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

State of New Mexico Energy Minerals and Natural **Resources Department**

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

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

Page 1 of 110

Incident ID	NAB1907758382	
District RP	2 2RP-5300	
Facility ID		
Application ID	pAB1907758096	

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # (assigned by OCD) NAB1907758382
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	·

Location of Release Source

(NAD 83 in decimal degrees to 5 decimal places)

Longitude

-103.92250

32.25946 Latitude

	· · · · · ·
ne Remuda North 31 State 123H	Site Type Production Well Facility
lease Discoursed	

Site Name Remuda North 31 State 123H	Site Type Production Well Facility	
Date Release Discovered 2/21/2019	API# (if applicable) 30-015-44414	

Unit Letter	Section	Township	Range	County
K	31	238	30E	Eddy

New Mexico Surface Owner: X State Federal Tribal Private (Name:

Nature and Volume of Release

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

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

Cause of Release

While filling frac tanks, a hose fell out of the top of the tank and released fluid to the well pad. A vacuum truck recovered free standing fluid. An environmental contractor will be retained to assist with remediation efforts when frac/completion activities are concluded.

Form C-141	State of New Mexico	Incident ID	NAB1907758382	
Page 2	Oil Conservation Division	District RP	2 2RP-5300	
		Facility ID		
		Application ID	pAB1907758096	

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

Initial Response

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

The source of the release has been stopped.

It impacted area has been secured to protect human health and the environment.

Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have <u>not</u> been undertaken, explain why: N/A

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Kyle Littrell	Title:
Signature: Kyle Kittrell@xtoenergy.com	Date: <u>3/7/2019</u> Talanhana: <u>432-221-7331</u>
email:	Telephone:
OCD Only	
Received by:	Date: 3/18/2019

Form C-141 Page 3

State of New Mexico **Oil Conservation Division**

Incident ID	NAB1907758382
District RP	2RP-5300
Facility ID	
Application ID	pAB1907758096

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 vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

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

Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.

- Field data
- \boxtimes Data table of soil contaminant concentration data
- \square Depth to water determination
- \square Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- \boxtimes Boring or excavation logs
- \square Photographs including date and GIS information
- \boxtimes 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.

ceived by OCD: 12/16/20	019 3:54:58 PM			Page 4 of 1
Form C-141	State of New Mexico	1	Incident ID	NAB1907758382
Page 4	Oil Conservation Divisi	on	District RP	2RP-5300
			Facility ID	
			Application ID	pAB1907758096
failed to adequately inves addition, OCD acceptance and/or regulations. Printed Name: Signature:	onment. The acceptance of a C-141 report by tigate and remediate contamination that pose a e of a C-141 report does not relieve the operat Kyle Littrell Mandata	a threat to groundwater, or of responsibility for o Title:SH Date:12/1	surface water, human health	n or the environment. In ederal, state, or local laws
OCD Only Received by:		Date:		

Form C-141 Page 6 State of New Mexico Oil Conservation Division

Incident ID	NAB1907758382
District RP	2RP-5300
Facility ID	
Application ID	pAB1907758096

Closure

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

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

A scaled site and sampling diagram as described in 19.15.29.11 NMAC

Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

Description of remediation activities

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

Printed Name: Kyle Littrell	Title:	SH&E Supervisor		
Printed Name: Kyle Littrell Signature: Image: Comparation of the second	Date:	12/16/2019		
email:Kyle_Littrell@xtoenergy.com	Telephone:	432-221-7331		
OCD Only				
<u>oeb omy</u>				
Received by:	Date	:		
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.				
Closure Approved by:	Da	te:		
Printed Name:	_ Ti	tle:		

LT Environmental, Inc.

3300 North "A" Street Building 1, Unit 222 Midland, Texas 79705 432,704,5178



December 16, 2019

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

RE: Closure Request Remuda North 31 State 123H Remediation Permit Number 2RP-5300 Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following request detailing site assessment and soil sampling activities at the Remuda North 31 State 123H (Site) in Unit K, Section 31, Township 23 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to confirm the presence or absence of impacts to soil following a release of produced water at the Site. Based on field observations, field screening, and laboratory analytical results from soil sampling activities, XTO is submitting this Closure Request and requesting No Further Action (NFA) for Remediation Permit (RP) Number 2RP-5300.

RELEASE BACKGROUND

On February 21, 2019, while filling frac tanks, a hose fell out of the top of the tank and released approximately 10 barrels (bbls) of fluid on to the well pad. A vacuum truck recovered the free standing fluid, a volume estimated to be approximately 3 bbls. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on March 7, 2019 and was assigned RP Number 2RP-5300 (Attachment 1).

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). 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 New Mexico Office of State Engineers (NM OSE) well C 02108, located almost 2.14 miles south of the Site. The water well has a depth to groundwater of approximately 186 feet bgs and a total depth of 200 feet bgs. Ground surface elevation at the water well location is





Bratcher, M. Page 2

3,200 feet above mean seal level. The closest continuously flowing water or significant watercourse to the Site is an unnamed dry wash located approximately 450 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake, and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a medium 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
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On April 9, 2019, LTE personnel conducted site reconnaissance to evaluate the release extent based on information provided on the Form C-141 and visual observations. LTE personnel collected three preliminary soil samples (SS01 through SS03) within the release extent from a depth of approximately 0.5 feet bgs to assess for the presence or absence of soil impacts. Soil was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach[®] chloride QuanTab[®] test strips, respectively. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

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

Based on laboratory analytical results for the preliminary soil samples, excavation activities did not appear to be warranted; however, additional assessment activities were scheduled.





Bratcher, M. Page 3

Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2.

On November 6, 2019, and November 14, 2019, LTE personnel returned to the Site to conduct soil assessment activities to further confirm the presence or absence of impacted soil. Boreholes were advanced via hand-auger at four locations (BH01 through BH04) on November 6, 2019. Boreholes BH01 through BH04 were advanced at various depths ranging from 0.5 feet to 2 feet bgs. Additional delineation soil samples were collected from boreholes BH02 and BH04, at a depth of 2 feet bgs (BH02A and BH04A). On November 14, 2019, three potholes were advanced within the release extent using a track-mounted backhoe and soil samples were obtained at depths of 2 feet bgs (PH01 through PH03).

Soil from the boreholes was field screened for volatile aromatic hydrocarbons 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 (Attachment 3). The delineation soil samples were collected, handled, and analyzed as described above at Xenco in Midland, Texas. All boreholes were backfilled with the soil removed. The boreholes and delineation soil sample locations are depicted on Figure 3.

ANALYTICAL RESULTS

Laboratory analytical results indicated benzene, BTEX, GRO and DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in preliminary soil samples SS01 through SS03 collected at approximately 0.5 feet bgs, in delineation borehole soil samples BH01 collected at 1.5 feet bgs, BH02 through BH04 collected at 0.5 feet bgs, BH02A and BH04A collected at 2 feet bgs, and in samples PH01 through PH03 collected at 2 feet bgs. Laboratory analytical results are presented on Figure 2 and summarized in Table 1. The complete laboratory analytical reports are included as Attachment 3.

CONCLUSIONS

Preliminary soil samples SS01 through SS03 and delineation soil samples BH01, BH02/ BH02A, BH03, BH04/BH04A, and PH01 through PH03 were collected from within the release extent from depths ranging from 0.5 feet to 2 feet bgs to assess for the presence or absence of soil impacts as a result of the release on March 7, 2019. Laboratory analytical results for all soil samples indicated benzene, BTEX, GRO and DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, field screening of soil indicated that volatile aromatic hydrocarbons and chloride concentrations were not elevated and soil staining and petroleum hydrocarbon odors were not identified within the release extent.





Bratcher, M. Page 4

Based on initial response efforts, absence of elevated field screening results, and soil sample laboratory analytical results compliant with the Closure Criteria, no impacted soil was identified and no soil excavation was required as a result of the crude oil release. XTO requests NFA for RP Number 2RP-5300. An updated Form C-141 is included as Attachment 1.

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

Ushley L. ager

Ashley L. Ager, P.G.

Senior Geologist

Sincerely,

LT ENVIRONMENTAL, INC.

DI

Christa-Marie Leibli, P.G. Senior Hydrogeologist

cc: Kyle Littrell, XTO Ryan Mann, State Land Office Robert Hamlet, NMOCD Victoria Venegas, NMOCD

Attachments:

- Figure 1 Site Location Map
- Figure 2 Soil Sample Locations

Table 1Soil Analytical Results

Attachment 1 Initial/Final NMOCD Form C-141 (2RP-5300)

Attachment 2 Photographic Log

Attachment 3 Lithologic/Soil Sampling Logs

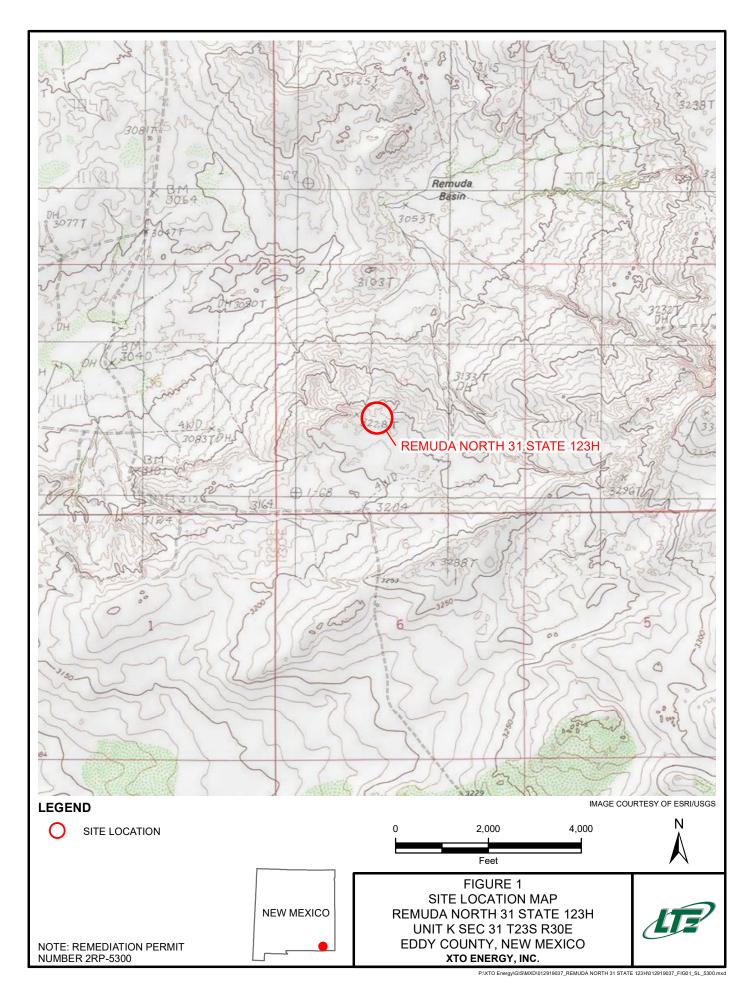
Attachment 3 Laboratory Analytical Reports

