 06.20.19 16:05 Chloride < 5.01 251 243 97 243 97 90-110 0 20 mg/kg

Analytical Method: TPH by SW8015 Mod

Seq Number:

3092947

Matrix: Solid

Prep Method: TX1005P

06.19.19

Date Prep:

MB Sample Id: 7680348-1-BLK LCS Sample Id: 7680348-1-BKS LCSD Sample Id: 7680348-1-BSD Spike LCS LCS %RPD RPD Limit Units MB LCSD LCSD Limits Analysis

Parameter Result %Rec Date Result Amount Result %Rec Gasoline Range Hydrocarbons (GRO) 1000 916 92 963 96 70-135 5 20 06.19.19 23:53 <15.0 mg/kg 873 87 876 88 70-135 0 20 06.19.19 23:53 Diesel Range Organics (DRO) < 8.13 1000 mg/kg

MB MB LCS LCS LCSD LCSD Limits Units Analysis Surrogate %Rec Flag %Rec Flag %Rec Flag Date 06.19.19 23:53 1-Chlorooctane 116 101 105 70-135 % 70-135 06.19.19 23:53 o-Terphenyl 103 94 99 %

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093110

Matrix: Solid

Prep Method: Date Prep: TX1005P

06.20.19

LCS Sample Id: 7680420-1-BKS LCSD Sample Id: 7680420-1-BSD MB Sample Id: 7680420-1-BLK

LCS LCS %RPD RPD Limit Units MB Spike LCSD **LCSD** Limits Analysis **Parameter** Result %Rec Date Result Amount Result %Rec Gasoline Range Hydrocarbons (GRO) 06.21.19 00:52 <15.0 1000 964 96 922 92 70-135 4 20 mg/kg 953 95 926 70-135 06.21.19 00:52 Diesel Range Organics (DRO) 1000 93 3 20 < 8.13 mg/kg

MB MBLCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 06.21.19 00:52 93 102 99 70-135 1-Chlorooctane % o-Terphenyl 84 101 104 70-135 % 06.21.19 00:52

Analytical Method: TPH by SW8015 Mod

Seq Number:

3092947

Matrix: Soil

Prep Method: TX1005P

06.19.19

Date Prep:

MS Sample Id: 628180-001 S MSD Sample Id: 628180-001 SD Parent Sample Id: 628180-001

MS %RPD RPD Limit Units MS Parent Spike Limits Analysis **MSD MSD** Flag **Parameter** Result Result Amount %Rec %Rec Date Result 06.20.19 01:06 Gasoline Range Hydrocarbons (GRO) 14.4 998 958 95 998 99 70-135 4 20 mg/kg mg/kg 06.20.19 01:06 Diesel Range Organics (DRO) 11.5 998 893 88 1020 101 70-135 13 20

MS MS **MSD MSD** Limits Units Analysis **Surrogate** Flag %Rec Flag Date %Rec 06.20.19 01:06 94 70-135 1-Chlorooctane 96 % 06.20.19 01:06 o-Terphenyl 84 94 70-135 %

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

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |[D] = 100 * (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample = Parent Result

= MS/LCS Result

= MSD/LCSD Result

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

Final 1.000

Flag

Flag



Seq Number:

MB Sample Id:

QC Summary 628186

LT Environmental, Inc.

BEU 074

Analytical Method: TPH by SW8015 Mod

3093110 Matrix: Soil

MS Sample Id: 628185-001 S Parent Sample Id: 628185-001

TX1005P Prep Method:

Date Prep: 06.20.19

MSD Sample Id: 628185-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RP	D RPD Lim	it Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	808	81	858	86	70-135	6	20	mg/kg	06.21.19 02:05	
Diesel Range Organics (DRO)	10.7	1000	778	77	824	81	70-135	6	20	mg/kg	06.21.19 02:05	
			N	1S	MS	MST	MSI	D	Limits	Units	Analysis	

Surrogate Date %Rec Flag Flag %Rec 1-Chlorooctane 73 86 70-135 % 06.21.19 02:05 o-Terphenyl 71 87 70-135 % 06.21.19 02:05

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093723

Matrix: Solid LCS Sample Id: 7680761-1-BKS 7680761-1-BLK

SW5030B Prep Method:

Date Prep: 06.25.19 LCSD Sample Id: 7680761-1-BSD

%RPD RPD Limit Units LCS LCS MB Spike Limits Analysis **LCSD** LCSD **Parameter** Date Result Amount Result %Rec %Rec Result 0.0994 0.0936 70-130 10 06.26.19 19:56 Benzene < 0.00199 0.0851 86 35 mg/kg 06.26.19 19:56 Toluene < 0.000453 0.0994 0.0953 0.102 102 70-130 7 35 96 mg/kg < 0.000561 06.26.19 19:56 0.0994 0.0973 98 70-130 9 35 Ethylbenzene 0.106106 mg/kg 35 06.26.19 19:56 m,p-Xylenes < 0.00101 0.199 0.192 96 0.208104 70-130 8 mg/kg o-Xylene 0.000431 0.0994 0.0939 94 0.101 101 70-130 35 06.26.19 19:56 mg/kg

MB MB LCS LCS LCSD LCSD Limits Units Analysis **Surrogate** %Rec %Rec Flag Flag %Rec Flag Date 1.4-Difluorobenzene 98 96 95 70-130 % 06.26.19 19:56 06.26.19 19:56 4-Bromofluorobenzene 105 106 107 70-130 %

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B Seq Number: 3093723 Matrix: Soil Date Prep: 06.25.19 628028-009 MS Sample Id: 628028-009 S MSD Sample Id: 628028-009 SD Parent Sample Id:

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.0998	0.0993	99	0.0998	100	70-130	1	35	mg/kg	06.26.19 19:09
Toluene	0.000552	0.0998	0.102	102	0.103	102	70-130	1	35	mg/kg	06.26.19 19:09
Ethylbenzene	0.000763	0.0998	0.103	102	0.103	102	70-130	0	35	mg/kg	06.26.19 19:09
m,p-Xylenes	< 0.00101	0.200	0.205	103	0.208	103	70-130	1	35	mg/kg	06.26.19 19:09
o-Xylene	0.000612	0.0998	0.100	100	0.101	100	70-130	1	35	mg/kg	06.26.19 19:09

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		98		70-130	%	06.26.19 19:09
4-Bromofluorobenzene	107		104		70-130	%	06.26.19 19:09

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

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |[D] = 100 * (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result

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

Chain of Custody

Work Order No: Was 2019/

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334

LAB	LABORATORIES	Hobbs,NM (6	Midland TX (432-704-54)	440) EL Paso,TX (915)58	Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296 Hobbs,NM (575-392-7550) Phoenix AZ (480-355-0900) Atlanta CA (770-440-8800) Tombo El (843-850-2000)	13 630 2000)		Danie
roject Manager:	Ashley Ager	And the second	Bill to: (if different)	t) Kyle Littrel			Work Order Comments	
ompany Name:	LT Environmental, Inc., Permian office	, Permian office	Company Name:	ne: XTO-Energy		Program: UST/PST	_ 1	s RC Duperfund
ddress:	3300 North A Street	Andreas and the state of the st	Address:			State of Project:		[
ity, State ZIP:	Midland, TX 79705	And the second s	City, State ZIP	: Carlsbad, NM		Reporting:Level II	□evel III □ST/UST	· □RRP □bvel IV □
hone:	432.704.5178		Email: aager@ltenv	com	.com	Deliverables: EDD		Other:
roject Name:	BEU 074		Turn Around		ANALYSIS REQUEST	TEST		Work Order Notes
roject Number:			Routine					
O. Number:	2RP-2664	2RP-3213	Rush: 3 day					
ampler's Name:	Robert McAfee	A COLUMN TO THE PROPERTY OF TH	Due Date: ໕໕/ຉຐຐ					
SAMPLE RECEIPT	PT Temp Blank:	Yes No)Wet Ice: (res) No					
emperature (°C):	いも多ツ	The	<u></u>	iers				
eceived Intact:	Yes No		1	21)				
ooler Custody Seals:	Yes	Correction Factor:	actor: 700	015) 0=80			77	TAT starts the day recevied by the
		Total Containers	more.	PA (EP/				lab, if received by 4:30pm
Sample Identification	iffication Matrix	Date Time Sampled Sampled	ne pled Depth	TPH (E				Sample Comments
F501	\s\ \s\	06/17/14 1330	0 1.5	××××				Composite
1.05-1		335	\$5 1.5'	×				
Swoi		1545	5 0-1.5'	-				
Swol	4	1350	0-1.5	> ×				4
				1				And the state of t
				The Manual of th				
Total 200.7 / 6010	10 200.8 / 6020:	8	13PPM Texas 11	1 Al Sb As Ba Be	B Cd Ca	Cr Co Cu Fe Pb Mg Mn Mo Ni	K Se Ag SiO2 Na Sr	Sr TI Sn U V Zn
	Circle metrod(s) and metal(s) to be alialyzed	ralyzed i CEF	TOLT SPLP BUTU: BRCKA	жA SD AS Ba Be Cd Cr Co	Cd Cr Co Cu Pb Mn Mo	/in Mo∵Ni Se Ag Ti∪		1631 / 245.1 / 7470 / 7471 : Hg
service. Xenco will be li	able only for the cost of samp	or samples constitutes a les and shall not assum	valid purchase order from e any responsibility for an	i client company to Xenco, I iv losses or expenses incur	service. Senso will be liable only for the cost of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors, it assigns standard terms and conditions service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances havond the cost of	igns standard terms and o	onditions	
Kenco. A minimum chai	ge of \$75.00 will be applied to	each project and a cha	ge of \$5 for each sample	submitted to Xenco, but not	Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	e enforced unless previously negotiated.	lated.	
Relinquished by: (Signature)	(Signature)	Received by: (Signature)	ignature)	Date/Time	Relinquished by: (Signature)	,	Received by: (Signature)	, Date/Time
Bellet Ill		(DULAGE)	2	617/19 6345		5	FOREX	06/18/19/14:00
			9		4	4		Michille
		egyinnet (festeraginské haladag) (m. 1821 m. 1821 m.).			6			
								Revised Date 051418 Rev. 2018.1



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/19/2019 11:40:00 AM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Date: 06/19/2019

Work Order #: 628186

Temperature Measuring device used: R8

WOIR Older #. 020100		
	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 cor	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle	es?	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 relinqu	uished/ received?	Yes
#10 Chain of Custody agrees with sampl	e 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 indicat	ed test(s)?	Yes
#16 All samples received within hold time	e?	Yes
#17 Subcontract of sample(s)?		N/A
#18 Water VOC samples have zero head	dspace?	N/A
* Must be completed for after-hours de	livery of samples prior to placing in	n the refrigerator
Analyst:	PH Device/Lot#:	
Checklist completed by:	Britana Teel	Date: <u>06/19/2019</u>

Checklist reviewed by:

Analytical Report 628187

for

LT Environmental, Inc.