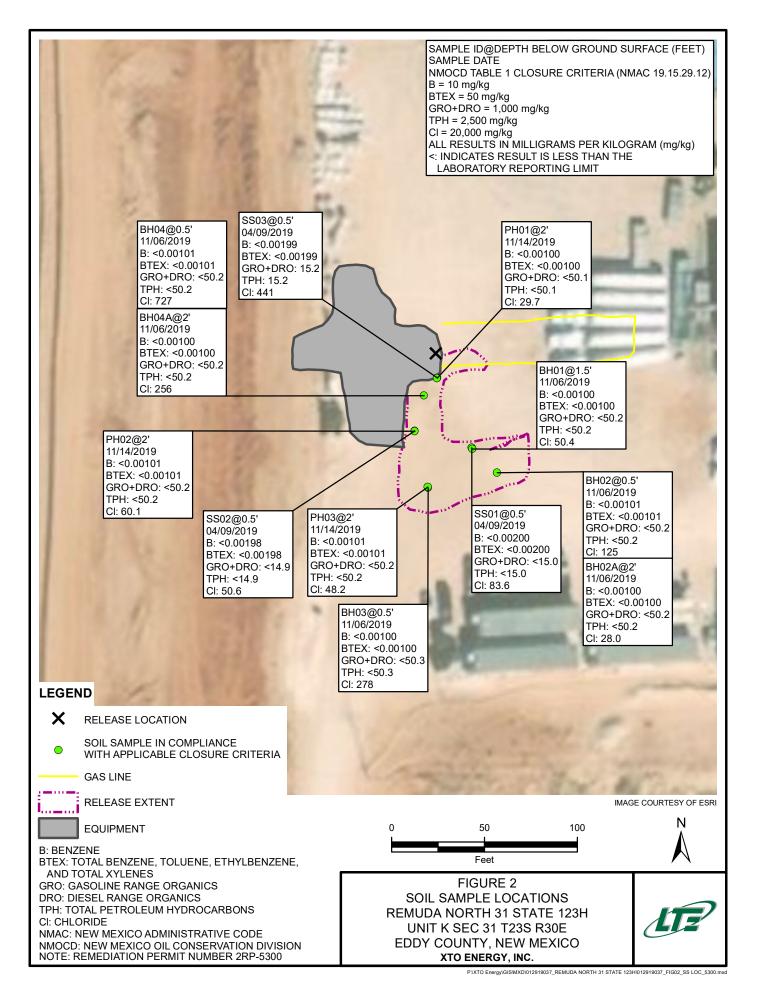


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FIGURES

LT Z





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TABLES

LT Z

TABLE 1 SOIL ANALYTICAL RESULTS

REMUDA NORTH 31 STATE 123H REMEDIATION PERMIT NUMBER 2RP-5300 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)
SS01	0.5	04/09/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	83.6
SS02	0.5	04/09/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<14.9	<14.9	<14.9	<14.9	<14.9	50.6
SS03	0.5	04/09/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	15.2	<15.0	15.2	15.2	441
BH01	1.5	11/06/2019	< 0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	50.4
BH02	0.5	11/06/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	125
BH02A	2.0	11/06/2019	< 0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	28.0
BH03	0.5	11/06/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	278
BH04	0.5	11/06/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	727
BH04A	2.0	11/06/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	256
PH01	2.0	11/14/2019	< 0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	29.7
PH02	2.0	11/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	60.1
PH03	2.0	11/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	48.2
NMOCD Table	e 1 Closure Crit	eria	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 TPH - total petroleum hydrocarbons

ORO - motor oil range organics

< - indicates result is below laboratory reporting limits

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



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

State of New Mexico Energy Minerals and Natural Resources Department

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

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Incident ID	NAB1907758382
District RP	2 2RP-5300
Facility ID	
Application ID	pAB1907758096

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # (assigned by OCD) NAB1907758382
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude _________32.25946

Longitude	-103.92230
(NAD 83 in decimal degrees to 5 decima	al places)

-103.92250

Site Name Remuda North 31 State 123H	Site Type Production Well Facility
Date Release Discovered 2/21/2019	API# (if applicable) 30-015-44414

Unit Letter	Section	Township	Range	County
K	31	238	30E	Eddy

Surface Owner: X State Federal Tribal Private (Name: ______ New Mexico

Nature and Volume of Release

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

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

Cause of Release

While filling frac tanks, a hose fell out of the top of the tank and released fluid to the well pad. A vacuum truck recovered free standing fluid. An environmental contractor will be retained to assist with remediation efforts when frac/completion activities are concluded.

Form C-141	State of New Mexico	Incident ID	NAB1907758382		
Page 2	Oil Conservation Division	District RP	2 2RP-5300		
		Facility ID			
		Application ID	pAB1907758096		

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

Initial Response

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

The source of the release has been stopped.

It impacted area has been secured to protect human health and the environment.

Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have <u>not</u> been undertaken, explain why: N/A

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Kyle Littrell	Title:
Signature: Control State	Date: <u>3/7/2019</u> Telephone: <u>432-221-7331</u>
	Telephone
OCD Only	
Received by:	Date: 3/18/2019

Form C-141 Page 3

State of New Mexico **Oil Conservation Division**

Incident ID	NAB1907758382
District RP	2RP-5300
Facility ID	
Application ID	pAB1907758096

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 vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

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

Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.

- Field data
- \boxtimes Data table of soil contaminant concentration data
- \square Depth to water determination
- Determination of water sources and significant watercourses within ¹/₂-mile of the lateral extents of the release
- \boxtimes Boring or excavation logs
- \square Photographs including date and GIS information
- \boxtimes 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.

ceived by OCD: 12/16/2	019 3:54:58 PM			Page 19 of 1
Form C-141	State of New Mexic	0	Incident ID	NAB1907758382
Page 4	Oil Conservation Divis	sion	District RP	2RP-5300
			Facility ID	
			Application ID	pAB1907758096
public health or the envir failed to adequately inve addition, OCD acceptance and/or regulations. Printed Name: Signature:	2 S. to	by the OCD does not relie e a threat to groundwater ator of responsibility for Title:SI Date:12/	eve the operator of liability sh r, surface water, human health	nould their operations have n or the environment. In ederal, state, or local laws
OCD Only Received by:		Date: _		

Form C-141 Page 6 State of New Mexico Oil Conservation Division

Incident ID	NAB1907758382
District RP	2RP-5300
Facility ID	
Application ID	pAB1907758096

Closure

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

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

A scaled site and sampling diagram as described in 19.15.29.11 NMAC

Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

Description of remediation activities

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

Printed Name: Kyle Littrell	Title:	le:SH&E Supervisor
Printed Name: Kyle Littrell Signature: Signature:	Date:	12/16/2019
email:Kyle_Littrell@xtoenergy.com	Telephon	one:432-221-7331
OCD Only		
Received by:	_ D	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, hum	man health, or the environment nor does not relieve the responsible
Closure Approved by:		Date:
Printed Name:		Title:

•

ATTACHMENT 2: PHOTOGRAPHIC LOG

Remuda North 31 State 123H Eddy County, New Mexico Project Number 2RP-5300



Photo 1 Northeast facing view of sample locations



Photo 2 North facing view of sample locations

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u	LT2 Environmenta 251			500 Carls Complia	3 West bad, Ne nce · Er	nmental Stevens w Mexico gineering SAMPL	Street o 88220 · Remedia		Identifier: BHO Project Name: Lemu da 31 123 Logged By: E	North	^{RP N} 2 R	: 11/6/19 1umber: .P-5300 d:Hand Aye-		
Ī	.at/Long:	L		JUGIC		Field Screen		/U		Hole Diameter:		Total I		1
Comments:														1
	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		e.	Lithology/H	Remarks		
U.S.			0.3	N					orang	e lbrown	caliche	, trau	s:/+	
						16 18 20 12								

LT Enviro	g:	LITHO	5 Cari Compli	08 Wes Isbad, N iance · E / SOII	ronmenta t Stevens lew Mexic ingineering L SAMPI Field Scree	Street co 88220 · Remedi LING LO	ation		Identifier: B(-10) Project Name: Lemv da / 31 123 Logged By: 5 Hole Diameter:	Vorth M	Date: It 1-6 (19 RP Number: ZLP -5 360 Method: Mand Auger Total Depth:	
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #		Depth Sample 2007 ft. bgs.) Depth Depth Sample 2007 Depth Sample 2			Lithology/Remarks			
725 D	>112 >112	0.0	N		-	0.5¥	S S	Ьлим	, coliche	, trace &	r://	

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	Lat/Long Comment		LITHO	Comp	liance · E	ironment st Stevens New Mexi Engineering L SAMP		Identifier: BH03 Project Name: Rewida N 31 123H Logged By: Ellie Hole Diameter:	ronth 1	Date: 11/6/19 RP Number: 2 RP - 530 Method: Hand / Total Depth:			
	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Soil/Rock Type				
juto5	Ď	330	0.2	N		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.5	5	brown	, aliche, ,	trace s:1	ţ	

	LI LI Environment ZE	Carta		Ear Car Compl	508 Wes Isbad, N liance · E	ronmenta t Stevens lew Mexic ingineering	Street co 88220 1 · Remedi	Identifier: BiHOH Project Name: Remuda Nr+th 31 123H RP Number: 2RP-5300	
	Lat/Long:		LITHO	LUGIC		L SAMPI Field Scree		JG	Logged By: Ell't Method: Hand Augur Hole Diameter: Total Depth:
	Comment	s:							
	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
455	D	799	0.2	N		1	0.58	5	brown/gray caliche trace selt
Eno.	Ŋ	421	0,1	Ν		2	287	5	
						3	-		
						4	-		
						6	-		
						-	-		
						8	-		
						10	-		
						12	-		
						-			
						14			
						16			
						18			
						20			
						12	-		

	Lat/Long: Comment	1	LITHOI	5(Carl Compli)8 Wesi sbad, N ance · E / SOII	onmenta t Stevens lew Mexic ngineering SAMPI Field Scree	Street o 88220 · Remedia LING LC	ation		Identifier: Project Name: KerWCda Mord 31 - 123H Logged By: Will Hole Diameter:		Date: N/14/19 RP Number: 2RP ~5300 Method: Total Depth:	
	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lith	nology/Rem	narks	
4720	D	55		N S	Sa	1			Şine-	med sund, c	clay, c	c, LP, Rd/Br, Ps	

	Li Exvironm 25 Lat/Long: Comment		LITHO	5 Car Compl	08 Wes Isbad, N iance · E	ronmenta t Stevens lew Mexic ingineering L SAMPI Field Scree	Street co 88220 · Remedi LING LC	ation		Identifier: PH 02 Project Name: Newwoh North 31 123 H Logged By: W (11 Hole Diameter:	Date: 11/14/19 RP Number: 2RP - 5300 Method: Total Depth:		
	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Litholog	y/Remarks		
HASE	00 W	יס אנא		ک Sta	San	(ft. bgs.) 1 2 - 3 - - 3 - - - - - - - - - - - - -	Depth 284		fire-	fire-med sand, clay, c, lP, dry, RUBr, PS			
						20	+ + + +						

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	Lat/Long: Comment	5	LITHO	5 Carl Compli	08 Wes Isbad, N ance · E / SOII	ronmenta t Stevens lew Mexic ingineering L SAMPI Field Scree	Street co 88220 · Remedi LING LO	iation		Identifier: PH 03 Project Name: Pe mU da No- 31 123 H Logged By: W'f11 Hole Diameter:	ίh	Date: 11/14/9 RP Number: 2RP - 5300 Method: Total Depth:
	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth Sample (ft. bgs.) Depth Depth Compared to the second				ogy/Rem	arks	
HUS	D		G. 2	N		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			Fire- Ps	med sand, cl	lay, <	., LP. dry, Kd/Br

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Analytical Report 620940

for LT Environmental, Inc.

Project Manager: Adrian Baker

Remunda North 31 State 123H

15-APR-19

Collected By: Client





1211 W. Florida Ave Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429), North Carolina (483) Xenco-Lakeland: Florida (E84098)





15-APR-19

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

Reference: XENCO Report No(s): 620940 Remunda North 31 State 123H Project Address: ---

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620940. 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. 620940 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,

 Kalei Stout

 Midland Laboratory Director

 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 620940

LT Environmental, Inc., Arvada, CO

Remunda North 31 State 123H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	04-09-19 10:00	0.5	620940-001
SS02	S	04-09-19 10:15	0.5	620940-002
SS03	S	04-09-19 10:35	0.5	620940-003

.