Project Manager: Ashley Ager
BEU 074

27-JUN-19

Collected By: Client





1211 W. Florida Ave Midland TX 79701

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)





27-JUN-19

Project Manager: Ashley Ager LT Environmental, Inc. 4600 W. 60th Avenue Arvada, CO 80003

Reference: XENCO Report No(s): 628187

BEU 074

Project Address: Delaware Basin

Ashley Ager:

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) 628187. 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. 628187 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Vramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 628187



LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS03	S	06-17-19 12:30	1 ft	628187-001
FS04	S	06-17-19 12:35	1 ft	628187-002
FS05	S	06-17-19 12:40	1 ft	628187-003
SW03	S	06-17-19 12:50	0 - 1 ft	628187-004
SW04	S	06-17-19 13:05	0 - 1 ft	628187-005

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: BEU 074

Project ID: Report Date: 27-JUN-19
Work Order Number(s): 628187

Report Date: 27-JUN-19
Date Received: 06/19/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093583 BTEX by EPA 8021B

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

Batch: LBA-3093649 BTEX by EPA 8021B

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



Certificate of Analysis Summary 628187

LT Environmental, Inc., Arvada, CO

Project Name: BEU 074

TNI

Project Id:

Project Location:

Contact: Ashley Ager

Delaware Basin

Date Received in Lab: Wed Jun-19-19 11:40 am

Report Date: 27-JUN-19

Project Manager: Jessica Kramer

	Lab Id:	628187-0	001	628187-0	002	628187-0	003	628187-	004	628187-0	005	
Analysis Requested	Field Id:	FS03		FS04		FS05		SW03	3	SW04	.	
Anulysis Requesieu	Depth:	1- ft		1- ft		1- ft		0-1 ft	t	0-1 ft		
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	,	
	Sampled:	Jun-17-19 1	12:30	Jun-17-19	12:35	Jun-17-19	12:40	Jun-17-19	12:50	Jun-17-19	13:05	
BTEX by EPA 8021B	Extracted:	Jun-24-19 2	23:00	Jun-24-19	23:00	Jun-24-19 2	23:00	Jun-24-19	23:00	Jun-25-19	17:00	
	Analyzed:	Jun-25-19 2	22:42	Jun-25-19	23:04	Jun-25-19 2	23:26	Jun-25-19	23:48	Jun-26-19	14:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Benzene		< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	
Toluene		< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	
Ethylbenzene		< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	
m,p-Xylenes		< 0.00402	0.00402	< 0.00402	0.00402	< 0.00401	0.00401	< 0.00399	0.00399	< 0.00399	0.00399	
o-Xylene		< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	
Total Xylenes		< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	
Total BTEX		< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	
Chloride by EPA 300	Extracted:	Jun-19-19	17:00	Jun-19-19	17:00	Jun-19-19	19:00	Jun-19-19	19:00	Jun-19-19	19:00	
	Analyzed:	Jun-20-19	16:58	Jun-20-19	17:03	Jun-19-19 2	20:23	Jun-19-19	20:40	Jun-19-19	20:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		< 5.02	5.02	<4.98	4.98	<4.96	4.96	15.5	5.03	<4.98	4.98	
TPH by SW8015 Mod	Extracted:	Jun-20-19	11:50	Jun-20-19	11:50	Jun-20-19	11:50	Jun-19-19	12:00	Jun-19-19	12:00	
	Analyzed:	Jun-21-19 (09:29	Jun-21-19	09:55	Jun-21-19	10:20	Jun-19-19	22:14	Jun-19-19	22:39	
	Units/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	
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	132	15.0	<15.0	15.0	
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	18.1	15.0	<15.0	15.0	
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	150	15.0	<15.0	15.0	
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	132	15.0	<15.0	15.0	

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

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

Jessica Kramer

Jessica Kramer Project Assistant





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: FS03

503

Matrix: Soil

Date Received:06.19.19 11.40

Lab Sample Id: 628187-001

Date Collected: 06.17.19 12.30

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 06.19.19 17.00

% Moisture: Basis:

Wet Weight

Seq Number: 3093006

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	< 5.02	5.02	mg/kg	06.20.19 16.58	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 06.20.19 11.50

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	06.21.19 09.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.21.19 09.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.21.19 09.29	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.21.19 09.29	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.21.19 09.29	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	1	11-85-3	80	%	70-135	06.21.19 09.29		
o-Terphenyl	84	4-15-1	85	%	70-135	06.21.19 09.29		





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: **FS03** Matrix:

Date Received:06.19.19 11.40

Lab Sample Id: 628187-001

Soil Date Collected: 06.17.19 12.30

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech:

DVM

% Moisture:

DVM Analyst:

Date Prep: 06.24.19 23.00 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.25.19 22.42	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.25.19 22.42	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.25.19 22.42	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.25.19 22.42	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.25.19 22.42	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.25.19 22.42	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.25.19 22.42	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	106	%	70-130	06.25.19 22.42		
1,4-Difluorobenzene		540-36-3	96	%	70-130	06.25.19 22.42		





LT Environmental, Inc., Arvada, CO

BEU 074

Soil

Sample Id: FS04

S04

Matrix:

Date Received:06.19.19 11.40

Lab Sample Id: 628187-002

Date Collected: 06.17.19 12.35

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

Analyst:

CHE

CHE

Date Prep:

06.19.19 17.00 E

% Moisture: Basis:

Wet Weight

Seq Number: 3093006

Parameter Cas Number Result RL Units **Analysis Date** Flag Dil Chloride 16887-00-6 U 06.20.19 17.03 <4.98 4.98 mg/kg 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep:

06.20.19 11.50

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	06.21.19 09.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.21.19 09.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.21.19 09.55	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.21.19 09.55	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.21.19 09.55	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	1	11-85-3	85	%	70-135	06.21.19 09.55		
o-Terphenyl	8	4-15-1	75	%	70-135	06.21.19 09.55		





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: FS04 Lab Sample Id: 628187-002

Matrix:

Soil

Date Received:06.19.19 11.40

Date Collected: 06.17.19 12.35

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

% Moisture:

DVM Tech:

DVM

Date Prep: 06.24.19 23.00 Basis:

Analyst: Seq Number: 3093583 Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.25.19 23.04	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.25.19 23.04	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.25.19 23.04	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.25.19 23.04	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.25.19 23.04	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.25.19 23.04	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.25.19 23.04	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Cas Number	Recovery	Units	Limits	Analysis Date	
540-36-3	96	%	70-130	06.25.19 23.04	
460-00-4	105	%	70-130	06.25.19 23.04	
	Cas Number 540-36-3	540-36-3 96	Cas Number Units 540-36-3 96 %	Cas Number Units Limits 540-36-3 96 % 70-130	Cas Number Units Limits Analysis Date 540-36-3 96 % 70-130 06.25.19 23.04





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: **FS05** Matrix:

Soil

Date Received:06.19.19 11.40

Lab Sample Id: 628187-003

Date Collected: 06.17.19 12.40

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: Analyst: SPC SPC

06.19.19 19.00

% Moisture:

Basis:

Wet Weight

Seq Number: 3092993

Parameter Cas Number Result RL Units **Analysis Date** Flag Dil Chloride 16887-00-6 U <4.96 4.96 mg/kg 06.19.19 20.23 1

Date Prep:

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

ARM

% Moisture:

ARM Analyst:

Seq Number: 3093110

Tech:

Date Prep: 06.20.19 11.50 Basis: Wet Weight

Flag

Cas Number Result RL **Parameter** Units **Analysis Date** Flag Dil PHC610 <15.0 06.21.19 10.20 U Gasoline Range Hydrocarbons (GRO) 15.0 mg/kg 1 Diesel Range Organics (DRO) C10C28DRO <15.0 15.0 mg/kg 06.21.19 10.20 U 1 Motor Oil Range Hydrocarbons (MRO) PHCG2835 <15.0 15.0 06.21.19 10.20 U mg/kg Total TPH PHC635 <15.0 15.0 mg/kg 06.21.19 10.20 U Total GRO-DRO PHC628 U <15.0 15.0 06.21.19 10.20 mg/kg 1

Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date]
1-Chlorooctane	111-85-3	86	%	70-135	06.21.19 10.20	
o-Terphenyl	84-15-1	83	%	70-135	06.21.19 10.20	





LT Environmental, Inc., Arvada, CO

BEU 074

Soil

Sample Id: FS05

Matrix:

Date Received:06.19.19 11.40

Lab Sample Id: 628187-003

Date Collected: 06.17.19 12.40

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DVM

% Moisture:

Analyst: DVM

Date Prep: 06.24.19 23.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.25.19 23.26	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.25.19 23.26	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.25.19 23.26	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	06.25.19 23.26	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.25.19 23.26	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.25.19 23.26	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.25.19 23.26	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	106	%	70-130	06.25.19 23.26		
1,4-Difluorobenzene		540-36-3	96	%	70-130	06.25.19 23.26		





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: SW03

Matrix:

Soil

Date Received:06.19.19 11.40

Lab Sample Id: 628187-004

Date Collected: 06.17.19 12.50

Sample Depth: 0 - 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:
Analyst:

SPC SPC

Date Prep:

06.19.19 19.00

77

Basis:

Wet Weight

Seq Number: 3092993

seq Number. 3072773

Parameter Cas Number
Chloride 16887-00-6

Result 15.5

RL 5.03

Units mg/kg

Analysis Date
06.19.19 20.40

% Moisture:

Flag Dil

Analytical Method: TPH by SW8015 Mod

ARM

Tech: Analyst:

ARM

Date Prep:

rep: 06.19.19 12.00

% Moisture:

Prep Method: TX1005P

Basis:

Wet Weight

Flag

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.19.19 22.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	132	15.0	mg/kg	06.19.19 22.14		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	18.1	15.0	mg/kg	06.19.19 22.14		1
Total TPH	PHC635	150	15.0	mg/kg	06.19.19 22.14		1
Total GRO-DRO	PHC628	132	15.0	mg/kg	06.19.19 22.14		1
		9	√ Recovery				

Surrogate	Cas Number	٠	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	101	%	70-135	06.19.19 22.14
o-Terphenyl	84-15-1	94	%	70-135	06.19.19 22.14





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: SW03

Matrix: Soil

Date Prep:

Date Received:06.19.19 11.40

Lab Sample Id: 628187-004 Date Collected: 06.17.19 12.50

Sample Depth: 0 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

DVM

06.24.19 23.00

% Moisture:

Basis:

Wet Weight

Analyst: DVM Seq Number: 3093583

Tech:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.25.19 23.48	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.25.19 23.48	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.25.19 23.48	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	06.25.19 23.48	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.25.19 23.48	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.25.19 23.48	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.25.19 23.48	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	96	%	70-130	06.25.19 23.48		
4-Bromofluorobenzene		460-00-4	109	%	70-130	06.25.19 23.48		





LT Environmental, Inc., Arvada, CO

BEU 074

Soil

Sample Id: **SW04**

Date Received:06.19.19 11.40

Lab Sample Id: 628187-005

Date Collected: 06.17.19 13.05

Sample Depth: 0 - 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

SPC

% Moisture:

Basis:

Wet Weight

SPC Analyst:

Date Prep: 06.19.19 19.00

Seq Number: 3092993

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	06.19.19 20.45	U	1

Matrix:

Analytical Method: TPH by SW8015 Mod

ARM

ARM Analyst:

Tech:

06.19.19 12.00 Date Prep:

% Moisture: Basis:

Prep Method: TX1005P

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	06.19.19 22.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.19.19 22.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.19.19 22.39	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.19.19 22.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.19.19 22.39	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	1	11-85-3	113	%	70-135	06.19.19 22.39		
o-Terphenyl	84	4-15-1	92	%	70-135	06.19.19 22.39		





LT Environmental, Inc., Arvada, CO

BEU 074

Sample Id: SW04
Lab Sample Id: 628187-005

Matrix:

Matrix: Soil
Date Collected: 06.17.19 13.05

Date Received:06.19.19 11.40

Sample Depth: 0 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

% Moisture:

Tech: DVM

Analyst: DVM

Date Prep: 06.25.19 17.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.26.19 14.14	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.26.19 14.14	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.26.19 14.14	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	06.26.19 14.14	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.26.19 14.14	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.26.19 14.14	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.26.19 14.14	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	92	%	70-130	06.26.19 14.14		
4-Bromofluorobenzene		460-00-4	102	%	70-130	06.26.19 14.14		



Flagging Criteria



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- 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.

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

^{**} Surrogate recovered outside laboratory control limit.

E300P

E300P



QC Summary 628187

LT Environmental, Inc.