CASE NARRATIVE

Client Name: LT Environmental, Inc. Project Name: Remunda North 31 State 123H

Project ID: ---Work Order Number(s): 620940 Report Date:15-APR-19Date Received:04/12/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3085717 BTEX by EPA 8021B Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis. Samples affected are: 620940-002. Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Contact: Adrian Baker

Project Location:

Certificate of Analysis Summary 620940

LT Environmental, Inc., Arvada, CO Project Name: Remunda North 31 State 123H



Date Received in Lab:Fri Apr-12-19 10:52 amReport Date:15-APR-19Project Manager:Kalei Stout

Analysis Requested	Lab Id:	620940-001		620940-002		620940-003			
	Field Id:	SS01		SS02		SS03			
	Depth:	0.5-		0.5-		0.5-			
Matrix:		SOIL		SOIL		SOIL			
	Sampled:	Apr-09-19 10:00		Apr-09-19	10:15	Apr-09-19	10:35		
BTEX by EPA 8021B	Extracted:	Apr-14-19 16:07		Apr-14-19 16:07		Apr-14-19 16:07			
	Analyzed:	Apr-15-19 (00:42	Apr-15-19	01:00	Apr-15-19	01:20		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199		
Toluene		< 0.00200	0.00200	< 0.00198	0.00198		0.00199		
Ethylbenzene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199		
m,p-Xylenes		< 0.00399	0.00399	< 0.00397	0.00397		0.00398		
o-Xylene		< 0.00200	0.00200	< 0.00198	0.00198		0.00199		
Total Xylenes		< 0.00200	0.00200	< 0.00198	0.00198		0.00199		
Total BTEX		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00199	0.00199		
Chloride by EPA 300	Extracted:	Apr-12-19 17:00		Apr-12-19 17:00		Apr-12-19 17:00			
	Analyzed:	Apr-14-19 18:39		Apr-14-19 18:46		Apr-14-19 18:54			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		83.6	4.97	50.6	50.1	441	25.2		
TPH by SW8015 Mod	Extracted:	Apr-13-19 09:00		Apr-13-19 09:00		Apr-13-19 09:00			
	Analyzed:	Apr-13-19 17:41		Apr-13-19 18:00		Apr-13-19 18:20			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0		
Diesel Range Organics (DRO) <15.0 15.0		<14.9	14.9	15.2	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0		
Total TPH		<15.0	15.0	<14.9	14.9	15.2	15.0		
Total GRO-DRO		<15.0	15.0	<14.9	14.9	15.2	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

alu

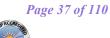
Final 1.000

Kalei Stout Midland Laboratory Director

Page 36 of 110



Certificate of Analytical Results 620940



LT Environmental, Inc., Arvada, CO

Remunda North 31 State 123H

Sample Id: SS01 Lab Sample Id: 620940-001		Matrix: Date Collec	Soil ted: 04.09.19 10.00		Date Received:04. Sample Depth: 0.5	12.19 10.5	2
Analytical Method:Chloride byTech:CHEAnalyst:CHESeq Number:3085667	EPA 300	Date Prep:	04.12.19 17.00		Prep Method: E30 % Moisture: Basis: We	00P t Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	83.6	4.97	mg/kg	04.14.19 18.39		1

Analytical Method: TPH by SW801	5 Mod				F	Prep Method: TX	1005P	
Tech: ARM					9	6 Moisture:		
Analyst: ARM		Date Pre	p: 04.13.	19 09.00	E	Basis: We	t Weight	
Seq Number: 3085698								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.13.19 17.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.13.19 17.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.13.19 17.41	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.13.19 17.41	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	04.13.19 17.41	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	100	%	70-135	04.13.19 17.41		
o-Terphenyl		84-15-1	99	%	70-135	04.13.19 17.41		



Certificate of Analytical Results 620940



LT Environmental, Inc., Arvada, CO

Remunda North 31 State 123H

Sample Id:SS01Lab Sample Id:620940-001		Matrix: Date Collecte	Soil ed: 04.09.19 10.00		Date Received:04.12.19 10.52 Sample Depth: 0.5		
Analytical Method: BTEX by EPA 80 Tech: SCM	21B			Prep M % Moi	ethod: SW5030B sture:		
Analyst: SCM Seq Number: 3085717		Date Prep:	04.14.19 16.07	Basis:	Wet Weight		
Parameter	Cas Number	Result H	яL	Units Ana	lysis Date Flag	Dil	

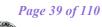
Cas Number	Kesuit	KL		Units	Analysis Date	Flag	Dil
71-43-2	< 0.00200	0.00200		mg/kg	04.15.19 00.42	U	1
108-88-3	< 0.00200	0.00200		mg/kg	04.15.19 00.42	U	1
100-41-4	< 0.00200	0.00200		mg/kg	04.15.19 00.42	U	1
179601-23-1	< 0.00399	0.00399		mg/kg	04.15.19 00.42	U	1
95-47-6	< 0.00200	0.00200		mg/kg	04.15.19 00.42	U	1
1330-20-7	< 0.00200	0.00200		mg/kg	04.15.19 00.42	U	1
	< 0.00200	0.00200		mg/kg	04.15.19 00.42	U	1
	Cag Number	%	Tin:ta	T insite	Analysia Data	Flog	
	Cas Number	Recovery	Units	Limits	Analysis Date	riag	
	460-00-4	123	%	70-130	04.15.19 00.42		
	540-36-3	102	%	70-130	04.15.19 00.42		
	71-43-2 108-88-3 100-41-4 179601-23-1 95-47-6	71-43-2 <0.00200	71-43-2 <0.00200	71-43-2 <0.00200	71-43-2 <0.00200 0.00200 mg/kg 108-88-3 <0.00200	71-43-2 <0.00200	71-43-2 <0.00200

1-Chlorooctane

o-Terphenyl



Certificate of Analytical Results 620940



LT Environmental, Inc., Arvada, CO Remunda North 31 State 123H

Sample Id: Lab Sample I	SS02 d: 620940-002		Matrix: Date Collec	Soil cted: 04.09.19 10.15		Date Received:04 Sample Depth: 0.		2
2	ethod: Chloride by EPA	300				Prep Method: E	300P	
Tech:	CHE					% Moisture:		
Analyst:	CHE		Date Prep:	04.12.19 17.00		Basis: W	et Weight	
Seq Number:	3085667							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	50.6	50.1	mg/kg	04.14.19 18.46		10

Analytical Method: TPH by SW801	5 Mod				P	rep Method: TX	K1005P	
Tech: ARM					%	6 Moisture:		
Analyst: ARM		Date Pre	p: 04.13.	19 09.00	E	Basis: We	et Weight	
Seq Number: 3085698								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	04.13.19 18.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9		mg/kg	04.13.19 18.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	04.13.19 18.00	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	04.13.19 18.00	U	1
Total GRO-DRO	PHC628	<14.9	14.9		mg/kg	04.13.19 18.00	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

100

99

%

%

70-135

70-135

04.13.19 18.00

04.13.19 18.00

111-85-3

84-15-1



Certificate of Analytical Results 620940



LT Environmental, Inc., Arvada, CO

Remunda North 31 State 123H

Sample Id: SS Lab Sample Id: 62			Matrix: Date Collecte	Soil ed: 04.09.19 10.15		Date Received Sample Depth		2.19 10.52	
•	: BTEX by EPA 80211	В				Prep Method:	SW5	030B	
Tech: SC	M					% Moisture:			
Analyst: SC	М		Date Prep:	04.14.19 16.07		Basis:	Wet Y	Weight	
Seq Number: 308	35717								
Parameter	(Cas Number	Result F	8L	Units	Analysis Da	ate	Flag	Dil

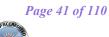
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	04.15.19 01.00	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	04.15.19 01.00	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	04.15.19 01.00	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	04.15.19 01.00	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	04.15.19 01.00	U	1
Total Xylenes	1330-20-7	< 0.00198	0.00198		mg/kg	04.15.19 01.00	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	04.15.19 01.00	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	100	%	70-130	04.15.19 01.00		
4-Bromofluorobenzene		460-00-4	131	%	70-130	04.15.19 01.00	**	



o-Terphenyl



Certificate of Analytical Results 620940



LT Environmental, Inc., Arvada, CO

Remunda North 31 State 123H

Sample Id: Lab Sample Id	SS03 d: 620940-003		Matrix: Date Colle	Soil cted: 04.09.19 10.35		Date Received:04 Sample Depth: 0.5		2
Analytical Me Tech:	ethod: Chloride by EPA CHE	300				Prep Method: E3 % Moisture:	00P	
Analyst:	CHE		Date Prep:	04.12.19 17.00			et Weight	
Seq Number:	3085667							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	441	25.2	mg/kg	04.14.19 18.54		5

Analytical Method: TPH by SW80	15 Mod				Р	Prep Method: TX	1005P	
Tech: ARM					%	6 Moisture:		
Analyst: ARM		Date Prep	: 04.13.	19 09.00	E	Basis: We	t Weight	
Seq Number: 3085698								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.13.19 18.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.2	15.0		mg/kg	04.13.19 18.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.13.19 18.20	U	1
Total TPH	PHC635	15.2	15.0		mg/kg	04.13.19 18.20		1
Total GRO-DRO	PHC628	15.2	15.0		mg/kg	04.13.19 18.20		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	96	%	70-135	04.13.19 18.20		

93

%

70-135

84-15-1

04.13.19 18.20



Certificate of Analytical Results 620940



LT Environmental, Inc., Arvada, CO

Remunda North 31 State 123H

Sample Id: Lab Sample Id	SS03 l: 620940-003		Matrix: Date Collec	Soil cted: 04.09.19 10.35		Date Received: Sample Depth:		2
Analytical Me	thod: BTEX by EPA 80)21B				Prep Method:	SW5030B	
Tech:	SCM					% Moisture:		
Analyst:	SCM		Date Prep:	04.14.19 16.07		Basis:	Wet Weight	
Seq Number:	3085717							
Parameter		Cas Number	Result	RL	Units	Analysis Dat	te Flag	Dil
Benzene		71-43-2	< 0.00199	0.00199	mg/kg	04.15.19 01.2	20 U	1

Benzene	71-43-2	< 0.00199	0.00199		mg/kg	04.15.19 01.20	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	04.15.19 01.20	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	04.15.19 01.20	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	04.15.19 01.20	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	04.15.19 01.20	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	04.15.19 01.20	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	04.15.19 01.20	U	1
			%					
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	130	%	70-130	04.15.19 01.20		
1,4-Difluorobenzene		540-36-3	99	%	70-130	04.15.19 01.20		



Flagging Criteria



- Page 43 of 110
- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.
- **BRL** Below Reporting Limit.
- RL Reporting Limit
- MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- **DL** Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labo	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remunda North 31 State 123H

Analytical Method	Chloride by EPA 30	00						Pro	ep Metho	d: E30	0P	
Seq Number:	3085667			Matrix:	Solid				Date Prep	p: 04.1	2.19	
MB Sample Id: 7675689-1-BLK			LCS Sar	nple Id:	7675689-	1-BKS		LCSI	Sample	Id: 767	5689-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD I	RPD Limit	Units	Analysis Date	Flag
Chloride	< 0.858	250	259	104	264	106	90-110	2	20	mg/kg	04.14.19 17:56	

Analytical Method:	Analytical Method: Chloride by EPA 300							Pr	ep Metho	d: E30	0P	
Seq Number:	3085667			Matrix:	Soil				Date Pre	ep: 04.1	2.19	
Parent Sample Id:	620943-004		MS Sar	nple Id:	620943-00	04 S		MSI	O Sample	Id: 620	943-004 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag

Analytical Method:	Chloride by EPA 30	00						Pr	ep Metho	d: E30	OP	
Seq Number:	3085667			Matrix:	Soil				Date Pre	ep: 04.1	2.19	
Parent Sample Id:	Parent Sample Id: 620944-002			nple Id:	620944-00	02 S		MSI	D Sample	Id: 6209	944-002 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag
Chloride	3.18	252	282	111	250	98	90-110	12	20	mg/kg	04.14.19 18:18	Х

Analytical Method: Seq Number: MB Sample Id:	MB Sample Id: 7675750-1-BLK Parameter MB Spi				Matrix: nple Id:	Solid 7675750-	1-BKS			Prep Method Date Prep SD Sample 1	p: 04.1	1005P 13.19 5750-1-BSD	
Parameter			Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarl	bons (GRO)	<8.00	1000	928	93	966	97	70-135	4	20	mg/kg	04.13.19 10:34	
Diesel Range Organics	(DRO)	<8.13	1000	965	97	987	99	70-135	2	20	mg/kg	04.13.19 10:34	
Surrogate		MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Re		-	limits	Units	Analysis Date	
1-Chlorooctane		106		1	23		124		7	0-135	%	04.13.19 10:34	
o-Terphenyl		107		1	20		119		7	0-135	%	04.13.19 10:34	

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



LT Environmental, Inc.