BEU 074

Analytical Method: Chloride by EPA 300 E300P Prep Method: Seq Number: 3093006 Matrix: Solid Date Prep: 06.19.19

LCS Sample Id: 7680341-1-BKS LCSD Sample Id: 7680341-1-BSD MB Sample Id: 7680341-1-BLK

Spike LCS %RPD RPD Limit Units MR LCS Limits LCSD LCSD Analysis Flag **Parameter** Result **Amount** Result %Rec %Rec Date Result 06.20.19 14:42 Chloride < 5.00 250 245 98 246 98 90-110 0 20 mg/kg

Analytical Method: Chloride by EPA 300 Prep Method:

Seq Number: 3092993 Matrix: Solid Date Prep: 06.19.19

MB Sample Id: 7680344-1-BLK LCS Sample Id: 7680344-1-BKS LCSD Sample Id: 7680344-1-BSD

Spike MB LCS LCS Limits %RPD RPD Limit Units LCSD LCSD **Analysis** Flag **Parameter** Result %Rec Result Amount Result %Rec Date Chloride < 5.00 250 256 102 256 102 90-110 0 20 mg/kg 06.19.19 20:12

Analytical Method: Chloride by EPA 300 Prep Method: E300P 3093006 Matrix: Soil 06.19.19 Seq Number: Date Prep:

MSD Sample Id: 628389-001 SD MS Sample Id: 628389-001 S 628389-001 Parent Sample Id:

MS %RPD RPD Limit Units **Parent** Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Result Amount Result %Rec Date Result %Rec Chloride 421 252 632 84 630 83 90-110 0 20 06.20.19 14:57 X mg/kg

Analytical Method: Chloride by EPA 300

Prep Method: 3093006 Matrix: Soil Seq Number: Date Prep: 06.19.19 628389-010 S MSD Sample Id: 628389-010 MS Sample Id: 628389-010 SD Parent Sample Id:

%RPD RPD Limit Units MS MS Parent Spike **MSD MSD** Limits **Analysis** Flag **Parameter** Result Result %Rec Date Amount Result %Rec

Chloride < 5.01 251 243 97 243 97 90-110 0 20 06.20.19 16:05 mg/kg

Analytical Method: Chloride by EPA 300 E300P Prep Method:

3092993 Matrix: Soil Seq Number: Date Prep: 06.19.19

Parent Sample Id: 628187-003 MS Sample Id: 628187-003 S MSD Sample Id: 628187-003 SD Parent Spike MS MS **MSD** Limits %RPD RPD Limit Units Analysis

Result Date Result %Rec Amount Result %Rec Chloride 4.75 248 242 96 242 96 90-110 0 20 mg/kg 06.19.19 20:29

MSD

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

Parameter

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |[D] = 100 * (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

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

Flag

Flag



Seq Number:

MB Sample Id:

QC Summary 628187

LT Environmental, Inc.

BEU 074

Analytical Method: Chloride by EPA 300

3092993 Matrix: Soil

MS Sample Id: 628192-007 S Parent Sample Id: 628192-007

E300P Prep Method:

Date Prep: 06.19.19

MSD Sample Id: 628192-007 SD

%RPD RPD Limit Units Spike MS MS **MSD MSD** Analysis Flag **Parameter** Result **Amount** Result %Rec %Rec Date Result 06.19.19 21:46

Chloride 171 248 408 96 410 96 90-110 0 20 mg/kg

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092946

7680347-1-BLK

Parent

Matrix: Solid

Prep Method: TX1005P Date Prep:

06.19.19

LCS Sample Id: 7680347-1-BKS LCSD Sample Id: 7680347-1-BSD

Limits

MB Spike LCS LCS Limits %RPD RPD Limit Units LCSD LCSD **Analysis Parameter** %Rec Result **Amount** Result Result %Rec Date Gasoline Range Hydrocarbons (GRO) 1000 855 86 813 81 70-135 5 20 mg/kg 06.19.19 12:31 10.1 1000 844 84 807 81 70-135 4 20 06.19.19 12:31 Diesel Range Organics (DRO) < 8.13 mg/kg

MB MB LCS LCS LCSD LCSD Limits Units **Analysis** Surrogate Flag Flag Flag %Rec %Rec Date %Rec 06.19.19 12:31 1-Chlorooctane 99 94 85 70-135 % 92 99 06.19.19 12:31 o-Terphenyl 86 70-135 %

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093110

Matrix: Solid

Prep Method:

TX1005P

Date Prep: 06.20.19

LCS Sample Id: 7680420-1-BKS LCSD Sample Id: 7680420-1-BSD MB Sample Id: 7680420-1-BLK

MB Spike LCS LCS %RPD RPD Limit Units Limits Analysis LCSD LCSD **Parameter** Result Amount Result %Rec Result %Rec Date Gasoline Range Hydrocarbons (GRO) 06.21.19 00:52 <15.0 1000 964 96 922 92 70-135 4 20 mg/kg 953 95 926 20 06.21.19 00:52 Diesel Range Organics (DRO) 1000 93 70-135 3 < 8.13 mg/kg MB MB LCS LCS LCSD Limits Units Analysis LCSD

Surrogate %Rec Flag %Rec Flag Flag Date %Rec 93 102 99 06.21.19 00:52 70-135 1-Chlorooctane % o-Terphenyl 84 101 104 70-135 % 06.21.19 00:52

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092946

Matrix: Soil

Prep Method:

TX1005P

Date Prep: 06.19.19

MS Sample Id: 628025-001 S MSD Sample Id: 628025-001 SD Parent Sample Id: 628025-001

Spike MS MS %RPD RPD Limit Units Parent Limits Analysis MSD MSD Flag **Parameter** Result Result %Rec Date Amount Result %Rec Gasoline Range Hydrocarbons (GRO) 13.7 999 927 91 944 93 70-135 2 20 06.19.19 13:46 mg/kg 06.19.19 13:46 Diesel Range Organics (DRO) 8.15 999 914 91 933 93 70-135 2 20 mg/kg

MS MS **MSD** Limits **MSD** Units **Analysis Surrogate** %Rec Flag %Rec Flag Date 06.19.19 13:46 93 70-135 1-Chlorooctane 94 % 06.19.19 13:46 o-Terphenyl 93 91 70-135 %

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

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |

[D] = 100 * (C) / [B]Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control Sample = Parent Result

= MS/LCS Result = MSD/LCSD Result

B = Spike Added D = MSD/LCSD % Rec

MS = Matrix Spike

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Final 1.000



QC Summary 628187

LT Environmental, Inc.

BEU 074

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093110 Matrix: Soil

MS Sample Id: 628185-001 S

TX1005P Prep Method:

Date Prep: 06.20.19

Parent Sample Id: 628185-001 MS **Parent** Spike MS MSD Limits **MSD**

MSD Sample Id: 628185-001 SD %RPD RPD Limit Units Analysis

Flag **Parameter** Result Amount Result %Rec Result %Rec Date Gasoline Range Hydrocarbons (GRO) 70-135 06.21.19 02:05 <15.0 1000 808 81 858 86 6 20 mg/kg Diesel Range Organics (DRO) 778 77 824 70-135 20 06.21.19 02:05 10.7 1000 81 6 mg/kg

MS MS **MSD** MSD Limits Units **Analysis Surrogate** %Rec Flag Flag Date %Rec 1-Chlorooctane 73 86 70-135 % 06.21.19 02:05 o-Terphenyl 71 87 70-135 % 06.21.19 02:05

Analytical Method: BTEX by EPA 8021B

3093583

Matrix: Solid

Prep Method: Date Prep:

SW5030B

Seq Number: 7680657-1-BLK MB Sample Id:

LCS Sample Id: 7680657-1-BKS

06.24.19 LCSD Sample Id: 7680657-1-BSD

Flag

Flag

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date
Benzene	< 0.00200	0.100	0.0884	88	0.0870	87	70-130	2	35	mg/kg	06.25.19 07:06
Toluene	< 0.00200	0.100	0.0784	78	0.0868	87	70-130	10	35	mg/kg	06.25.19 07:06
Ethylbenzene	< 0.00200	0.100	0.0738	74	0.0925	93	70-130	22	35	mg/kg	06.25.19 07:06
m,p-Xylenes	< 0.00400	0.200	0.144	72	0.185	93	70-130	25	35	mg/kg	06.25.19 07:06
o-Xylene	< 0.00200	0.100	0.0707	71	0.0857	86	70-130	19	35	mg/kg	06.25.19 07:06

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		97		95		70-130	%	06.25.19 07:06
4-Bromofluorobenzene	97		102		97		70-130	%	06.25.19 07:06

Analytical Method: BTEX by EPA 8021B

Seq Number:

MB Sample Id:

3093649

7680760-1-BLK

Matrix: Solid

LCS Sample Id: 7680760-1-BKS

Prep Method: Date Prep:

SW5030B 06.25.19

LCSD Sample Id: 7680760-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.0927	93	0.0942	95	70-130	2	35	mg/kg	06.26.19 16:56
Toluene	< 0.00200	0.100	0.0942	94	0.0943	95	70-130	0	35	mg/kg	06.26.19 16:56
Ethylbenzene	< 0.00200	0.100	0.0952	95	0.0951	96	70-130	0	35	mg/kg	06.26.19 16:56
m,p-Xylenes	< 0.00400	0.200	0.189	95	0.187	94	70-130	1	35	mg/kg	06.26.19 16:56
o-Xylene	< 0.00200	0.100	0.0909	91	0.0914	92	70-130	1	35	mg/kg	06.26.19 16:56

Surrogate	MB %Rec	MB Flag	LCS LCS %Rec Flag	LCSD %Rec	LCSD Limi Flag	ts Units	s Analysis Date
1,4-Difluorobenzene	95		96	99	70-13	80 %	06.26.19 16:56
4-Bromofluorobenzene	103		103	111	70-13	80 %	06.26.19 16:56

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

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |[D] = 100 * (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result

= MS/LCS Result E = MSD/LCSD Result MS = Matrix SpikeB = Spike Added D = MSD/LCSD % Rec

SW5030B

06.25.19 11:37

06.25.19 11:37

Analysis

Flag



QC Summary 628187

LT Environmental, Inc.

BEU 074

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Analytical Method: BTEX by EPA 8021B

Prep Method: Seq Number: 3093583 Matrix: Soil Date Prep: 06.24.19

MS Sample Id: 627969-001 S MSD Sample Id: 627969-001 SD Parent Sample Id: 627969-001

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RF	D RPD Lim	it Units	Analysis Date	Flag
Benzene	< 0.00200	0.0998	0.0922	92	0.0999	100	70-130	8	35	mg/kg	06.25.19 11:37	
Toluene	< 0.00200	0.0998	0.0882	88	0.0968	97	70-130	9	35	mg/kg	06.25.19 11:37	
Ethylbenzene	< 0.00200	0.0998	0.0941	94	0.102	102	70-130	8	35	mg/kg	06.25.19 11:37	
m,p-Xylenes	< 0.00399	0.200	0.187	94	0.205	103	70-130	9	35	mg/kg	06.25.19 11:37	
o-Xylene	< 0.00200	0.0998	0.0868	87	0.0954	96	70-130	9	35	mg/kg	06.25.19 11:37	
Surrogate					MS Flag	MSI %Re			Limits	Units	Analysis Date	

Analytical Method: BTEX by EPA 8021B

1,4-Difluorobenzene

4-Bromofluorobenzene

SW5030B Prep Method: Seq Number: 3093649 Matrix: Soil Date Prep: 06.25.19

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108

MS Sample Id: 628191-001 S MSD Sample Id: 628191-001 SD Parent Sample Id: 628191-001

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date
Benzene	< 0.00200	0.0998	0.0849	85	0.0910	91	70-130	7	35	mg/kg	06.26.19 17:40
Toluene	< 0.00200	0.0998	0.0820	82	0.0868	87	70-130	6	35	mg/kg	06.26.19 17:40
Ethylbenzene	< 0.00200	0.0998	0.0852	85	0.0907	91	70-130	6	35	mg/kg	06.26.19 17:40
m,p-Xylenes	< 0.00399	0.200	0.169	85	0.180	90	70-130	6	35	mg/kg	06.26.19 17:40
o-Xylene	< 0.00200	0.0998	0.0816	82	0.0867	87	70-130	6	35	mg/kg	06.26.19 17:40

Surrogate	%Rec	Flag	%Rec	Flag	Limits	Cints	Date
1,4-Difluorobenzene	98		97		70-130	%	06.26.19 17:40
4-Bromofluorobenzene	113		108		70-130	%	06.26.19 17:40

MS

MS

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

[D] = 100*(C-A) / B $RPD = 200* \mid (C-E) \mid (C+E) \mid$ [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 SpikeB = Spike Added D = MSD/LCSD % Rec