Remunda North 31 State 123H

Seq Number: 3085698	Parent Sample Id: 620782-001 Parameter Parent S)1 S			ep Methoo Date Prep Sample 1	p: 04.1	.005P 3.19 782-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD]	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	1010	101	1040	104	70-135	3	20	mg/kg	04.13.19 11:32	
Diesel Range Organics (DRO)	124	999	1220	110	1240	112	70-135	2	20	mg/kg	04.13.19 11:32	
Surrogate				1S Rec	MS Flag	MSD %Rec			mits	Units	Analysis Date	
1-Chlorooctane			1	24		128		70-	-135	%	04.13.19 11:32	
o-Terphenyl			1	16		119		70	-135	%	04.13.19 11:32	

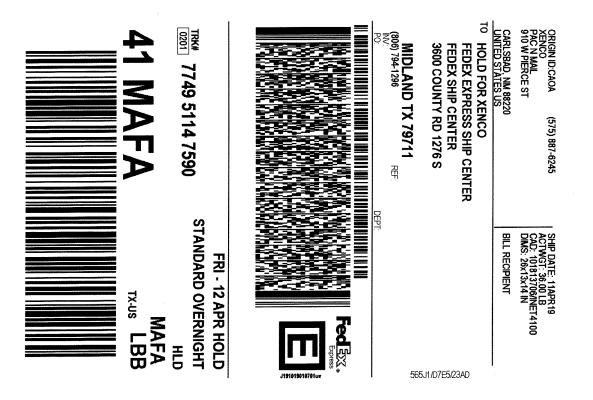
Analytical Method: Seq Number: MB Sample Id:	Seq Number: 3085717 MB Sample Id: 7675773-1-BLK Derameter MB Spik				Solid 7675773-	1-BKS			Prep Metho Date Pre SD Sample	p: 04.1	5030B 4.19 5773-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI) RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00198	0.0992	0.100	101	0.0939	94	70-130	6	35	mg/kg	04.14.19 18:06	
Toluene	< 0.00198	0.0992	0.0996	100	0.0951	95	70-130	5	35	mg/kg	04.14.19 18:06	
Ethylbenzene	< 0.00198	0.0992	0.105	106	0.0997	100	70-130	5	35	mg/kg	04.14.19 18:06	
m,p-Xylenes	< 0.00101	0.198	0.210	106	0.201	101	70-130	4	35	mg/kg	04.14.19 18:06	
o-Xylene	< 0.00198	0.0992	0.105	106	0.102	102	70-130	3	35	mg/kg	04.14.19 18:06	
Surrogate	MB %Rec	MB Flag		~~	LCS Flag	LCSI %Re			Limits	Units	Analysis Date	
1,4-Difluorobenzene	104		ç	96		96		,	70-130	%	04.14.19 18:06	
4-Bromofluorobenzene	105		1	06		106			70-130	%	04.14.19 18:06	

Analytical Method: Seq Number: Parent Sample Id:	BTEX by EPA 802 3085717 620919-001	1B	MS San	Matrix: nple Id:	~ ~ ~ ~	01 S			Prep Metho Date Pro SD Sample	ep: 04.1	5030B 4.19 919-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPI) RPD Lim	it Units	Analysis Date	Flag
Benzene	< 0.00199	0.0996	0.0550	55	0.0570	57	70-130	4	35	mg/kg	04.14.19 18:44	Х
Toluene	< 0.00199	0.0996	0.0675	68	0.0710	71	70-130	5	35	mg/kg	04.14.19 18:44	Х
Ethylbenzene	< 0.00199	0.0996	0.0663	67	0.0699	70	70-130	5	35	mg/kg	04.14.19 18:44	Х
m,p-Xylenes	0.00273	0.199	0.141	69	0.149	73	70-130	6	35	mg/kg	04.14.19 18:44	Х
o-Xylene	< 0.00199	0.0996	0.0722	72	0.0772	77	70-130	7	35	mg/kg	04.14.19 18:44	
Surrogate				1S Rec	MS Flag	MSD %Re		-	Limits	Units	Analysis Date	
1,4-Difluorobenzene			8	37		88		~	70-130	%	04.14.19 18:44	
4-Bromofluorobenzene			1	23		128		,	70-130	%	04.14.19 18:44	

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

	2 Jacon 1. 100	Relinquished by: (Signature) Received by:	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 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 \$6 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	Total 200.7 / 6010 200.8 / 6020: 8RCRA Circle Method(s) and Metal(s) to be analyzed TCLP /					1 p1/p0/40 2 028	Date Ix Sampled	-NIA	Z	(Yes) No	Ther	lank: Yes No	Sampler's Name: Robert M.	P.O. Number: 2RP - 5300	Ä	Project Name: Reinu da, North 31 State 1234	Phone: 432.704.5178	City, State ZIP: Midland, TX 79705	Address: 3300 North A Street	Company Name: LT Environmental, Inc., Permian office	Project Manager: Adrian Baker	CAB DR ATORIES Hobbs.M	
	en	(Stignature) Date/Time	s a valid purchase order from client company to Xenco, its affili ume any responsibility for any losses or expenses incurred by tharge of \$5 for each sample submitted to Xenco, but not analyz	SRCRA 13PPM Texas 11 AI Sb As Ba Be B TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd		altream a			\times	Sampled Depth Number TPH (EF BTEX (E	Pr of	015) 8021	ntai	ners	192.00	Due Date: 04/15/19	Rush: Sday	Routine	Turn Around	Email: pmcg fec@Ltenv.com	City, State ZIP: Carlsbed			Bill to: (it different) $\kappa_{ij} = \kappa_{ij} + re$	Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 503-3334 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)	Chain of Custody
	Jup King WW	Relinquished by: (Mgnature)	ates and subcontractors. It assigns standard terms and cond the client if such losses are due to circumstances beyond the ed. These terms will be enforced unless previously negotated	Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Cr Co Cu Pb Mn Mo Ni Se Ag Ti U															ANALYSIS REQUEST	Deliverables: EDD	M/M Reporting:Level II □evel III		nerald Program: UST/PST			
Revised Date OSIA18 Rov. 2018.1	110102	ceived by: (Signature)	Hions control L	K Se Ag SiO2 Na Sr TI Sn U V Zn 1631/245.1/7470 /7471 : Hg					discrete.	Sample Comments	lab, if received by 4:30pm	TAT starts the day received by the							Work Order Notes	ADaPT C Other:			RP prownfields fac perfund	Comments	www.xenco.com Page of	work order No. 040940

Page 46 of 110



After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.

2. Fold the printed page along the horizontal line.

3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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

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



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc. Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 04/12/2019 10:52:00 AM Temperature Measuring device used : R8 Work Order #: 620940 Sample Receipt Checklist Comments #1 *Temperature of cooler(s)? .1

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Britanna Teel

Date: 04/12/2019

Checklist reviewed by: Kalei Stout

Date: 04/12/2019

Analytical Report 642401

for LT Environmental, Inc.

Project Manager: Dan Moir

Remuda North 31 123H

012919037

08-NOV-19

Collected By: Client



1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19) Xenco-Carlsbad (LELAP): Louisiana (05092) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Tampa: Florida (E87429), North Carolina (483)



08-NOV-19

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

Reference: XENCO Report No(s): 642401 Remuda North 31 123H Project Address: Eddy County

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) 642401. 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. 642401 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,

fession Vermer

 Jessica Kramer

 Project Assistant

 Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies.

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Sample Cross Reference 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01A	S	11-06-19 10:30	1.5 ft	642401-001
SS04	S	11-06-19 12:05	0.5 ft	642401-002
SS04A	S	11-06-19 12:40	2.0 ft	642401-003
SS05	S	11-06-19 14:05	0.5 ft	642401-004
SS06	S	11-06-19 14:55	0.5 ft	642401-005
SS06A	S	11-06-19 15:40	2.0 ft	642401-006



CASE NARRATIVE

Client Name: LT Environmental, Inc. Project Name: Remuda North 31 123H

 Project ID:
 012919037

 Work Order Number(s):
 642401

 Report Date:
 08-NOV-19

 Date Received:
 11/07/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106794 Chloride by EPA 300

Lab Sample ID 642404-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642401-001, -002, -003, -004, -005, -006.

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

Batch: LBA-3106830 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3106866 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7689850-1-BKS,642401-001 SD.



Project Id:012919037Contact:Dan MoirProject Location:Eddy County

Certificate of Analysis Summary 642401

LT Environmental, Inc., Arvada, CO Project Name: Remuda North 31 123H

Date Received in Lab:Thu Nov-07-19 08:20 amReport Date:08-NOV-19Project Manager:Jessica Kramer

	Lab Id:	642401-0	001	642401-	002	642401-0	003	642401-	004	642401-	005	642401-	006
Anglusia Doguostad	Field Id:	SS01A	4	SS04		SS04A	4	SS05		SS06		SS064	4
Analysis Requested	Depth:	1.5- ft	t	0.5- f	:	2.0- ft	:	0.5- f	t	0.5- f	t	2.0- f	t
	Matrix:	SOIL		SOIL		SOIL		SOIL	,	SOIL	,	SOIL	
	Sampled:	Nov-06-19	10:30	Nov-06-19	12:05	Nov-06-19	12:40	Nov-06-19	14:05	Nov-06-19	14:55	Nov-06-19	15:40
BTEX by EPA 8021B	Extracted:	Nov-07-19	09:23										
	Analyzed:	Nov-07-19	12:52	Nov-07-19	13:11	Nov-07-19	13:30	Nov-07-19	13:49	Nov-07-19	14:08	Nov-07-19	14:28
	Units/RL:	mg/kg	RL										
Benzene		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
Toluene		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
Ethylbenzene		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
m,p-Xylenes		< 0.00200	0.00200	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00201	0.00201	< 0.00201	0.00201
Xylene (< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
Total Xylenes		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
Total BTEX		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
Chloride by EPA 300	Extracted:	Nov-07-19	10:11										
	Analyzed:	Nov-07-19	11:59	Nov-07-19	12:16	Nov-07-19	12:22	Nov-07-19	12:28	Nov-07-19	12:34	Nov-07-19	12:52
	Units/RL:	mg/kg	RL										
Chloride		50.4	10.0	125	101	28.0	10.0	278	200	727	200	256	49.9
TPH by SW8015 Mod	Extracted:	Nov-07-19	13:00										
	Analyzed:	Nov-07-19	15:24	Nov-07-19	16:23	Nov-07-19	16:42	Nov-07-19	17:02	Nov-07-19	17:22	Nov-07-19	17:41
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<50.2	50.2	<50.2	50.2	<50.2	50.2	<50.3	50.3	<50.2	50.2	<50.2	50.2
Diesel Range Organics (DRO)		<50.2	50.2	<50.2	50.2	<50.2	50.2	<50.3	50.3	<50.2	50.2	<50.2	50.2
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2	<50.2	50.2	<50.2	50.2	<50.3	50.3	<50.2	50.2	<50.2	50.2
Total GRO-DRO		<50.2	50.2	<50.2	50.2	<50.2	50.2	<50.3	50.3	<50.2	50.2	<50.2	50.2
Total TPH		<50.2	50.2	<50.2	50.2	<50.2	50.2	<50.3	50.3	<50.2	50.2	<50.2	50.2

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

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fession kenner

Jessica Kramer Project Assistant

Final 1.000



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: SS01A Lab Sample Id: 642401-001		Matrix: Date Collec	Soil cted: 11.06.19 10.30		Date Received:11. Sample Depth: 1.5		0
Analytical Method: Chloride by EP	A 300				Prep Method: E3	00P	
Tech: MAB					% Moisture:		
Analyst: MAB		Date Prep:	11.07.19 10.11		Basis: We	et Weight	
Seq Number: 3106794							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	50.4	10.0	mg/kg	11.07.19 11.59		1
Analytical Method: TPH by SW801 Tech: DTH Analyst: DTH Seq Number: 3106866	5 Mod	Date Prep:	11.07.19 13.00		Prep Method: SW % Moisture: Basis: We	/8015P et Weight	
Tech: DTH Analyst: DTH	5 Mod Cas Number	Date Prep: Result	11.07.19 13.00 RL		% Moisture:		Dil
Tech:DTHAnalyst:DTHSeq Number:3106866					% Moisture: Basis: We	et Weight	Dil
Tech:DTHAnalyst:DTHSeq Number:3106866	Cas Number	Result	RL	Units	Moisture: Basis: We Analysis Date	et Weight Flag	
Tech:DTHAnalyst:DTHSeq Number:3106866ParameterGasoline Range Hydrocarbons (GRO)	Cas Number PHC610	Result <50.2	RL 50.2	Units mg/kg	Moisture: Basis: We <u>Analysis Date</u> 11.07.19 15.24	et Weight Flag U	1
Tech:DTHAnalyst:DTHSeq Number:3106866ParameterGasoline Range Hydrocarbons (GRO)Diesel Range Organics (DRO)	Cas Number PHC610 C10C28DRO	Result <50.2 <50.2	RL 50.2 50.2	Units mg/kg mg/kg	 Moisture: Basis: We Analysis Date 11.07.19 15.24 11.07.19 15.24 	et Weight Flag U U	1 1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.07.19 15.24	
o-Terphenyl	84-15-1	116	%	70-135	11.07.19 15.24	

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Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: SS01A Lab Sample Id: 642401-001		Matrix: Date Collecte	Soil d: 11.06.19 10.30	Date Recei Sample De	ved:11.07.19 08.20 pth: 1.5 ft	
Analytical Method: BTEX by EPA Tech: MAB	8021B			Prep Metho % Moisture	od: SW5030B e:	
Analyst: MAB		Date Prep:	11.07.19 09.23	Basis:	Wet Weight	
Seq Number: 3106830						
Danamatan	Cos Number	Docult D	т	TT	- D-4- Fl	D !!

Parameter	Cas Number	· Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
m,p-Xylenes	179601-23-1	< 0.00200	0.00200		mg/kg	11.07.19 12.52	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	101	%	70-130	11.07.19 12.52		
4-Bromofluorobenzene		460-00-4	105	%	70-130	11.07.19 12.52		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: Lab Sample Id	SS04 d: 642401-002		Matrix: Date Collect	Soil ed: 11.06.19 12.05		Date Received Sample Depth	1:11.07.19 08.2 1:0.5 ft	0
Analytical Me Tech: Analyst: Seq Number:	ethod: Chloride by EPA MAB MAB 3106794	300	Date Prep:	11.07.19 10.11		Prep Method: % Moisture: Basis:	E300P Wet Weight	
Parameter		Cas Number	Result	RL	Units	Analysis D	ate Flag	Dil
Chloride		16887-00-6	125	101	mg/kg	11.07.19 12	.16	10
Analytical Me Tech:	ethod: TPH by SW8015 DTH	Mod				Prep Method: % Moisture:	SW8015P	
Analyst:	DTH		Date Prep:	11.07.19 13.00		Basis:	Wet Weight	

Seq Number: 3106866

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2		mg/kg	11.07.19 16.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2		mg/kg	11.07.19 16.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2		mg/kg	11.07.19 16.23	U	1
Total GRO-DRO	PHC628	<50.2	50.2		mg/kg	11.07.19 16.23	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	11.07.19 16.23	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	109	%	70-135	11.07.19 16.23		
o-Terphenyl		84-15-1	115	%	70-135	11.07.19 16.23		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: SS04 Lab Sample Id: 642401-002		Matrix: Date Collecte	Soil d: 11.06.19 12.05		ceived:11.07.19 08.2 Depth:0.5 ft	20
Analytical Method: BTEX by EPA Tech: MAB	8021B			Prep Me % Mois	ethod: SW5030B ture:	
Analyst: MAB Seq Number: 3106830		Date Prep:	11.07.19 09.23	Basis:	Wet Weight	
Parameter	Cas Number	Result F	SL.	Units Anal	vsis Date Flag	Dil

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
Toluene	108-88-3	< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
Ethylbenzene	100-41-4	< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
m,p-Xylenes	179601-23-1	< 0.00202	0.00202		mg/kg	11.07.19 13.11	U	1
o-Xylene	95-47-6	< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
Total Xylenes	1330-20-7	< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
Total BTEX		< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	118	%	70-130	11.07.19 13.11		
1,4-Difluorobenzene		540-36-3	106	%	70-130	11.07.19 13.11		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: SS04A Lab Sample Id: 642401-003		Matrix: Date Collec	Soil cted: 11.06.19 12.40		Date Received:11. Sample Depth: 2.0		0
Analytical Method: Chloride by EF	PA 300				Prep Method: E30	00P	
Tech: MAB					% Moisture:		
Analyst: MAB		Date Prep:	11.07.19 10.11		Basis: We	t Weight	
Seq Number: 3106794		1					
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.0	10.0	mg/kg	11.07.19 12.22		1
Analytical Method: TPH by SW80 Tech: DTH	15 Mod				Prep Method: SW % Moisture:		
Analyst: DTH		Date Prep:	11.07.19 13.00		Basis: We	t Weight	
Seq Number: 3106866							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.07.19 16.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.07.19 16.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.07.19 16.42	U	1

							-	-
Total GRO-DRO	PHC628	<50.2	50.2		mg/kg	11.07.19 16.42	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	11.07.19 16.42	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	110	%	70-135	11.07.19 16.42		
o-Terphenyl		84-15-1	116	%	70-135	11.07.19 16.42		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id:SS04ALab Sample Id:642401-003	Matrix: Soil Date Collected: 11.06.19 12.40	Date Received:11.07.19 08.20 Sample Depth: 2.0 ft
Analytical Method: BTEX by EPA 8021B Tech: MAB		Prep Method: SW5030B % Moisture:
Analyst: MAB Seq Number: 3106830	Date Prep: 11.07.19 09.23	Basis: Wet Weight

Parameter	Cas Number	· Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
m,p-Xylenes	179601-23-1	< 0.00200	0.00200		mg/kg	11.07.19 13.30	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	106	%	70-130	11.07.19 13.30		
4-Bromofluorobenzene		460-00-4	116	%	70-130	11.07.19 13.30		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: S805 Lab Sample Id: 642401-004	······································				3.20	
Analytical Method: Chloride b	by EPA 300				Prep Method: E300P	
Tech: MAB					% Moisture:	
Analyst: MAB		Date Prep:	11.07.19 10.11		Basis: Wet Weigh	t
Seq Number: 3106794						
Parameter	Cas Number	Result	RL	Units	Analysis Date Flag	Dil
Chloride	16887-00-6	278	200	mg/kg	11.07.19 12.28	20
Analytical Method: TPH by S	W8015 Mod				Prep Method: SW8015P	
Analytical vietnoo: TPH by 5						

Tech: DTH						%	Moisture:		
Analyst: DTH			Date Prep	b: 11.07	.19 13.00	В	asis: W	et Weight	
Seq Number: 3106866									
Parameter	Cas	Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbon	ns (GRO) PHC6	10	<50.3	50.3		mg/kg	11.07.19 17.02	U	1
Diesel Range Organics (DRO	C10C2	28DRO	<50.3	50.3		mg/kg	11.07.19 17.02	U	1
Motor Oil Range Hydrocarbons	(MRO) PHCG	2835	<50.3	50.3		mg/kg	11.07.19 17.02	U	1
Total GRO-DRO	PHC62	28	<50.3	50.3		mg/kg	11.07.19 17.02	U	1
Total TPH	PHC63	35	<50.3	50.3		mg/kg	11.07.19 17.02	U	1
Surrogate		Ca	as Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111	-85-3	106	%	70-135	11.07.19 17.02		
o-Terphenyl		84-1	15-1	112	%	70-135	11.07.19 17.02		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: SS05 Lab Sample Id: 642401-004	Matrix: Soil Date Collected: 11.06.19 14.05	Date Received:11.07.19 08.20 Sample Depth: 0.5 ft
Analytical Method: BTEX by EPA 8 Tech: MAB	3021B	Prep Method: SW5030B % Moisture:
Analyst: MAB Seq Number: 3106830	Date Prep: 11.07.19 09.23	Basis: Wet Weight
	G N L Breck BY	

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
m,p-Xylenes	179601-23-1	< 0.00201	0.00201		mg/kg	11.07.19 13.49	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	117	%	70-130	11.07.19 13.49		
1,4-Difluorobenzene		540-36-3	106	%	70-130	11.07.19 13.49		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: Lab Sample Id	SS06 1: 642401-005		Matrix: Date Collec	Soil ted: 11.06.19 14.55		Date Received:1 Sample Depth: 0.		
Analytical Me Tech: Analyst: Seq Number:	ethod: Chloride by EPA MAB MAB 3106794	300	Date Prep:	11.07.19 10.11		Prep Method: E % Moisture: Basis: W	300P /et Weight	
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	727	200	mg/kg	11.07.19 12.34		20
Analytical Me Tech: Analyst: Seq Number:	ethod: TPH by SW8015 DTH DTH 3106866	Mod	Date Prep:	11.07.19 13.00		Prep Method: S % Moisture: Basis: W	W8015P /et Weight	

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2		mg/kg	11.07.19 17.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2		mg/kg	11.07.19 17.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2		mg/kg	11.07.19 17.22	U	1
Total GRO-DRO	PHC628	<50.2	50.2		mg/kg	11.07.19 17.22	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	11.07.19 17.22	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	103	%	70-135	11.07.19 17.22		
o-Terphenyl		84-15-1	109	%	70-135	11.07.19 17.22		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: SS06 Lab Sample Id: 642401-005		Matrix: Date Collecte	Soil ed: 11.06.19 14.55		ate Received:1 ample Depth:0		0
Analytical Method: BTEX by EPA Tech: MAB	8021B				ep Method: S Moisture:	W5030B	
Analyst: MAB		Date Prep:	11.07.19 09.23			Vet Weight	
Seq Number: 3106830	Cas Number	Result I	21.	Unite	Analysis Data	Flag	ы

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
Toluene	108-88-3	< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
Ethylbenzene	100-41-4	< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
m,p-Xylenes	179601-23-1	< 0.00201	0.00201		mg/kg	11.07.19 14.08	U	1
o-Xylene	95-47-6	< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
Total Xylenes	1330-20-7	< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
Total BTEX		< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	112	%	70-130	11.07.19 14.08		
1,4-Difluorobenzene		540-36-3	105	%	70-130	11.07.19 14.08		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: SS06A Lab Sample Id: 642401-006		Matrix: Date Collec	Soil cted: 11.06.19 15.40		Date Received:11. Sample Depth: 2.0		0
Analytical Method: Chloride by EP	A 300				Prep Method: E30	00P	
Tech: MAB					% Moisture:		
Analyst: MAB		Date Prep:	11.07.19 10.11		Basis: We	t Weight	
Seq Number: 3106794							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	256	49.9	mg/kg	11.07.19 12.52		5
Analytical Method: TPH by SW801 Tech: DTH Analyst: DTH Seq Number: 3106866	5 Mod	Date Prep:	11.07.19 13.00		Prep Method: SW % Moisture: Basis: We	78015P t Weight	
Tech: DTH Analyst: DTH	5 Mod Cas Number	Date Prep: Result	11.07.19 13.00 RL		% Moisture:		Dil
Tech: DTH Analyst: DTH Seq Number: 3106866		-			% Moisture: Basis: We	t Weight	Dil
Tech: DTH Analyst: DTH Seq Number: 3106866 Parameter	Cas Number	Result	RL	Units	Moisture: Basis: We Analysis Date	t Weight Flag	
Tech: DTH Analyst: DTH Seq Number: 3106866 Parameter Gasoline Range Hydrocarbons (GRO)	Cas Number PHC610	Result <50.2	RL 50.2	Units mg/kg	Moisture: Basis: We <u>Analysis Date</u> 11.07.19 17.41	t Weight Flag U	1
Tech: DTH Analyst: DTH Seq Number: 3106866 Parameter Gasoline Range Hydrocarbons (GRO) Diesel Range Organics (DRO)	Cas Number PHC610 C10C28DRO	Result <50.2 <50.2	RL 50.2 50.2	Units mg/kg mg/kg	Moisture: Basis: We Analysis Date 11.07.19 17.41 11.07.19 17.41	t Weight Flag U U	1