	Chain	Chain of Custody	Work Order No: (0 25/187)
Housto	n,TX (281) 240-4200 Dallas,TX (214	Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334	
	nd,TX (432-704-5440) EL Paso,TX (Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296	
Hobbs,NM (575-39	2-7550) Phoenix,AZ (480-355-0900)	Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta GA (770-449-8600) Tamma EI (841-820-2000)	MOS CORRO MANNI
	Bill to: (if different) Kyle Littrel	windan ration	Work Order Comments
nental, Inc., Permian office	Company Name: XTO-Engray		
A Street	Address:	8)	State of Project:
79705	City, State ZIP: Carlsbad, NM	e de la completa del la completa de la completa del la completa de la completa del la completa de la completa de la completa del la com	Reporting:Level III PST/LIST RRP byel IV
78 Email:	Email: agrer@iteny.com rmcatoc@iten;		

hone:	432.704.5178		Email: aager@lter	Email: agger@ltenv.com.rmcafee@ltenv.com	-	Deliverables: EDD ☐ ADaPT ☐	Other:
roject Name:	REU 074	4	Turn Around		ANALYSIS REQUEST		Work Order Notes
roject Number:		,	Routine				
O. Number:	2RP-2664	2RP-3213	Rush: 3 day				4
ampler's Name:	Robert McAfee		Due Date: 06/2//ff				
SAMPLE RECEIPT	IPT Temp Blank:	ank: Yes No	Wet ice: Yes No				nofesta tradesia-ta
emperature (°C):	うなご		600	ers			
eceived Intact:	(So No		TX.	21)			Para serie
ooler Custody Seals:	Yes No		Correction Factor: - d ?	15) =802			
ample Custody Seals:	_		Total Containers:	A 80 PA 0		TAT s	TAT starts the day recevied by the
Sample Identification	lification Matrix	Date Sampled	Time Depth	Numbe PH (EF BTEX (E		8	Sample Comments
F503	S	06/17/19	1230 1	У			(5)
FSO4		- 13	1235	× × ×			
1505		173	1240 1,				
V 200			1250 0-1'	× × ×			
7809			1205 0-1	* × × ×			4
Circle Method(s) a	otal 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	8	RA 13PPM Texas LP / SPLP 6010: 8F	RCRA 13PPM Texas 11 AI Sb As Ba Be B Cd Ca Cr Co C	B Cd Ca Cr Co Cu Fe Pb Mg Cd Cr Co Cu Pb Mn Mo Ni Se	Mn Mo Ni K Se Ag SiO2 Ag Ti U	Na Sr Tl Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Hg
rice: Signature of this d service. Xenco will be I Xenco. A minimum cha	ocument and relinquishme lable only for the cost of sa rge of \$75.00 will be applie	nt of samples constitute imples and shall not ass d to each project and a	is a valid purchase order fromme any responsibility for charge of \$5 for each sample	once: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors is graved. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any tosses or expenses incurred by the client if such losse Xenco. A minimum charge of \$76.00 will be applied to each project and a charge of \$76.00 will be applied to each project and a charge of \$6 for each sample submitted to Xenco, but not analyzed. These terms will be	suce: 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 service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control xenco. A minimum charge of \$76.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	ors. It assigns standard terms and conditions sere due to circumstances beyond the control senforced unless previously negotiated.	
Relinquished by: (Signature)	(Signature)	Received by: (Signature	(Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Poly X 14		BARTON	Hr.	6/17/19 16:40	AC.	FoolCX	06/18/19, 14:00
A SALIKA CARA PARA PARA PARA PARA PARA PARA PAR					6 .	1361	(1)(1)(1)
			ويعدينون ويورونون كستان ويسايدون فللمان والمانودين	and Change and a language of the Control of the Con			\frac{\frac{2}{2}}{2}

Revised Date 051418 Rev. 2018.1



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/19/2019 11:40:00 AM

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Work Order #: 628187

Temperature Measuring device used: R8

Sample Receipt Check	dist	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	

#18 Wate	r VOC samples have zero head	dspace?	N/A	
* Must be Analyst:	completed for after-hours de	livery of samples prior to plac	ing in the refrigerator	
	Checklist completed by:	Briuma Tul Brianna Teel	Date: <u>06/19/2019</u>	
	Checklist reviewed by:	Jessica Kramer Jessica Kramer	Date: <u>06/19/2019</u>	

Analytical Report 628550

for

LT Environmental, Inc.

Project Manager: Dan Moir BEU 74

29-JUN-19

Collected By: Client



1089 N Canal Street Carlsbad, NM 88220

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



29-JUN-19

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

Reference: XENCO Report No(s): 628550

BEU 74

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628550. 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. 628550 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Vramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 628550

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	06-17-19 14:30	1 ft	628550-001
BH01 A	S	06-17-19 14:35	1.5 ft	628550-002
BH02	S	06-17-19 14:40	0.5 ft	628550-003
BH02 A	S	06-17-19 14:45	1 ft	628550-004

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: BEU 74

Project ID: Report Date: 29-JUN-19 Work Order Number(s): 628550 Date Received: 06/20/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093925 BTEX by EPA 8021B

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

Final 1.000

Delaware Basin

Contact:

Project Location:

Certificate of Analysis Summary 628550

LT Environmental, Inc., Arvada, CO

Project Name: BEU 74

Project Id: Dan Moir **Date Received in Lab:** Thu Jun-20-19 02:30 pm

Report Date: 29-JUN-19 Project Manager: Jessica Kramer

		<20550.0	201	620550.0	202	620550.6	202	<20550	00.4		$\overline{}$
	Lab Id:	628550-0	101	628550-0		628550-0		628550-			
Analysis Requested	Field Id:	BH01		BH01 A	A	BH02		BH02	A		
Thutysis Requesieu	Depth:	1- ft		1.5- ft		0.5- ft		1- ft			
	Matrix:	SOIL		SOIL	SOIL		SOIL				
	Sampled:	Jun-17-19 1	14:30	Jun-17-19 1	14:35	Jun-17-19	14:40	Jun-17-19	14:45		
BTEX by EPA 8021B	Extracted:	Jun-27-19	16:30	Jun-27-19 1	16:30	Jun-27-19	16:30	Jun-27-19	16:30		
SUB: T104704400-18-16	Analyzed:	Jun-28-19	11:36	Jun-28-19 1	1:58	Jun-28-19	12:20	Jun-28-19	12:42		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200		
Toluene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200		
Ethylbenzene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200		
m,p-Xylenes		< 0.00398	0.00398	< 0.00400	0.00400	< 0.00398	0.00398	< 0.00399	0.00399		
o-Xylene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200		
Total Xylenes		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200		
Total BTEX		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200		
Chloride by EPA 300	Extracted:	Jun-22-19	17:30	Jun-22-19 1	17:30	Jun-22-19	17:30	Jun-22-19	17:30		
SUB: T104704400-18-16	Analyzed:	Jun-22-19 2	23:43	Jun-22-19 2	23:51	Jun-22-19 2	23:58	Jun-23-19	00:05		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		< 5.00	5.00	6.77	5.00	< 5.00	5.00	< 5.00	5.00		
TPH by SW8015 Mod	Extracted:	Jun-23-19	12:00	Jun-23-19 1	12:00	Jun-23-19	12:00	Jun-23-19	12:00		
SUB: T104704400-18-16	Analyzed:	Jun-24-19 (01:00	Jun-24-19 (02:13	Jun-24-19 (02:36	Jun-24-19	03:01		
	Units/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	<14.9	14.9		
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9		
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9		
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9		

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

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

Jessica Kramer Project Assistant



Certificate of Analytical Results 628550

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: **BH01** Lab Sample Id: 628550-001

Analytical Method: Chloride by EPA 300

Matrix: Soil Date Received:06.20.19 14.30

Date Collected: 06.17.19 14.30

Sample Depth: 1 ft

Prep Method: E300P

% Moisture:

Tech: CHE

CHE Analyst:

Date Prep: 06.22.19 17.30 Basis:

Wet Weight

Seq Number: 3093292

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Unit	Analysis Date	Flag	Dil
Chloride	16887-00-6	< 5.00	5.00	mg/k	g 06.22.19 23.43	U	1

Analytical Method: TPH by SW8015 Mod

Tech:

ARM

ARM Analyst:

Seq Number: 3093434

Date Prep:

06.23.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	06.24.19 01.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.24.19 01.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.24.19 01.00	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.19 01.00	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.24.19 01.00	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	85	%	70-135	06.24.19 01.00		
o-Terphenyl		84-15-1	90	%	70-135	06.24.19 01.00		



DVM

Tech:

Certificate of Analytical Results 628550

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH01 Matrix: Soil Date Received:06.20.19 14.30

Lab Sample Id: 628550-001 Date Collected: 06.17.19 14.30 Sample Depth: 1 ft

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

% Moisture:

Analyst: FOV Date Prep: 06.27.19 16.30 Basis: Wet Weight

Seq Number: 3093925 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.28.19 11.36	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.28.19 11.36	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.28.19 11.36	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.28.19 11.36	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.28.19 11.36	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.28.19 11.36	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.28.19 11.36	U	1
			%					
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	97	%	70-130	06.28.19 11.36		
4-Bromofluorobenzene		460-00-4	110	%	70-130	06.28.19 11.36		



Certificate of Analytical Results 628550

LT Environmental, Inc., Arvada, CO

BEU 74

06.22.19 17.30

Sample Id: **BH01** A Matrix: Soil Date Received:06.20.19 14.30

Lab Sample Id: 628550-002

Date Collected: 06.17.19 14.35

Sample Depth: 1.5 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

CHE

% Moisture:

Tech: CHE

Analyst:

Date Prep:

Basis:

Wet Weight SUB: T104704400-18-16

Seq Number: 3093292

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.77	5.00	mg/kg	06.22.19 23.51		1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:

Analyst:

ARM ARM

06.23.19 12.00 Date Prep:

Basis: Wet Weight SUB: T104704400-18-16

Seq Number: 3093434

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	06.24.19 02.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.24.19 02.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.24.19 02.13	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.19 02.13	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.24.19 02.13	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	77	%	70-135	06.24.19 02.13		
o-Terphenyl		84-15-1	81	%	70-135	06.24.19 02.13		



DVM

Tech:

Certificate of Analytical Results 628550

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH01 A Matrix: Soil Date Received:06.20.19 14.30

Lab Sample Id: 628550-002 Date Collected: 06.17.19 14.35 Sample Depth: 1.5 ft

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

% Moisture:

Analyst: FOV Date Prep: 06.27.19 16.30 Basis: Wet Weight

Seq Number: 3093925 SUB: T104704400-18-16

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.28.19 11.58	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.28.19 11.58	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.28.19 11.58	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	06.28.19 11.58	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.28.19 11.58	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.28.19 11.58	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.28.19 11.58	U	1
			%					
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	101	%	70-130	06.28.19 11.58		
4-Bromofluorobenzene		460-00-4	110	%	70-130	06.28.19 11.58		



Certificate of Analytical Results 628550

LT Environmental, Inc., Arvada, CO

BEU 74

06.22.19 17.30

Sample Id: **BH02** Matrix: Soil Date Received:06.20.19 14.30

Lab Sample Id: 628550-003

Date Collected: 06.17.19 14.40

Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

CHE Tech:

Seq Number: 3093292

Date Prep:

Basis:

CHE Analyst:

SUB: T104704400-18-16

Wet Weight

Wet Weight

Parameter Result Cas Number RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 < 5.00 5.00 mg/kg 06.22.19 23.58 U 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

Basis:

Analyst: ARM Seq Number: 3093434 Date Prep: 06.23.19 12.00

SUB: T104704400-18-16

Cas Number Result RL **Parameter** Units **Analysis Date** Flag Dil Gasoline Range Hydrocarbons (GRO) PHC610 06.24.19 02.36 <15.0 15.0 mg/kg U 1 Diesel Range Organics (DRO) C10C28DRO <15.0 15.0 06.24.19 02.36 U mg/kg 1 Motor Oil Range Hydrocarbons (MRO) PHCG2835 <15.0 15.0 06.24.19 02.36 U mg/kg Total TPH PHC635 <15.0 15.0 mg/kg 06.24.19 02.36 U Total GRO-DRO U PHC628 <15.0 15.0 06.24.19 02.36 1 mg/kg % Flag Surrogate Cas Number Units Limits **Analysis Date** Recovery 1-Chlorooctane 111-85-3 70-135 06.24.19 02.36 % 72 o-Terphenyl 84-15-1 78 % 70-135 06.24.19 02.36



DVM

Tech:

Certificate of Analytical Results 628550

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH02 Matrix: Soil Date Received:06.20.19 14.30