				00		
Surrogate	Cas Numbe	% Pr Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.07.19 17.41	
o-Terphenyl	84-15-1	117	%	70-135	11.07.19 17.41	

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Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id:SS06ALab Sample Id:642401-006	Matrix: Soil Date Collected: 11.06.19 15.40	Date Received:11.07.19 08.20 Sample Depth: 2.0 ft			
Analytical Method: BTEX by EPA 8021B Tech: MAB		Prep Method: SW5030B % Moisture:			
Analyst: MAB Seq Number: 3106830	Date Prep: 11.07.19 09.23	Basis: Wet Weight			
-	D 1/				

Parameter	Cas Number	· Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
m,p-Xylenes	179601-23-1	< 0.00201	0.00201		mg/kg	11.07.19 14.28	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	118	%	70-130	11.07.19 14.28		
1,4-Difluorobenzene		540-36-3	106	%	70-130	11.07.19 14.28		

Page 66 of 110

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

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda North 31 123H

Analytical Method:	Chloride by EPA 30)0						Pr	ep Metho	d: E300	OP	
Seq Number:	3106794			Matrix:	Solid				Date Pre	p: 11.0	7.19	
MB Sample Id:	7689788-1-BLK		LCS Sar	nple Id:	7689788-	1-BKS		LCSI	O Sample	Id: 7689	9788-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD]	RPD Limi	t Units	Analysis Date	Flag
Chloride	<10.0	250	270	108	268	107	90-110	1	20	mg/kg	11.07.19 11:05	

Analytical Method:	Chloride by EPA 30)0						Pr	ep Metho	od: E30	0P	
Seq Number:	3106794			Matrix:	Soil				Date Pre	ep: 11.0	7.19	
Parent Sample Id:	642401-001	MS Sample Id: 642401-001 S MSD Sample Id:					Id: 6424	401-001 SD				
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD]	RPD Lim	it Units	Analysis Date	Flag
Chloride	50.4	202	278	113	273	111	90-110	2	20	mg/kg	11.07.19 12:05	Х

Analytical Method:	Chloride by EPA 30)0						Р	rep Metho	od: E30	00P	
Seq Number:	3106794			Matrix:	Soil				Date Pre	ep: 11.	07.19	
Parent Sample Id:	642404-005		MS Sar	nple Id:	642404-00)5 S		MS	D Sample	Id: 642	2404-005 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag
Chloride	13300	10200	26500	129	25800	127	90-110	3	20	mg/kg	11.07.19 13:28	х

Analytical Method	TPH by S	SW8015 M	od						I	Prep Method	1: SW	8015P	
Seq Number:	3106866				Matrix:	Solid		Date Prep: 11.07.19					
MB Sample Id:	7689850-	1-BLK		LCS Sar	nple Id:	7689850-	1-BKS		LCS	SD Sample	Id: 768	9850-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocar	bons (GRO)	< 50.0	1000	925	93	912	91	70-135	1	35	mg/kg	11.07.19 14:44	
Diesel Range Organics	(DRO)	< 50.0	1000	1010	101	990	99	70-135	2	35	mg/kg	11.07.19 14:44	
Surrogate		MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Re		-	Limits	Units	Analysis Date	
1-Chlorooctane		110		1	37	**	133		7	0-135	%	11.07.19 14:44	
o-Terphenyl		116		1	20		119		7	0-135	%	11.07.19 14:44	

Analytical Method: Seq Number:	TPH by SW8015 Mod 3106866	Matrix: MB Sample Id:	Solid 7689850-1-BLK	Prep Method: Date Prep:			
Parameter		MB Result			Inits	Analysis Date	Flag
Motor Oil Range Hydrocar	bons (MRO)	<50.0		m	ıg/kg	11.07.19 14:25	

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



LT Environmental, Inc.

Remuda North 31 123H

Analytical Method: 7 Seq Number: 3	Mod		Matrix:	Soil		Prep Method: SW8015P Date Prep: 11.07.19					
Parent Sample Id: 6	542401-001		MS Sample Id: 642401-001 S		MSD Sample Id: 642401-001 SD						
Parameter	Parent Result		MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD RPD Limi	t Units	Analysis Date	Flag
Gasoline Range Hydrocarbon	s (GRO) <50.0	1000	963	96	975	98	70-135	1 35	mg/kg	11.07.19 15:44	
Diesel Range Organics (D	RO) <50.0	1000	1060	106	1050	105	70-135	1 35	mg/kg	11.07.19 15:44	
Surrogate				/IS Rec	MS Flag	MSD %Red			Units	Analysis Date	
1-Chlorooctane			1	26		143	**	70-135	%	11.07.19 15:44	
o-Terphenyl			1	28		126		70-135	%	11.07.19 15:44	

Analytical Method: Seq Number: MB Sample Id:	BTEX by EPA 802 3106830 7689857-1-BLK	LCS San	Matrix: ple Id:	Solid 7689857-	1-BKS		Prep Method: SW5030B Date Prep: 11.07.19 LCSD Sample Id: 7689857-1-BSD					
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI	O RPD Limi	t Units	Analysis Date	Flag
Benzene	< 0.00100	0.100	0.0935	94	0.0893	89	70-130	5	35	mg/kg	11.07.19 10:46	
Toluene	< 0.00100	0.100	0.0932	93	0.0908	91	70-130	3	35	mg/kg	11.07.19 10:46	
Ethylbenzene	< 0.00100	0.100	0.0928	93	0.0896	90	71-129	4	35	mg/kg	11.07.19 10:46	
m,p-Xylenes	< 0.00200	0.200	0.198	99	0.192	96	70-135	3	35	mg/kg	11.07.19 10:46	
o-Xylene	< 0.00100	0.100	0.0993	99	0.0965	97	71-133	3	35	mg/kg	11.07.19 10:46	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSE %Rec			Limits	Units	Analysis Date	
1,4-Difluorobenzene	104		1	04		102		,	70-130	%	11.07.19 10:46	
4-Bromofluorobenzene	93		1	12		115			70-130	%	11.07.19 10:46	

Analytical Method: Seq Number: Parent Sample Id:	BTEX by EPA 802 3106830 642401-001	IB] MS San	Matrix: nple Id:	~ ~ ~ ~	Prep Method: SW5030B bil Date Prep: 11.07.19 42401-001 S MSD Sample Id: 642401-001 SD						
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPE	RPD Limi	t Units	Analysis Date	Flag
Benzene	< 0.000998	0.0998	0.0835	84	0.0954	95	70-130	13	35	mg/kg	11.07.19 20:25	
Toluene	< 0.000998	0.0998	0.0863	86	0.101	101	70-130	16	35	mg/kg	11.07.19 20:25	
Ethylbenzene	< 0.000998	0.0998	0.0826	83	0.0943	94	71-129	13	35	mg/kg	11.07.19 20:25	
m,p-Xylenes	< 0.00200	0.200	0.174	87	0.201	101	70-135	14	35	mg/kg	11.07.19 20:25	
o-Xylene	<0.000998	0.0998	0.0867	87	0.101	101	71-133	15	35	mg/kg	11.07.19 20:25	
Surrogate				IS Rec	MS Flag	MSD %Re		-	Limits	Units	Analysis Date	
1,4-Difluorobenzene			1	02		105		7	70-130	%	11.07.19 20:25	
4-Bromofluorobenzene			1	11		115		2	70-130	%	11.07.19 20:25	

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

Final 1.000

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

a Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sincurred by the client if such losses are due to circumstances beyond the continuint analyzed. These terms will be enforced unless previously negotiated. Relinquished by: (Signature) Received by: (Signature)	Al Sb As Ba I Al Sb As Ba I Al Sb As Ba B A Sb As Ba A Sb A S B A Sb A S B A S B A Sb A S B A S B A S A S A S A S A S A S A S	Sampled Sampled Sampled Deputy 11/6/14 10.30 1.58+ 1 12/05 0.58+ 1 12/05 1.58+ 1 12/10 2.68+ 12/05 0.58+ 1 12/05 1.58+ 1 12/10 2.68+ 12/05 0.58+ 1	SS01A S11A SS04 S14A SS04 S14A SS04 S14A SS05 S205 SS06 S206 SS07 S206 SS06 S206 SS07 S206 SS07 S206 SS06 S206 SS07 S206 SS07 S206 SS06 S206 SS07 S206 S206 S206 S207 S200 S206 S206 S207 S200 S208 S206 S208 S206 S208 S206 S208 S206 S208 S208 S208 S208 S208 S208 S208 S208 S208 S208 <	Total 200.7 / 6010 200.3 S S 0 6 S S 0 6 S S 0 6 A Circle Method(s) and Meta Otice: Signature of this document and re f service. Xenco will be liable only for th f service. Xenco will be liable only for th f service. A minimum charge of \$75.00 w Relinquished by: (Signature)
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- Ag SiO2 Na S	Al Sb As Ba I A Sb As Ba B A Sb As Ba B B A Sb As Ba B B A Sb As Ba B B B B B B B B B B B B B B B B B B	pled Sampled Coput 114 1030 1.58t 1205 0.58t 1240 2.68t 1455 0.58t 1455 0.58t 1455 0.58t 1455 0.58t 1455 0.58t 1540 2.08t 15540 2.08t 15560 88CRA 1600 88CRA 1700 88CRA 1000 88CRA 1010 100t 1010 100t 1010 100t 1010 100t	200.8 / 6020: t and relinquishment of samples ty for the cost of samples and shifts 5.00 will be applied to each pro-	SS 04 A SS 04 A SS 05 SS 0 SS 0 Circle Method(s) and Circle Method(s) and Circle Method(s) and Circle Method(s) and Partice. Xenco will be liable on t service. Xenco will be liable on t service. Xenco will be liable of st Relinquished by: (Signo
Ag SiO2 Na S 16311	Al Sb As Ba Ba A Sb As Ba Ba Ba A Sb As Ba	pled Sampled Copyright 0.14 10.30 1.58+ 1.205 0.58+ 1.240 2.68+ 1.405 0.58+ 1.405 0.58+ 1.405 0.58+ 1.405 0.58+ 1.405 0.58+ 1.4540 2.08+ 1.580 <td< th=""><th>200.8 / 6020: Metal(s) to be analyzed</th><th>SS 04 A SS 05 SS 0 SS 0 SS 0 SS 0 Circle Method(s) and totice: Signature of this document</th></td<>	200.8 / 6020: Metal(s) to be analyzed	SS 04 A SS 05 SS 0 SS 0 SS 0 SS 0 Circle Method(s) and totice: Signature of this document
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E Solution Solution Solution Solution Solution Solution	E × T	Sampled 1030 1205 1240 1455 1455 1455 1455 1455 1455		66411
× Chloride (EPA 300.0 <td><u>е</u></td> <td>Sampled 1030 1205 1240 1405 1405 1455 1455 1455</td> <td></td> <td>6641</td>	<u>е</u>	Sampled 1030 1205 1240 1405 1405 1455 1455 1455		6641
Chloride (EPA 300.0	XT	Sampled 1030 1205 1240 1240 1405 1455		- e v t i
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Chloride (EPA 300.0 Image: Ch	×T	Sampled	_	Loce
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le (EPA 300.0	PH (E TEX (Matrix Si	Sample Identification
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	015)	,	50	Sample Custody Seale:
)	LCO-MN-L	A D	Cooler Custody Seals:
	iner	Thermometer ID		Received Intert
	rs	Tes No Wet Ice: Kes No		Temperature (°C).
		What Ison	Temp Blank:	SAMPLE RECEIPT
		Due Date:	Elizabeth Naka	Sampler's Name:
		Rush: 24 hours	Eddy County	P.O. Number:
ANALYSIS REQUEST Work Order Notes			9037	Project Number:
		123H Turn Around	Remuda North 31	Project Name:
	com. dmoir@ltenv.com	Email: enaka@ltenv.com.	(432) 236-3849	Phone: (43)
	.•	City, State ZIP:	Midland, Tx 79705	City, State ZIP: Mid
P P P P P P P P P P P P P P P P P P P				Address: 330
2		Permian office Company Name:	LT Environmental, Inc., Per	Company Name: LT
WV	nt) Kyle Littrell	Bill to: (if different)	Dan Moir	Project Manager: Da
-	4200 Dallas,TX (214) 5440) EL Paso,TX (9 (,AZ (480-355-0900)	Housson, I X (281) 240- Midland, TX (432-704- Hobbs,NM (575-392-7550) Phoeni	BORATORIES	
Chain of Custody Work Order No: (24240)	Chain	-		

XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc. Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 11/07/2019 08:20:00 AM Temperature Measuring device used : T-NM-007 Work Order #: 642401 Sample Receipt Checklist Comments

#1 *Temperature of cooler(s)?	2.5	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6*Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	No	
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

 Checklist completed by:
 Elizabeth McClellan

 Checklist reviewed by:
 Jessica WAMER

 Jessica Kramer

Date: 11/07/2019

Date: 11/08/2019

Analytical Report 642401

for LT Environmental, Inc.