Lab Sample Id: 628550-003 Date Collected: 06.17.19 14.40 Sample Depth: 0.5 ft

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

% Moisture:

Analyst: FOV Date Prep: 06.27.19 16.30 Basis: Wet Weight

Seq Number: 3093925 SUB: T104704400-18-16

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.28.19 12.20	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.28.19 12.20	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.28.19 12.20	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.28.19 12.20	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.28.19 12.20	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.28.19 12.20	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.28.19 12.20	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	95	%	70-130	06.28.19 12.20		
4-Bromofluorobenzene		460-00-4	103	%	70-130	06.28.19 12.20		



Certificate of Analytical Results 628550

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: **BH02 A** Matrix: Soil Date Received:06.20.19 14.30

Lab Sample Id: 628550-004

Date Collected: 06.17.19 14.45

Sample Depth: 1 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

CHE

% Moisture:

CHE Tech:

Seq Number: 3093292

Analyst:

Basis:

Date Prep:

06.22.19 17.30

Wet Weight SUB: T104704400-18-16

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 06.23.19 00.05 U < 5.00 5.00 mg/kg 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

ARM Tech: ARM

Analyst:

06.23.19 12.00 Date Prep:

Basis: Wet Weight

Seq Number: 3093434

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	06.24.19 03.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9		mg/kg	06.24.19 03.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	06.24.19 03.01	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	06.24.19 03.01	U	1
Total GRO-DRO	PHC628	<14.9	14.9		mg/kg	06.24.19 03.01	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	79	%	70-135	06.24.19 03.01		
o-Terphenyl		84-15-1	85	%	70-135	06.24.19 03.01		



DVM

Tech:

Certificate of Analytical Results 628550

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH02 A Matrix: Soil Date Received:06.20.19 14.30

Lab Sample Id: 628550-004 Date Collected: 06.17.19 14.45 Sample Depth: 1 ft

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

% Moisture:

Analyst: FOV Date Prep: 06.27.19 16.30 Basis: Wet Weight

Seq Number: 3093925 SUB: T104704400-18-16

Parameter	Cas Number	r Result	\mathbf{RL}		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.28.19 12.42	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.28.19 12.42	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.28.19 12.42	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	06.28.19 12.42	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.28.19 12.42	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.28.19 12.42	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.28.19 12.42	U	1
			%					
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	110	%	70-130	06.28.19 12.42		
1,4-Difluorobenzene		540-36-3	100	%	70-130	06.28.19 12.42		



Flagging Criteria

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

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

^{**} Surrogate recovered outside laboratory control limit.



QC Summary 628550

LT Environmental, Inc.

BEU 74

LCSD

LCSD

Analytical Method: Chloride by EPA 300

Seq Number: 3093292 Matrix: Solid

MR

LCS Sample Id: 7680535-1-BKS MB Sample Id: 7680535-1-BLK

Spike

E300P Prep Method:

%RPD RPD Limit Units

Date Prep: 06.22.19

LCSD Sample Id: 7680535-1-BSD

Limits Flag **Parameter** Result Amount Result %Rec Date %Rec Result 06.22.19 23:07 Chloride < 0.858 250 248 99 248 99 90-110 0 20 mg/kg

LCS

Analytical Method: Chloride by EPA 300

Seq Number:

3093292

MS Sample Id: 628540-002 S

LCS

E300P Prep Method: Date Prep: 06.22.19

Analysis

MSD Sample Id:

Parent Sample Id: 628540-002 628540-002 SD Spike MS MS %RPD RPD Limit Units Parent **MSD MSD** Limits Analysis

Matrix: Soil

Flag **Parameter** Result Date Result Amount %Rec Result %Rec Chloride 160 250 363 81 363 81 90-110 0 20 mg/kg 06.22.19 23:29 X

Analytical Method: Chloride by EPA 300

Prep Method: E300P

06.22.19

3093292 Matrix: Soil Seq Number: Date Prep: Parent Sample Id:

MS Sample Id: 628585-002 S 628585-002

MSD Sample Id: 628585-002 SD

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Result Date Result %Rec Amount Result %Rec 06.23.19 01:10 Chloride 53.9 250 320 106 320 90-110 0 20 106 mg/kg

Analytical Method: TPH by SW8015 Mod

Prep Method:

TX1005P

Seq Number: 3093434 Matrix: Solid 06.23.19 Date Prep: 7680671-1-BSD

7680671-1-BKS LCS Sample Id: MB Sample Id: 7680671-1-BLK

LCSD Sample Id:

Flag

LCS %RPD RPD Limit Units MB Spike LCS LCSD Limits Analysis LCSD **Parameter** Result %Rec Date Result Amount %Rec Result

Gasoline Range Hydrocarbons (GRO) 9.45 906 91 931 93 70-135 3 20 06.24.19 00:12 1000 mg/kg 06.24.19 00:12 1020 102 1030 70-135 20 Diesel Range Organics (DRO) 1000 103 1 8.62 mg/kg

MB LCS LCSD MB LCS LCSD Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 1-Chlorooctane 97 77 72 70-135 % 06.24.19 00:12 92 06.24.19 00:12 o-Terphenyl 106 90 70-135 %

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

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |[D] = 100 * (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

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

Flag

Flag



Parent Sample Id:

MB Sample Id:

QC Summary 628550

LT Environmental, Inc.

BEU 74

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093434 Matrix: Soil

628550-001 MS Sample Id: 628550-001 S

Prep Method: TX1005P

Date Prep: 06.23.19

MSD Sample Id: 628550-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	10.9	998	966	96	952	94	70-135	1	20	mg/kg	06.24.19 01:24	
Diesel Range Organics (DRO)	9.40	998	996	99	1000	99	70-135	0	20	mg/kg	06.24.19 01:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	77		82		70-135	%	06.24.19 01:24
o-Terphenyl	95		91		70-135	%	06.24.19 01:24

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093925

7681021-1-BLK

Prep Method: SW5030B Matrix: Solid Date Prep: 06.27.19

LCS Sample Id: 7681021-1-BKS LCSD Sample Id: 7681021-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date
Benzene	< 0.00200	0.100	0.0794	79	0.0845	85	70-130	6	35	mg/kg	06.28.19 02:14
Toluene	< 0.00200	0.100	0.0778	78	0.0828	83	70-130	6	35	mg/kg	06.28.19 02:14
Ethylbenzene	< 0.00200	0.100	0.0838	84	0.0889	89	70-130	6	35	mg/kg	06.28.19 02:14
m,p-Xylenes	< 0.00400	0.200	0.167	84	0.178	89	70-130	6	35	mg/kg	06.28.19 02:14
o-Xylene	< 0.00200	0.100	0.0814	81	0.0877	88	70-130	7	35	mg/kg	06.28.19 02:14
a .	MB	MB	L	CS I	LCS	LCSI) LCS	D L	imits	Units	Analysis

Surrogate	%Rec	Flag	%Rec	Flag	%Rec	Flag	Limits	Cints	Date
1,4-Difluorobenzene	92		93		94		70-130	%	06.28.19 02:14
4-Bromofluorobenzene	100		103		103		70-130	%	06.28.19 02:14

Analytical Method: BTEX by EPA 8021B

 Seq Number:
 3093925
 Matrix:
 Soil
 Date Prep:
 06.27.19

 Parent Sample Id:
 628927-001
 MS Sample Id:
 628927-001 S
 MSD Sample Id:
 628927-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00199	0.0994	0.0871	88	0.0789	79	70-130	10	35	mg/kg	06.28.19 10:29
Toluene	< 0.00199	0.0994	0.0845	85	0.0778	78	70-130	8	35	mg/kg	06.28.19 10:29
Ethylbenzene	< 0.00199	0.0994	0.0851	86	0.0799	80	70-130	6	35	mg/kg	06.28.19 10:29
m,p-Xylenes	< 0.00398	0.199	0.169	85	0.160	80	70-130	5	35	mg/kg	06.28.19 10:29
o-Xylene	< 0.00199	0.0994	0.0808	81	0.0746	75	70-130	8	35	mg/kg	06.28.19 10:29

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		93		70-130	%	06.28.19 10:29
4-Bromofluorobenzene	111		98		70-130	%	06.28.19 10:29

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference
$$\begin{split} [D] &= 100*(C\text{-A}) \, / \, B \\ RPD &= 200* \mid (C\text{-E}) \, / \, (C\text{+E}) \mid \\ [D] &= 100*(C) \, / \, [B] \end{split}$$

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result
C = MS/LCS Result

C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

SW5030B

Prep Method:



Chain of Custody

X						2	ain	of C	Chain of Custody	ody				Wo	ork Or	Work Order No:	0	628550
LABO	RATORIES		Hobbs, N	Houston, T Midland, VM (575-392-7	Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296 Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)	200 Dall 440) EL AZ (480-	as,TX (2 Paso,T) 355-090	14) 902-0: ((915)585 0) Atlanta	300 San A 3443 Lut	Intonio,TX bbock,TX 449-8800)	(210) 509-3 (806)794-12 Tampa,FL	3334 196 . (813-620-	2000)	Ś	www.xenco.com		Page	of .
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a: 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 vice. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of the control of \$75.00 will be applied to each project and a charge of \$75 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	cument and relinquis ble only for the cost le of \$75.00 will be a	hment of sa of samples oplied to ea	amples const and shall no ch project ar	titutes a valid p t assume any r nd a charge of t	urchase order f esponsibility fo \$5 for each sam	rom clier r any los: ple subm	t compar ses or ex itted to X	ny to Xenc penses inc enco, but	o, its affilial urred by the not analyze	tes and su e client if s d. These t	bcontractors such losses erms will be	. It assigns are due to c enforced ur	standard ircumstan iless previ	terms and ces beyon ously neg	d conditiond the conto	ns trol		
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Revised Date 051418 Rev. 2018,1



Page 1 of 1

IOS Number 41948

Date/Time: 06/20/19 16:41

Created by: Carlos Castro

Please send report to: Jessica Kramer

Lab# From: Carlsbad

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: Midland

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628550-001	S	BH01	06/17/19 14:30	E300_CL	Chloride by EPA 300	06/24/19	12/14/19	JKR	CL	
628550-001	S	BH01	06/17/19 14:30	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/01/19	JKR	GRO-DRO PHCC10C28 PI	
628550-001	S	BH01	06/17/19 14:30	SW8021B	BTEX by EPA 8021B	06/24/19	07/01/19	JKR	BR4FBZ BZ BZME EBZ X	
628550-002	S	BH01 A	06/17/19 14:35	SW8021B	BTEX by EPA 8021B	06/24/19	07/01/19	JKR	BR4FBZ BZ BZME EBZ X	
628550-002	S	BH01 A	06/17/19 14:35	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/01/19	JKR	GRO-DRO PHCC10C28 PI	
628550-002	S	BH01 A	06/17/19 14:35	E300_CL	Chloride by EPA 300	06/24/19	12/14/19	JKR	CL	
628550-003	S	BH02	06/17/19 14:40	SW8021B	BTEX by EPA 8021B	06/24/19	07/01/19	JKR	BR4FBZ BZ BZME EBZ X	
628550-003	S	BH02	06/17/19 14:40	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/01/19	JKR	GRO-DRO PHCC10C28 PI	
628550-003	S	BH02	06/17/19 14:40	E300_CL	Chloride by EPA 300	06/24/19	12/14/19	JKR	CL	
628550-004	S	BH02 A	06/17/19 14:45	SW8021B	BTEX by EPA 8021B	06/24/19	07/01/19	JKR	BR4FBZ BZ BZME EBZ X	
628550-004	S	BH02 A	06/17/19 14:45	E300_CL	Chloride by EPA 300	06/24/19	12/14/19	JKR	CL	
628550-004	S	BH02 A	06/17/19 14:45	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/01/19	JKR	GRO-DRO PHCC10C28 PI	

Inter Office Shipment or Sample Comments:

Relinquished By:

Carlos Castro

Date Relinquished: <u>06/20/2019</u>

Received By:

Brianna Teel

Date Received: <u>06/21/2019 07:33</u>

Cooler Temperature: 0.4

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland IOS #: 41948

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used: R8

Date Sent: 06/20/2019 04:41 PM Sent By: Carlos Castro

Sent by:	Carios Castro	Date Sent:	06/20/2019 04.41 PW		
Received By	y: Brianna Teel	Date Received	: 06/21/2019 07:33 AM		
		Sample Re	ceipt Checklist		Comments
#1 *Tempe	erature of cooler(s)?			.4	
#2 *Shippir	ng container in good conditi	on?		Yes	
#3 *Sample	es received with appropriate	e temperature?		Yes	
#4 *Custod	dy Seals intact on shipping	container/ cooler?		N/A	
#5 *Custod	dy Seals Signed and dated t	or Containers/cool	ers	N/A	
#6 *IOS pre	esent?			Yes	
#7 Any mis	ssing/extra samples?			No	
#8 IOS agr	ees with sample label(s)/m	atrix?		Yes	
#9 Sample	matrix/ properties agree wi	th IOS?		Yes	
#10 Sampl	les in proper container/ bott	e?		Yes	
#11 Sampl	les properly preserved?			Yes	
#12 Sampl	le container(s) intact?			Yes	
#13 Suffici	ent sample amount for indi	cated test(s)?		Yes	
#14 All san	mples received within hold t	ime?		Yes	
* Must be co	ompleted for after-hours on	delivery of sample	es prior to placing in th	ne refrigerator	
Corrective A	ction Taken:				
		Nonconfo	rmance Documentatio	n	
Contact:		Contacted by :		Date:	
	Checklist reviewed by:	Brime Tuy Brians	Dana Teel	ate: <u>06/21/2019</u>	



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/20/2019 02:30:00 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 628550

Temperature Measuring device used: T NM 007

	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 contain	ner/ cooler?	No	
#5 Custody Seals intact on sample bottles?		No	
#6*Custody Seals Signed and dated?		No	
#7 *Chain of Custody present?	•	Yes	
#8 Any missing/extra samples?	•	Yes	
#9 Chain of Custody signed when relinquish	ned/ received?	Yes	
#10 Chain of Custody agrees with sample la	abels/matrix?	Yes	
#11 Container label(s) legible and intact?	•	Yes	
#12 Samples in proper container/ bottle?	•	Yes	
#13 Samples properly preserved?	•	Yes	
#14 Sample container(s) intact?	`	Yes	
#15 Sufficient sample amount for indicated	test(s)?	Yes	
#16 All samples received within hold time?	`	Yes	
#17 Subcontract of sample(s)?	•	Yes	Subbed to Xenco Midland
#18 Water VOC samples have zero headsp	ace?	N/A	

Analyst:		PH Device/Lot#:	
	Checklist completed by:	Carlos Castro	Date: <u>06/20/2019</u>
	Checklist reviewed by:	Jessica Vermer	Date: 06/21/2019

Jessica Kramer

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

Analytical Report 628554

for

LT Environmental, Inc.

Project Manager: Dan Moir BEU 74

30-JUN-19

Collected By: Client



1089 N Canal Street Carlsbad, NM 88220

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



30-JUN-19

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

Reference: XENCO Report No(s): 628554

BEU 74

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628554. 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. 628554 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Vramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 628554

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH03	S	06-18-19 08:40	1 ft	628554-001
BH03A	S	06-18-19 08:55	4 ft	628554-002
BH04	S	06-18-19 09:05	2 ft	628554-003
BH04A	S	06-18-19 09:10	3 ft	628554-004
BH05	S	06-18-19 09:15	1 ft	628554-005
BH05A	S	06-18-19 09:25	3 ft	628554-006
BH06	S	06-18-19 09:35	2 ft	628554-007
BH06A	S	06-18-19 09:40	3 ft	628554-008

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: BEU 74

Project ID: Report Date: 30-JUN-19 Work Order Number(s): 628554 Date Received: 06/20/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093944 BTEX by EPA 8021B

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

Certificate of Analysis Summary 628554

LT Environmental, Inc., Arvada, CO

Project Name: BEU 74

Date Received in Lab: Thu Jun-20-19 02:10 pm

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

Project Id: Contact:

Project Location:

Delaware Basin

Dan Moir

	Lab Id:	628554-0	001	628554-	002	628554-0	003	628554-0	004	628554-	005	628554-0	006
	Field Id:	BH03	,	BH03.	A	BH04		BH04	A	BH05	5	BH05/	A
Analysis Requested	Depth:	1- ft		4- ft		2- ft		3- ft		1- ft		3- ft	
	Matrix:	SOIL	,	SOIL	,	SOIL	,	SOIL	,	SOIL		SOIL	,
	Sampled:	Jun-18-19	08:40	Jun-18-19	08:55	Jun-18-19	09:05	Jun-18-19	09:10	Jun-18-19	09:15	Jun-18-19	09:25
BTEX by EPA 8021B	Extracted:	Jun-28-19	17:04										
SUB: T104704400-18-16	Analyzed:	Jun-30-19	04:30	Jun-30-19	04:53	Jun-30-19	06:39	Jun-30-19	07:02	Jun-30-19	07:25	Jun-30-19	07:49
	Units/RL:	mg/kg	RL										
Benzene		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199
Toluene		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199
Ethylbenzene		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199
m,p-Xylenes		< 0.00401	0.00401	< 0.00402	0.00402	< 0.00402	0.00402	< 0.00399	0.00399	< 0.00400	0.00400	< 0.00398	0.00398
o-Xylene		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199
Total Xylenes		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199
Total BTEX		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199
Chloride by EPA 300	Extracted:	Jun-22-19	18:00	Jun-22-19	18:30								
SUB: T104704400-18-16	Analyzed:	Jun-23-19	00:05	Jun-23-19	00:10	Jun-23-19	00:14	Jun-23-19	00:19	Jun-23-19	00:24	Jun-24-19	12:39
	Units/RL:	mg/kg	RL										
Chloride		186	4.95	98.2	5.04	47.8	5.00	201	4.97	5.95	5.05	9.93	5.05
TPH by SW8015 Mod	Extracted:	Jun-23-19	12:00										
SUB: T104704400-18-16	Analyzed:	Jun-24-19	03:25	Jun-24-19	03:49	Jun-24-19	04:13	Jun-24-19	04:38	Jun-24-19	05:02	Jun-24-19	05:26
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		493	15.0	19.5	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		78.1	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0
Total TPH		571	15.0	19.5	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0
Total GRO-DRO		493	15.0	19.5	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0

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

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

Jessica Vermer



Certificate of Analysis Summary 628554

LT Environmental, Inc., Arvada, CO

Project Name: BEU 74

Date Received in Lab: Thu Jun-20-19 02:10 pm

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

Project Id: Contact: Dan Moir

Delaware Basin

Project Location:

	Lab Id:	628554-0	007	628554-0	800		
Analysis Requested	Field Id:	BH06		BH06A	A		
Analysis Requesieu	Depth:	2- ft		3- ft			
	Matrix:	SOIL		SOIL			
	Sampled:	Jun-18-19 (09:35	Jun-18-19	09:40		
BTEX by EPA 8021B	Extracted:	Jun-28-19	17:04	Jun-28-19	17:04		
SUB: T104704400-18-16	Analyzed:	Jun-30-19 (08:12	Jun-30-19 (08:35		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00201	0.00201	< 0.00200	0.00200		
Toluene		< 0.00201	0.00201	< 0.00200	0.00200		
Ethylbenzene		< 0.00201	0.00201	< 0.00200	0.00200		
m,p-Xylenes		< 0.00402	0.00402	< 0.00401	0.00401		
o-Xylene		< 0.00201	0.00201	< 0.00200	0.00200		
Total Xylenes		< 0.00201	0.00201	< 0.00200	0.00200		
Total BTEX		< 0.00201	0.00201	< 0.00200	0.00200		
Chloride by EPA 300	Extracted:	Jun-22-19	18:30	Jun-22-19	18:30		
SUB: T104704400-18-16	Analyzed:	Jun-24-19	12:56	Jun-24-19	13:01		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		104	5.00	117	4.95		
TPH by SW8015 Mod	Extracted:	Jun-23-19	12:00	Jun-23-19	12:00		
SUB: T104704400-18-16	Analyzed:	Jun-24-19 (06:14	Jun-24-19 (06:39		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0		
Total TPH		<15.0	15.0	<15.0	15.0		
Total GRO-DRO		<15.0	15.0	<15.0	15.0		

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

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

Jessica Vramer

Jessica Kramer Project Assistant



Certificate of Analytical Results 628554

LT Environmental, Inc., Arvada, CO

BEU 74

Soil

06.22.19 18.00

Sample Id: **BH03** Matrix:

Date Received:06.20.19 14.10

Lab Sample Id: 628554-001

Date Collected: 06.18.19 08.40

Sample Depth: 1 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

CHE Tech:

Date Prep:

CHE Analyst: Seq Number: 3093323 Basis:

Wet Weight SUB: T104704400-18-16

Parameter Result Cas Number RLUnits **Analysis Date** Dil Flag Chloride 16887-00-6 186 4.95 mg/kg 06.23.19 00.05 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

SUB: T104704400-18-16

06.24.19 03.25

% Moisture:

Tech:

Seq Number: 3093434

o-Terphenyl

Analyst:

ARM ARM

Date Prep: 06.23.19 12.00

86

%

70-135

Basis:

Wet Weight

Cas Number Result RL **Parameter** Units **Analysis Date** Flag Dil Gasoline Range Hydrocarbons (GRO) PHC610 06.24.19 03.25 <15.0 15.0 mg/kg U 1 Diesel Range Organics (DRO) C10C28DRO 493 15.0 mg/kg 06.24.19 03.25 1 Motor Oil Range Hydrocarbons (MRO) PHCG2835 78.1 15.0 06.24.19 03.25 mg/kg 1 **Total TPH** PHC635 571 15.0 mg/kg 06.24.19 03.25 Total GRO-DRO PHC628 493 15.0 06.24.19 03.25 mg/kg % Cas Number Surrogate Units Limits **Analysis Date** Flag Recovery 1-Chlorooctane 111-85-3 70-135 06.24.19 03.25 % 75

84-15-1



DVM

Tech:

Certificate of Analytical Results 628554

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH03 Matrix: Soil Date Received:06.20.19 14.10

Lab Sample Id: 628554-001 Date Collected: 06.18.19 08.40 Sample Depth: 1 ft

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

% Moisture:

Analyst: FOV Date Prep: 06.28.19 17.04 Basis: Wet Weight

Seq Number: 3093944 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.30.19 04.30	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.30.19 04.30	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.30.19 04.30	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	06.30.19 04.30	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.30.19 04.30	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.30.19 04.30	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.30.19 04.30	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	94	%	70-130	06.30.19 04.30		
4-Bromofluorobenzene		460-00-4	113	%	70-130	06.30.19 04.30		



Certificate of Analytical Results 628554

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH03A

Matrix: Soil Date Received:06.20.19 14.10

Lab Sample Id: 628554-002

Date Collected: 06.18.19 08.55

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

CHE Tech:

CHE

Date Prep:

Basis:

Wet Weight

Analyst: Seq Number: 3093323

06.22.19 18.00

SUB: T104704400-18-16

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 06.23.19 00.10 98.2 5.04 mg/kg 1

Analytical Method: TPH by SW8015 Mod

ARM

Tech: ARM Analyst:

Seq Number: 3093434

Date Prep:

06.23.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	06.24.19 03.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	19.5	15.0		mg/kg	06.24.19 03.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.24.19 03.49	U	1
Total TPH	PHC635	19.5	15.0		mg/kg	06.24.19 03.49		1
Total GRO-DRO	PHC628	19.5	15.0		mg/kg	06.24.19 03.49		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	83	%	70-135	06.24.19 03.49		
o-Terphenyl		84-15-1	87	%	70-135	06.24.19 03.49		



Certificate of Analytical Results 628554

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: Matrix: BH03A Soil

Date Received:06.20.19 14.10

Lab Sample Id: 628554-002 Date Collected: 06.18.19 08.55 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DVM % Moisture:

Basis:

FOV Analyst:

06.28.19 17.04

Wet Weight SUB: T104704400-18-16

Seq Number: 3093944

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.30.19 04.53	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.30.19 04.53	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.30.19 04.53	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.30.19 04.53	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.30.19 04.53	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.30.19 04.53	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.30.19 04.53	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	91	%	70-130	06.30.19 04.53		
4-Bromofluorobenzene		460-00-4	126	%	70-130	06.30.19 04.53		