Project Manager: Dan Moir

Remuda North 31 123H

012919037

21-NOV-19

Collected By: Client



1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19) Xenco-Carlsbad (LELAP): Louisiana (05092) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Tampa: Florida (E87429), North Carolina (483)



21-NOV-19

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

Reference: XENCO Report No(s): 642401 Remuda North 31 123H Project Address: Eddy County

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) 642401. 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. 642401 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,

fession Vermer

 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 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	11-06-19 10:30	1.5 ft	642401-001
BH02	S	11-06-19 12:05	0.5 ft	642401-002
BH02A	S	11-06-19 12:40	2.0 ft	642401-003
BH03	S	11-06-19 14:05	0.5 ft	642401-004
BH04	S	11-06-19 14:55	0.5 ft	642401-005
BH04A	S	11-06-19 15:40	2.0 ft	642401-006



CASE NARRATIVE

Client Name: LT Environmental, Inc. Project Name: Remuda North 31 123H

 Project ID:
 012919037

 Work Order Number(s):
 642401

 Report Date:
 21-NOV-19

 Date Received:
 11/07/2019

Sample receipt non conformances and comments:

PER CLIENTS EMAIL CORRECTED SAMPLE NAMES. NEW VERSION GENERATED. JK 11/21/19 SS01 --> BH01 SS04 --> BH02 SS04A --> BH02A SS05 --> BH03 SS06 --> BH04 SS06A --> BH04A

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3106794 Chloride by EPA 300

Lab Sample ID 642404-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 642401-001, -002, -003, -004, -005, -006.

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

Batch: LBA-3106830 BTEX by EPA 8021B

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

Batch: LBA-3106866 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7689850-1-BKS,642401-001 SD.



Project Id:012919037Contact:Dan MoirProject Location:Eddy County

Certificate of Analysis Summary 642401

LT Environmental, Inc., Arvada, CO Project Name: Remuda North 31 123H

Date Received in Lab:Thu Nov-07-19 08:20 amReport Date:21-NOV-19Project Manager:Jessica Kramer

	Lab Id:	642401-0	001	642401-0	002	642401-0	003	642401-	004	642401-	005	642401-	006
Analysis Beauested	Field Id:	BH01		BH02	BH02 BH02A		A	BH03		BH04		BH044	4
Analysis Requested	Depth:	1.5- ft	t	0.5- ft		2.0- ft		0.5- ft		0.5- ft		2.0- ft	
	Matrix:	SOIL	,	SOIL	,	SOIL	,	SOIL	,	SOIL		SOIL	
	Sampled:	Nov-06-19	10:30	Nov-06-19	12:05	Nov-06-19	12:40	Nov-06-19	14:05	Nov-06-19	14:55	Nov-06-19	15:40
BTEX by EPA 8021B	Extracted:	Nov-07-19	09:23	Nov-07-19	09:23	Nov-07-19	09:23	Nov-07-19	09:23	Nov-07-19	09:23	Nov-07-19	09:23
	Analyzed:	Nov-07-19	12:52	Nov-07-19	13:11	Nov-07-19	13:30	Nov-07-19	13:49	Nov-07-19	14:08	Nov-07-19	14:28
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
Toluene		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
Ethylbenzene		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
m,p-Xylenes		< 0.00200	0.00200	< 0.00202	0.00202	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00201	0.00201	< 0.00201	0.00201
o-Xylene		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
Total Xylenes		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
Total BTEX		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100	< 0.00100	0.00100	< 0.00101	0.00101	< 0.00100	0.00100
Chloride by EPA 300	Extracted:	Nov-07-19	10:11	Nov-07-19	10:11	Nov-07-19	10:11	Nov-07-19	10:11	Nov-07-19	10:11	Nov-07-19	10:11
	Analyzed:	Nov-07-19	11:59	Nov-07-19	12:16	Nov-07-19	12:22	Nov-07-19	12:28	Nov-07-19	12:34	Nov-07-19	12:52
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		50.4	10.0	125	101	28.0	10.0	278	200	727	200	256	49.9
TPH by SW8015 Mod	Extracted:	Nov-07-19	13:00	Nov-07-19	13:00	Nov-07-19	13:00	Nov-07-19	13:00	Nov-07-19	13:00	Nov-07-19	13:00
	Analyzed:	Nov-07-19	15:24	Nov-07-19	16:23	Nov-07-19	16:42	Nov-07-19	17:02	Nov-07-19	17:22	Nov-07-19	17:41
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.2	50.2	<50.2	50.2	<50.2	50.2	<50.3	50.3	<50.2	50.2	< 50.2	50.2
Diesel Range Organics (DRO)		<50.2	50.2	<50.2	50.2	<50.2	50.2	<50.3	50.3	<50.2	50.2	<50.2	50.2
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2	<50.2	50.2	<50.2	50.2	<50.3	50.3	<50.2	50.2	<50.2	50.2
Total GRO-DRO		<50.2	50.2	<50.2	50.2	<50.2	50.2	<50.3	50.3	<50.2	50.2	<50.2	50.2
Total TPH		<50.2	50.2	<50.2	50.2	< 50.2	50.2	<50.3	50.3	<50.2	50.2	<50.2	50.2

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Version: 1.%

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Jessica Kramer Project Assistant

Final 1.001



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: BH01 Lab Sample Id: 642401-001		Matrix: Date Colle	Soil cted: 11.06.19 10.30	Date Received:11.07.19 08.20 Sample Depth: 1.5 ft			
Analytical Method: Chloride by EF	PA 300				Prep Method: E3	00P	
Tech: MAB					% Moisture:		
Analyst: MAB		Date Prep:	11.07.19 10.11		Basis: We	et Weight	
Seq Number: 3106794							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	50.4	10.0	mg/kg	11.07.19 11.59		1
Analytical Method:TPH by SW80Tech:DTHAnalyst:DTHSeq Number:3106866	15 Mod	Date Prep:	11.07.19 13.00		Prep Method: SW % Moisture: Basis: We	/8015P et Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.07.19 15.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.07.19 15.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.07.19 15.24	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.07.19 15.24	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.07.19 15.24	U	1
			0/_				

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.07.19 15.24	
o-Terphenyl	84-15-1	116	%	70-135	11.07.19 15.24	



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: BH01 Lab Sample Id: 642401-001	Matrix: Date Colle	Soil cted: 11.06.19 10.30		eceived:11.07.19 08.20 Depth: 1.5 ft		
Analytical Method: BTEX by EPA 8 Tech: MAB	3021B		Prep Metho % Moistur	od: SW5030B e:		
Analyst: MAB	Date Prep:	11.07.19 09.23	Basis:	Wet Weight		
Seq Number: 3106830						
D	Coo Normhon Dogult	DI I				

Cas Number	· Result	RL		Units	Analysis Date	Flag	Dil
71-43-2	< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
108-88-3	< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
100-41-4	< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
179601-23-1	< 0.00200	0.00200		mg/kg	11.07.19 12.52	U	1
95-47-6	< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
1330-20-7	< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
	< 0.00100	0.00100		mg/kg	11.07.19 12.52	U	1
	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
	540-36-3	101	%	70-130	11.07.19 12.52		
	460-00-4	105	%	70-130	11.07.19 12.52		
	71-43-2 108-88-3 100-41-4 179601-23-1 95-47-6	71-43-2 <0.00100	71-43-2 <0.00100 0.00100 108-88-3 <0.00100	71-43-2 <0.00100	71-43-2 <0.00100 0.00100 mg/kg 108-88-3 <0.00100	71-43-2 <0.00100 0.00100 mg/kg 11.07.19 12.52 108-88-3 <0.00100	71-43-2 <0.00100 0.00100 mg/kg 11.07.19 12.52 U 108-88-3 <0.00100



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: Lab Sample Id	BH02 : 642401-002		Matrix: Date Collec	Soil cted: 11.06.19 12.05		Date Received:11.07.1 Sample Depth:0.5 ft	9 08.20
Tech: Analyst:	hod: Chloride by EPA MAB MAB 3106794	300	Date Prep:	11.07.19 10.11		Prep Method: E300P % Moisture: Basis: Wet We	eight
Parameter		Cas Number	Result	RL	Units	Analysis Date F	lag Dil
Chloride		16887-00-6	125	101	mg/kg	11.07.19 12.16	10
Tech: Analyst:	hod: TPH by SW8015 DTH DTH 3106866	Mod	Date Prep:	11.07.19 13.00		Prep Method: SW801 % Moisture: Basis: Wet We	
Parameter		Cas Number	Result	RL	Units	Analysis Date F	lag Dil

T at anicter	Cas Humber	KtSuit	KL		Units	Analysis Date	riag	Dii
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2		mg/kg	11.07.19 16.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2		mg/kg	11.07.19 16.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2		mg/kg	11.07.19 16.23	U	1
Total GRO-DRO	PHC628	<50.2	50.2		mg/kg	11.07.19 16.23	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	11.07.19 16.23	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	109	%	70-135	11.07.19 16.23		
o-Terphenyl		84-15-1	115	%	70-135	11.07.19 16.23		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id:BH02Lab Sample Id:642401-002		Matrix: Date Collecte	Soil d: 11.06.19 12.05		ived:11.07.19 08.20 epth:0.5 ft	1
Analytical Method: BTEX by EPA Tech: MAB	8021B			Prep Meth % Moistu	od: SW5030B re:	
Analyst: MAB Seq Number: 3106830		Date Prep:	11.07.19 09.23	Basis:	Wet Weight	
Parameter	Cas Number	Result R	SL.	Units Analys	is Date Flag	Dil

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
Toluene	108-88-3	< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
Ethylbenzene	100-41-4	< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
m,p-Xylenes	179601-23-1	< 0.00202	0.00202		mg/kg	11.07.19 13.11	U	1
o-Xylene	95-47-6	< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
Total Xylenes	1330-20-7	< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
Total BTEX		< 0.00101	0.00101		mg/kg	11.07.19 13.11	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	118	%	70-130	11.07.19 13.11		
1,4-Difluorobenzene		540-36-3	106	%	70-130	11.07.19 13.11		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id:BH02ALab Sample Id:642401-003		Matrix: Date Collec	Soil cted: 11.06.19 12.40	Date Received:11.07.19 08.20 Sample Depth: 2.0 ft			
Analytical Method: Chloride by EP.	A 300				Prep Method: E3	00P	
Tech: MAB					% Moisture:		
Analyst: MAB		Date Prep:	11.07.19 10.11		Basis: We	t Weight	
Seq Number: 3106794		1				Ū	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.0	10.0	mg/kg	11.07.19 12.22		1
Analytical Method: TPH by SW801 Tech: DTH Analyst: DTH Seq Number: 3106866	5 Mod	Date Prep:	11.07.19 13.00		Prep Method: SW % Moisture: Basis: We	78015P t Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.07.19 16.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.07.19 16.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.07.19 16.42	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.07.19 16.42	U	1