Date Prep:



LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH04

[04

Matrix: Soil

Date Received:06.20.19 14.10

Lab Sample Id: 628554-003

Date Collected: 06.18.19 09.05

Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

% Moisture:

Tech: CHE

Analyst: CHE

Date Prep: 06.22.19 18.00

Basis: Wet Weight

Prep Method: E300P

SUB: T104704400-18-16

Seq Number: 3093323

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 47.8
 5.00
 mg/kg
 06.23.19 00.14
 1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093434

Date Prep:

06.23.19 12.00

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	06.24.19 04.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.24.19 04.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.24.19 04.13	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.19 04.13	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.24.19 04.13	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	87	%	70-135	06.24.19 04.13		
o-Terphenyl		84-15-1	91	%	70-135	06.24.19 04.13		



Tech:

Certificate of Analytical Results 628554

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH04 Matrix: Soil Date Received:06.20.19 14.10

Lab Sample Id: 628554-003 Date Collected: 06.18.19 09.05 Sample Depth: 2 ft

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

% Moisture:

Analyst: FOV Date Prep: 06.28.19 17.04 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.30.19 06.39	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.30.19 06.39	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.30.19 06.39	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.30.19 06.39	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.30.19 06.39	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.30.19 06.39	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.30.19 06.39	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	118	%	70-130	06.30.19 06.39		
1.4-Difluorobenzene		540-36-3	89	%	70-130	06.30.19 06.39		



LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH04A

Matrix: Soil Date Received:06.20.19 14.10

Lab Sample Id: 628554-004

Date Collected: 06.18.19 09.10

Sample Depth: 3 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

CHE

% Moisture:

Tech: CHE

Analyst:

Date Prep:

Basis:

Wet Weight

Seq Number: 3093323

06.22.19 18.00

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	201	4.97	mg/kg	06.23.19 00.19		1

Analytical Method: TPH by SW8015 Mod

ARM

ARM Analyst:

Seq Number: 3093434

Tech:

06.23.19 12.00 Date Prep:

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	06.24.19 04.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9		mg/kg	06.24.19 04.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	06.24.19 04.38	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	06.24.19 04.38	U	1
Total GRO-DRO	PHC628	<14.9	14.9		mg/kg	06.24.19 04.38	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	86	%	70-135	06.24.19 04.38		
o-Terphenyl		84-15-1	88	%	70-135	06.24.19 04.38		



LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH04A Matrix: Soil Date Received:06.20.19 14.10

Lab Sample Id: 628554-004 Date Collected: 06.18.19 09.10 Sample Depth: 3 ft

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

Tech: DVM % Moisture:

Analyst: FOV Date Prep: 06.28.19 17.04 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.30.19 07.02	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.30.19 07.02	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.30.19 07.02	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	06.30.19 07.02	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.30.19 07.02	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.30.19 07.02	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.30.19 07.02	U	1
g		C. N. J.	%	TT . *4	T * *4	A . 1 . 2 . D. 4	Til	
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	91	%	70-130	06.30.19 07.02		
4-Bromofluorobenzene		460-00-4	118	%	70-130	06.30.19 07.02		



LT Environmental, Inc., Arvada, CO

BEU 74

Soil

Sample Id: **BH05**

Matrix:

Date Received:06.20.19 14.10

Lab Sample Id: 628554-005

Date Collected: 06.18.19 09.15

Sample Depth: 1 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

CHE Tech:

Date Prep:

Basis:

CHE Analyst: Seq Number: 3093323

Wet Weight SUB: T104704400-18-16

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 06.23.19 00.24 5.95 5.05 mg/kg 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: Analyst: ARM ARM

Seq Number: 3093434

Date Prep:

06.23.19 12.00

06.22.19 18.00

% 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	06.24.19 05.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.24.19 05.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.24.19 05.02	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.19 05.02	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.24.19 05.02	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	85	%	70-135	06.24.19 05.02		
o-Terphenyl		84-15-1	87	%	70-135	06.24.19 05.02		



Tech:

Certificate of Analytical Results 628554

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH05 Matrix: Soil

Lab Sample Id: 628554-005 Date Collected: 06.18.19 09.15 Sample Depth: 1 ft

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

% Moisture:

Date Received:06.20.19 14.10

Analyst: FOV Date Prep: 06.28.19 17.04 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.30.19 07.25	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.30.19 07.25	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.30.19 07.25	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	06.30.19 07.25	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.30.19 07.25	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.30.19 07.25	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.30.19 07.25	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	90	%	70-130	06.30.19 07.25		
4-Bromofluorobenzene		460-00-4	121	%	70-130	06.30.19 07.25		



LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH05A Matrix: Soil Date Received:06.20.19 14.10

Lab Sample Id: 628554-006

Date Collected: 06.18.19 09.25

Sample Depth: 3 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

Basis:

CHE Tech:

Analyst:

CHE

06.22.19 18.30

Wet Weight

SUB: T104704400-18-16

Seq Number: 3093326

Parameter Result Cas Number RLUnits **Analysis Date** Dil Flag 16887-00-6 Chloride 9.93 5.05 mg/kg 06.24.19 12.39 1

Date Prep:

Analytical Method: TPH by SW8015 Mod

ARM

Tech:

06.23.19 12.00

Prep Method: TX1005P

% Moisture:

Basis:

Analyst: ARM Date Prep: Seq Number: 3093434

SUB: T104704400-18-16

Wet Weight

Cas Number Result RL**Parameter** Units **Analysis Date** Flag Dil Gasoline Range Hydrocarbons (GRO) PHC610 06.24.19 05.26 <15.0 15.0 mg/kg U 1 Diesel Range Organics (DRO) C10C28DRO <15.0 15.0 mg/kg 06.24.19 05.26 U 1 Motor Oil Range Hydrocarbons (MRO) PHCG2835 <15.0 15.0 06.24.19 05.26 U mg/kg Total TPH PHC635 <15.0 15.0 mg/kg 06.24.19 05.26 U Total GRO-DRO U PHC628 <15.0 15.0 06.24.19 05.26 mg/kg 1 % Flag Surrogate Cas Number Units Limits **Analysis Date** Recovery 1-Chlorooctane 111-85-3 70-135 06.24.19 05.26 89 % o-Terphenyl 84-15-1 102 % 70-135 06.24.19 05.26



Tech:

Certificate of Analytical Results 628554

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH05A Matrix: Soil Date Received:06.20.19 14.10

Lab Sample Id: 628554-006 Date Collected: 06.18.19 09.25 Sample Depth: 3 ft

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

% Moisture:

Analyst: FOV Date Prep: 06.28.19 17.04 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.30.19 07.49	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.30.19 07.49	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.30.19 07.49	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.30.19 07.49	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.30.19 07.49	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.30.19 07.49	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.30.19 07.49	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	113	%	70-130	06.30.19 07.49		
1,4-Difluorobenzene		540-36-3	93	%	70-130	06.30.19 07.49		

1



Certificate of Analytical Results 628554

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: **BH06**

Matrix:

Date Received:06.20.19 14.10

Lab Sample Id: 628554-007

Soil Date Collected: 06.18.19 09.35

Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

CHE Tech:

Analyst:

CHE

Date Prep: 06.22.19 18.30 Basis: Wet Weight

SUB: T104704400-18-16

Seq Number: 3093326

Dil

Parameter Cas Number Result RLUnits **Analysis Date** Flag Chloride 16887-00-6 104 5.00 mg/kg 06.24.19 12.56

Analytical Method: TPH by SW8015 Mod

ARM

Tech: ARM Analyst:

Seq Number: 3093434

06.23.19 12.00 Date Prep:

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	06.24.19 06.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.24.19 06.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.24.19 06.14	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.19 06.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.24.19 06.14	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	83	%	70-135	06.24.19 06.14		
o-Terphenyl		84-15-1	80	%	70-135	06.24.19 06.14		



Seq Number: 3093944

1,4-Difluorobenzene

Tech:

Certificate of Analytical Results 628554

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH06 Matrix: Soil Date Received:06.20.19 14.10

540-36-3

Lab Sample Id: 628554-007 Date Collected: 06.18.19 09.35 Sample Depth: 2 ft

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

% Moisture:

70-130

Analyst: FOV Date Prep: 06.28.19 17.04 Basis: Wet Weight

SUB: T104704400-18-16

06.30.19 08.12

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.30.19 08.12	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.30.19 08.12	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.30.19 08.12	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.30.19 08.12	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.30.19 08.12	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.30.19 08.12	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.30.19 08.12	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	114	%	70-130	06.30.19 08.12		

91



LT Environmental, Inc., Arvada, CO

BEU 74

Soil

Sample Id: BH06A Matrix:

Date Prep:

Date Received:06.20.19 14.10

Lab Sample Id: 628554-008

Date Collected: 06.18.19 09.40

Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Basis:

Tech:

CHE

Wet Weight

Analyst:

CHE

06.22.19 18.30

SUB: T104704400-18-16

Seq Number: 3093326

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 117 4.95 mg/kg 06.24.19 13.01 1

Analytical Method: TPH by SW8015 Mod

ARM

Tech: Analyst:

ARM

Seq Number: 3093434

06.23.19 12.00 Date Prep:

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	06.24.19 06.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	06.24.19 06.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	06.24.19 06.39	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.19 06.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	06.24.19 06.39	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	85	%	70-135	06.24.19 06.39		
o-Terphenyl		84-15-1	90	%	70-135	06.24.19 06.39		



Tech:

Certificate of Analytical Results 628554

LT Environmental, Inc., Arvada, CO

BEU 74

Sample Id: BH06A Matrix: Soil Date Received:06.20.19 14.10

Lab Sample Id: 628554-008 Date Collected: 06.18.19 09.40 Sample Depth: 3 ft

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

% Moisture:

Analyst: FOV Date Prep: 06.28.19 17.04 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.30.19 08.35	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.30.19 08.35	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.30.19 08.35	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	06.30.19 08.35	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.30.19 08.35	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.30.19 08.35	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.30.19 08.35	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	116	%	70-130	06.30.19 08.35		
1,4-Difluorobenzene		540-36-3	91	%	70-130	06.30.19 08.35		



Flagging Criteria

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

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

^{**} Surrogate recovered outside laboratory control limit.

E300P

E300P

E300P

06.22.19

Prep Method:

Prep Method:

Prep Method:

Date Prep:



QC Summary 628554

LT Environmental, Inc.

BEU 74

Analytical Method: Chloride by EPA 300

Seq Number: 3093323 Matrix: Solid

LCS Sample Id: 7680537-1-BKS LCSD Sample Id: 7680537-1-BSD MB Sample Id: 7680537-1-BLK

MR Spike LCS LCS Limits %RPD RPD Limit Units LCSD LCSD Analysis Flag **Parameter** Result Amount Result %Rec Date %Rec Result

06.22.19 22:04 Chloride < 5.00 250 237 95 236 94 90-110 0 20 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3093326 Matrix: Solid Date Prep: 06.22.19

MB Sample Id: 7680538-1-BLK LCS Sample Id: 7680538-1-BKS LCSD Sample Id: 7680538-1-BSD

MB Spike LCS LCS %RPD RPD Limit Units LCSD LCSD Limits Analysis Flag **Parameter** Result %Rec Date Result Amount Result %Rec Chloride < 5.00 250 254 102 254 102 90-110 0 20 mg/kg 06.24.19 12:28

Analytical Method: Chloride by EPA 300

Prep Method: E300P 3093323 Matrix: Soil 06.22.19 Seq Number: Date Prep:

MS Sample Id: 628585-012 S MSD Sample Id: 628585-012 SD 628585-012 Parent Sample Id:

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Result Date Result %Rec Amount Result %Rec Chloride 761 250 930 68 931 68 90-110 0 20 06.22.19 22:18 X mg/kg

Analytical Method: Chloride by EPA 300

3093323 Matrix: Soil Seq Number: Date Prep: 06.22.19 628586-006 S MSD Sample Id: 628586-006 SD 628586-006 MS Sample Id: Parent Sample Id:

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Result %Rec Date Result Amount Result %Rec

Chloride 33.8 272 96 272 96 90-110 0 20 06.22.19 23:26 248 mg/kg

Analytical Method: Chloride by EPA 300

E300P Prep Method: 3093326 Matrix: Soil Seq Number: Date Prep: 06.22.19

Parent Sample Id: 628554-006 MS Sample Id: 628554-006 S MSD Sample Id: 628554-006 SD

Parent Spike MS MS Limits %RPD RPD Limit Units Analysis **MSD MSD** Flag **Parameter** Result Date Result Amount %Rec Result %Rec Chloride 9.93 253 263 100 262 100 90-110 0 20 mg/kg 06.24.19 12:44

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

Log Difference

[D] = 100*(C-A) / BRPD = 200* | (C-E) / (C+E) |[D] = 100 * (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

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

Flag

Flag



QC Summary 628554

LT Environmental, Inc.

BEU 74

Analytical Method:TPH by SW8015 ModPrep Method:TX1005PSeq Number:3093434Matrix: SolidDate Prep:06.23.19

MB Sample Id: 7680671-1-BLK LCS Sample Id: 7680671-1-BKS LCSD Sample Id: 7680671-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	t Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	9.45	1000	906	91	931	93	70-135	3	20	mg/kg	06.24.19 00:12	
Diesel Range Organics (DRO)	8.62	1000	1020	102	1030	103	70-135	1	20	mg/kg	06.24.19 00:12	
	MD	MD	т.	ce I	CC	T 000	5 I CC	D 1	·•4	I Inita	Amalyaia	

MB LCSD Units Analysis MB LCS LCS Limits LCSD **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 06.24.19 00:12 1-Chlorooctane 97 77 72 70-135 % o-Terphenyl 106 90 92 70-135 06.24.19 00:12

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P

 Seq Number:
 3093434
 Matrix:
 Soil
 Date Prep:
 06.23.19

 Parent Sample Id:
 628550-001
 MS Sample Id:
 628550-001 S
 MSD Sample Id:
 628550-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lin	nit Units	Analysis Date
Gasoline Range Hydrocarbons (GRO)	10.9	998	966	96	952	94	70-135	1	20	mg/kg	06.24.19 01:24
Diesel Range Organics (DRO)	9.40	998	996	99	1000	99	70-135	0	20	mg/kg	06.24.19 01:24

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	77		82		70-135	%	06.24.19 01:24
o-Terphenyl	95		91		70-135	%	06.24.19 01:24

Analytical Method:BTEX by EPA 8021BPrep Method:SW5030BSeq Number:3093944Matrix:SolidDate Prep:06.28.19

 Seq Number:
 3093944
 Matrix:
 Solid
 Date Prep:
 06.28.19

 MB Sample Id:
 7681016-1-BLK
 LCS Sample Id:
 7681016-1-BKS
 LCSD Sample Id:
 7681016-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lin	nit Units	Analysis Date	
Benzene	< 0.00199	0.0996	0.0718	72	0.0759	76	70-130	6	35	mg/kg	06.29.19 22:59	
Toluene	< 0.00199	0.0996	0.0826	83	0.0855	86	70-130	3	35	mg/kg	06.29.19 22:59	
Ethylbenzene	0.000569	0.0996	0.0900	90	0.0945	95	70-130	5	35	mg/kg	06.29.19 22:59	
m,p-Xylenes	< 0.00101	0.199	0.175	88	0.184	92	70-130	5	35	mg/kg	06.29.19 22:59	
o-Xylene	< 0.00199	0.0996	0.0861	86	0.0897	90	70-130	4	35	mg/kg	06.29.19 22:59	

Surrogate	%Rec	Flag	%Rec	Flag	%Rec	Flag	Limits	Omis	Date
1,4-Difluorobenzene	84		91		92		70-130	%	06.29.19 22:59
4-Bromofluorobenzene	114		104		104		70-130	%	06.29.19 22:59

LCS

LCS

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference
$$\begin{split} [D] &= 100*(\text{C-A}) \, / \, B \\ RPD &= 200* \mid (\text{C-E}) \, / \, (\text{C+E}) \mid \\ [D] &= 100*(\text{C}) \, / \, [B] \end{split}$$

MB

MB

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result C = MS/LCS Result

E = MS/LCS ResultE = MSD/LCSD Result

LCSD

Limits

LCSD

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

Analysis

Units



Seq Number:

QC Summary 628554

LT Environmental, Inc.

BEU 74

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B 3093944 Matrix: Soil Date Prep: 06.28.19

MS Sample Id: 629132-001 S MSD Sample Id: 629132-001 SD Parent Sample Id: 629132-001

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.0174	17	0.0189	19	70-130	8	35	mg/kg	06.29.19 23:46	X
Toluene	< 0.00200	0.100	0.0266	27	0.0283	28	70-130	6	35	mg/kg	06.29.19 23:46	X
Ethylbenzene	< 0.00200	0.100	0.0703	70	0.0661	65	70-130	6	35	mg/kg	06.29.19 23:46	X
m,p-Xylenes	< 0.00401	0.200	0.0971	49	0.0985	49	70-130	1	35	mg/kg	06.29.19 23:46	X
o-Xylene	< 0.00200	0.100	0.0516	52	0.0521	52	70-130	1	35	mg/kg	06.29.19 23:46	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		92		70-130	%	06.29.19 23:46
4-Bromofluorobenzene	113		114		70-130	%	06.29.19 23:46



Chain of Custody

Work Order No:

www.xenco.com

of

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296

Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

1 1
Relinquished by: (Signature)
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.
Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K
ANALYSIS REQUEST
Ltenv.com Deliverables: EDD
NM Reporting:Level III Level III PST/UST TRRP Level IV
State of Project:
XTO ~ E _{heff bj} Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
Littre 11

Inter-Office Shipment



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IOS Number 41947

Date/Time: 06/20/19 16:38 Created by: Carlos Castro Please send report to: Jessica Kramer

Lab# From: Carlsbad Delivery Priority: Address: 1089 N Canal Street

Lab# To: Midland Air Bill No.: E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628554-001	S	BH03	06/18/19 08:40	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628554-001	S	BH03	06/18/19 08:40	E300_CL	Chloride by EPA 300	06/24/19	12/15/19	JKR	CL	
628554-001	S	BH03	06/18/19 08:40	SW8021B	BTEX by EPA 8021B	06/24/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628554-002	S	ВН03А	06/18/19 08:55	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628554-002	S	вноза	06/18/19 08:55	SW8021B	BTEX by EPA 8021B	06/24/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628554-002	S	вноза	06/18/19 08:55	E300_CL	Chloride by EPA 300	06/24/19	12/15/19	JKR	CL	
628554-003	S	BH04	06/18/19 09:05	SW8021B	BTEX by EPA 8021B	06/24/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628554-003	S	BH04	06/18/19 09:05	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628554-003	S	BH04	06/18/19 09:05	E300_CL	Chloride by EPA 300	06/24/19	12/15/19	JKR	CL	
628554-004	S	BH04A	06/18/19 09:10	SW8021B	BTEX by EPA 8021B	06/24/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628554-004	S	BH04A	06/18/19 09:10	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628554-004	S	BH04A	06/18/19 09:10	E300_CL	Chloride by EPA 300	06/24/19	12/15/19	JKR	CL	
628554-005	S	BH05	06/18/19 09:15	SW8021B	BTEX by EPA 8021B	06/24/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628554-005	S	BH05	06/18/19 09:15	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628554-005	S	BH05	06/18/19 09:15	E300_CL	Chloride by EPA 300	06/24/19	12/15/19	JKR	CL	
628554-006	S	BH05A	06/18/19 09:25	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628554-006	S	BH05A	06/18/19 09:25	SW8021B	BTEX by EPA 8021B	06/24/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628554-006	S	BH05A	06/18/19 09:25	E300_CL	Chloride by EPA 300	06/24/19	12/15/19	JKR	CL	
628554-007	S	BH06	06/18/19 09:35	E300_CL	Chloride by EPA 300	06/24/19	12/15/19	JKR	CL	
628554-007	S	BH06	06/18/19 09:35	SW8021B	BTEX by EPA 8021B	06/24/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628554-007	S	BH06	06/18/19 09:35	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	
628554-008	S	BH06A	06/18/19 09:40	SW8021B	BTEX by EPA 8021B	06/24/19	07/02/19	JKR	BR4FBZ BZ BZME EBZ X	
628554-008	S	BH06A	06/18/19 09:40	E300_CL	Chloride by EPA 300	06/24/19	12/15/19	JKR	CL	
628554-008	S	BH06A	06/18/19 09:40	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/02/19	JKR	GRO-DRO PHCC10C28 PI	

Inter-Office Shipment

Page 2 of 2

IOS Number 41947

Date/Time: 06/20/19 16:38

Created by: Carlos Castro

Lab# From: Carlsbad

Delivery Priority:

Lab# To: Midland

Air Bill No.:

Inter Office Shipment or Sample Comments:

Relinquished By:

Carlos Castro

Date Relinquished: 06/20/2019

Please send report to: Jessica Kramer

Address: 1089 N Canal Street

E-Mail: jessica.kramer@xenco.com

Received By:

Date Received: <u>06/21/2019 07:33</u>

Cooler Temperature: 0.4



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland IOS #: 41947

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used: R8

Date Sent: 06/20/2019 04:38 PM Sent By: Carlos Castro

Received By: Brianna Teel	Date Received: 06/21/2019 07	:33 AM	
	Sample Receipt Checklis	st	Comments
#1 *Temperature of cooler(s)?		.4	
#2 *Shipping container in good condition	on?	Yes	
#3 *Samples received with appropriate	temperature?	Yes	
#4 *Custody Seals intact on shipping of	ontainer/ cooler?	N/A	
#5 *Custody Seals Signed and dated for	or Containers/coolers	N/A	
#6 *IOS present?		Yes	
#7 Any missing/extra samples?		No	
#8 IOS agrees with sample label(s)/ma	atrix?	Yes	
#9 Sample matrix/ properties agree wit	h IOS?	Yes	
#10 Samples in proper container/ bottle	e?	Yes	
#11 Samples properly preserved?		Yes	
#12 Sample container(s) intact?		Yes	
#13 Sufficient sample amount for indic	ated test(s)?	Yes	
#14 All samples received within hold ti	me?	Yes	
* Must be completed for after-hours d NonConformance:	elivery of samples prior to plac	ing in the refrigerator	
Corrective Action Taken:			
	Nonconformance Docum	entation	
Contact:	Contacted by :	Date:	
Checklist reviewed by:	Brigana Teel	Date: <u>06/21/2019</u>	



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/20/2019 02:10:00 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 628554

Temperature Measuring device used: T-NM 007

	Sample Receipt Checklist	C	comments
#1 *Temperature of cooler(s)?		3	
#2 *Shipping container in good condition?	Y	es	
#3 *Samples received on ice?	Y	es	
#4 *Custody Seals intact on shipping conta	iner/ cooler?	lo	
#5 Custody Seals intact on sample bottles?)	lo	
#6*Custody Seals Signed and dated?	N	lo	
#7 *Chain of Custody present?	Y	es	
#8 Any missing/extra samples?	Y	es	
#9 Chain of Custody signed when relinquis	hed/ received?	es	
#10 Chain of Custody agrees with sample I	abels/matrix? Y	es	
#11 Container label(s) legible and intact?	Υ	es	
#12 Samples in proper container/ bottle?	Υ	es	
#13 Samples properly preserved?	Υ	es	
#14 Sample container(s) intact?	Υ	es	
#15 Sufficient sample amount for indicated	test(s)?	es	
#16 All samples received within hold time?	Υ	es	
#17 Subcontract of sample(s)?	Υ	es S	ubbed to Xenco Midland
#18 Water VOC samples have zero headsp	pace?	/A	

Analyst:		PH Device/Lot#:		
	Checklist completed by:	Carlos Castro	Date: <u>06/20/2019</u>	
	Checklist reviewed by:	Jessica Warner Jessica Kramer	Date: 06/21/2019	

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II 811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III 1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 188241

CONDITIONS

Operator:	OGRID:
XTO PERMIAN OPERATING LLC.	373075
6401 HOLIDAY HILL ROAD	Action Number:
MIDLAND, TX 79707	188241
	Action Type:
	[IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Creat By		Condition Date
bha	II None	2/20/2023