		%				
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	11.07.19 16.42	
o-Terphenyl	84-15-1	116	%	70-135	11.07.19 16.42	



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: BH02A Lab Sample Id: 642401-003	Matrix: Soil Date Collected: 11.06.19 12.40	Date Received:11.07.19 08.20 Sample Depth: 2.0 ft		
Analytical Method: BTEX by EPA Tech: MAB	8021B	Prep Method: SW5030B % Moisture:		
Analyst: MAB Seq Number: 3106830	Date Prep: 11.07.19 09.23	Basis: Wet Weight		
D (

Parameter	Cas Number	- Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
m,p-Xylenes	179601-23-1	< 0.00200	0.00200		mg/kg	11.07.19 13.30	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	11.07.19 13.30	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	106	%	70-130	11.07.19 13.30		
4-Bromofluorobenzene		460-00-4	116	%	70-130	11.07.19 13.30		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: BH03 Lab Sample Id: 642401-004		Matrix: Date Collecto	Soil ed: 11.06.19 14.05	Date Received:11.07.19 08.20 Sample Depth: 0.5 ft)
Analytical Method:Chloride byTech:MABAnalyst:MABSeq Number:3106794	EPA 300	Date Prep:	11.07.19 10.11		Prep Method: % Moisture: Basis:	E300P Wet Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Da	te Flag	Dil
Chloride	16887-00-6	278	200	mg/kg	11.07.19 12.2	28	20
Chloride Analytical Method: TPH by SW8 Tech: DTH Analyst: DTH		278 Date Prep:	200	mg/kg	Prep Method: % Moisture:		20

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3		mg/kg	11.07.19 17.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3		mg/kg	11.07.19 17.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3		mg/kg	11.07.19 17.02	U	1
Total GRO-DRO	PHC628	<50.3	50.3		mg/kg	11.07.19 17.02	U	1
Total TPH	PHC635	<50.3	50.3		mg/kg	11.07.19 17.02	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	106	%	70-135	11.07.19 17.02		
o-Terphenyl		84-15-1	112	%	70-135	11.07.19 17.02		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: BH03 Lab Sample Id: 642401-004	Matrix: Date Colle	Soil cted: 11.06.19 14.05	Date Received:11.07.19 08.20 Sample Depth: 0.5 ft		
Analytical Method: BTEX by EPA Tech: MAB	8021B		Prep Meth % Moistur	od: SW5030B e:	
Analyst: MAB	Date Prep:	11.07.19 09.23	Basis:	Wet Weight	
Seq Number: 3106830	Coo Nambar Dorolt	DI			

Parameter	Cas Number	· Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
m,p-Xylenes	179601-23-1	< 0.00201	0.00201		mg/kg	11.07.19 13.49	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	11.07.19 13.49	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	117	%	70-130	11.07.19 13.49		
1,4-Difluorobenzene		540-36-3	106	%	70-130	11.07.19 13.49		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: BH04 Lab Sample Id: 642401-005		Matrix: Date Collec	Soil eted: 11.06.19 14.55	Date Received:11.07.19 08.20 Sample Depth: 0.5 ft			1
Analytical Method: Chloride by EPA Tech: MAB Analyst: MAB Seq Number: 3106794	x 300	Date Prep:	11.07.19 10.11	%]	ep Method: E30 Moisture: sis: Wet	0P Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	727	200	mg/kg	11.07.19 12.34		20
Analytical Method: TPH by SW8015 Tech: DTH Analyst: DTH Seq Number: 3106866	9 Mod	Date Prep:	11.07.19 13.00	%]	ep Method: SW8 Moisture: sis: Wet	3015P Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil

Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2		mg/kg	11.07.19 17.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2		mg/kg	11.07.19 17.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2		mg/kg	11.07.19 17.22	U	1
Total GRO-DRO	PHC628	<50.2	50.2		mg/kg	11.07.19 17.22	U	1
Total TPH	PHC635	<50.2	50.2		mg/kg	11.07.19 17.22	U	1
		~	%					
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	103	%	70-135	11.07.19 17.22		
o-Terphenyl		84-15-1	109	%	70-135	11.07.19 17.22		

Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: BH04 Lab Sample Id: 642401-005		Matrix: Date Collecte	Soil d: 11.06.19 14.55	Date Received:11.07.19 08.20 Sample Depth: 0.5 ft			
Analytical Method: BTEX by EPA Tech: MAB	8021B			-	Method: SW5030B		
Analyst: MAB Seq Number: 3106830		Date Prep:	11.07.19 09.23	Basis	Wet Weigh	.t	
Parameter	Cas Number	Result 5	21.	Units Ar	nalvsis Data – Flag	Dil	

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
Toluene	108-88-3	< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
Ethylbenzene	100-41-4	< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
m,p-Xylenes	179601-23-1	< 0.00201	0.00201		mg/kg	11.07.19 14.08	U	1
o-Xylene	95-47-6	< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
Total Xylenes	1330-20-7	< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
Total BTEX		< 0.00101	0.00101		mg/kg	11.07.19 14.08	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	112	%	70-130	11.07.19 14.08		
1,4-Difluorobenzene		540-36-3	105	%	70-130	11.07.19 14.08		



Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: BH04A Lab Sample Id: 642401-006		Matrix: Date Collec	Soil cted: 11.06.19 15.40		Date Received:11.07.19 08.20 Sample Depth: 2.0 ft			
Analytical Method: Chloride by EF	PA 300				Prep Method: E30	00P		
Tech: MAB					% Moisture:			
Analyst: MAB		Date Prep:	11.07.19 10.11		Basis: We	t Weight		
Seq Number: 3106794		-						
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Chloride	16887-00-6	256	49.9	mg/kg	11.07.19 12.52		5	
Analytical Method:TPH by SW80Tech:DTHAnalyst:DTHSeq Number:3106866	15 Mod	Date Prep:	11.07.19 13.00		Prep Method: SW % Moisture: Basis: We	78015P t Weight		
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.07.19 17.41	U	1	
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.07.19 17.41	U	1	
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.07.19 17.41	U	1	
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.07.19 17.41	U	1	
Total TPH	PHC635	<50.2	50.2	mg/kg	11.07.19 17.41	U	1	
			9/					

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.07.19 17.41	
o-Terphenyl	84-15-1	117	%	70-135	11.07.19 17.41	

Certificate of Analytical Results 642401

LT Environmental, Inc., Arvada, CO

Remuda North 31 123H

Sample Id: BH04A Lab Sample Id: 642401-006	Matrix: Soil Date Collected: 11.06.19 15.40	Date Received:11.07.19 08.20 Sample Depth: 2.0 ft
Analytical Method: BTEX by EPA 8 Tech: MAB	8021B	Prep Method: SW5030B % Moisture:
Analyst: MAB Seq Number: 3106830	Date Prep: 11.07.19 09.23	Basis: Wet Weight

Parameter	Cas Number	- Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
m,p-Xylenes	179601-23-1	< 0.00201	0.00201		mg/kg	11.07.19 14.28	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	11.07.19 14.28	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	118	%	70-130	11.07.19 14.28		
1,4-Difluorobenzene		540-36-3	106	%	70-130	11.07.19 14.28		

Flagging Criteria

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

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda North 31 123H

Analytical Method:	Chloride by EPA 3	00						Pr	ep Metho	d: E300	OP	
Seq Number:	3106794			Matrix:	Solid				Date Pre	p: 11.0	7.19	
MB Sample Id:	7689788-1-BLK		LCS Sar	nple Id:	7689788-	1-BKS		LCSI	O Sample	Id: 7689	9788-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD]	RPD Limi	t Units	Analysis Date	Flag
Chloride	<10.0	250	270	108	268	107	90-110	1	20	mg/kg	11.07.19 11:05	

Analytical Method:	Chloride by EPA 30	00						Pı	ep Metho	od: E30	0P	
Seq Number:	3106794			Matrix:	Soil				Date Pr	ep: 11.0	7.19	
Parent Sample Id:	642401-001		MS Sar	nple Id:	642401-00	01 S		MS	D Sample	Id: 642	401-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	50.4	202	278	113	273	111	90-110	2	20	mg/kg	11.07.19 12:05	Х

Analytical Method:	Chloride by EPA 30)0						P	rep Metho	od: E30	0P	
Seq Number:	3106794			Matrix:	Soil				Date Pre	ep: 11.0	7.19	
Parent Sample Id:	642404-005		MS Sar	nple Id:	642404-00)5 S		MS	D Sample	Id: 6424	404-005 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
	result	imouni		/01000	Result	/once					Dure	

Analytical Method:	TPH by S	SW8015 M	od						F	Prep Method	1: SW	8015P	
Seq Number:	3106866				Matrix:	Solid				Date Prep	p: 11.0	07.19	
MB Sample Id:	7689850-	1-BLK		LCS Sar	nple Id:	7689850-	1-BKS		LCS	SD Sample	Id: 768	9850-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarb	oons (GRO)	< 50.0	1000	925	93	912	91	70-135	1	35	mg/kg	11.07.19 14:44	
Diesel Range Organics	(DRO)	< 50.0	1000	1010	101	990	99	70-135	2	35	mg/kg	11.07.19 14:44	
Surrogate		MB %Rec	MB Flag			LCS Flag	LCSI %Re		-	Limits	Units	Analysis Date	
1-Chlorooctane		110		1	37	**	133		7	0-135	%	11.07.19 14:44	
o-Terphenyl		116		1	20		119		7	0-135	%	11.07.19 14:44	

Analytical Method:TPH by SW8015 ModSeq Number:3106866	Matrix: S MB Sample Id: 7	Solid	ep Method: SW8 Date Prep: 11.0		
Parameter	MB Result		Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0		mg/kg	11.07.19 14:25	

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

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Final 1.001



LT Environmental, Inc.

Remuda North 31 123H

Analytical Method: Seq Number:	TPH by S 3106866	W8015 M	lod		Matrix:	Soil				p Metho Date Pre		8015P 97.19	
Parent Sample Id:	642401-00)1		MS Sar	nple Id:	642401-0	01 S				1	401-001 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD R	PD Limit	t Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	< 50.0	1000	963	96	975	98	70-135	1	35	mg/kg	11.07.19 15:44	
Diesel Range Organics ((DRO)	< 50.0	1000	1060	106	1050	105	70-135	1	35	mg/kg	11.07.19 15:44	
Surrogate					IS Rec	MS Flag	MSD %Rec			iits	Units	Analysis Date	
1-Chlorooctane				1	26		143	**	70-1	35	%	11.07.19 15:44	
o-Terphenyl				1	28		126		70-1	35	%	11.07.19 15:44	

Analytical Method: Seq Number: MB Sample Id:	BTEX by EPA 802 3106830 7689857-1-BLK	1B] LCS San	Matrix: ple Id:	Solid 7689857-	1-BKS			Prep Metho Date Pre SD Sample	p: 11.0	5030B 17.19 9857-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI	O RPD Limit	t Units	Analysis Date	Flag
Benzene	< 0.00100	0.100	0.0935	94	0.0893	89	70-130	5	35	mg/kg	11.07.19 10:46	
Toluene	< 0.00100	0.100	0.0932	93	0.0908	91	70-130	3	35	mg/kg	11.07.19 10:46	
Ethylbenzene	< 0.00100	0.100	0.0928	93	0.0896	90	71-129	4	35	mg/kg	11.07.19 10:46	
m,p-Xylenes	< 0.00200	0.200	0.198	99	0.192	96	70-135	3	35	mg/kg	11.07.19 10:46	
o-Xylene	< 0.00100	0.100	0.0993	99	0.0965	97	71-133	3	35	mg/kg	11.07.19 10:46	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSD %Rec			Limits	Units	Analysis Date	
1,4-Difluorobenzene	104		1	04		102		,	70-130	%	11.07.19 10:46	
4-Bromofluorobenzene	93		1	12		115			70-130	%	11.07.19 10:46	

Analytical Method: Seq Number: Parent Sample Id:	BTEX by EPA 802 3106830 642401-001	1B] MS San	Matrix: nple Id:	~ ~ ~ ~	01 S			Prep Metho Date Pre SD Sample	ep: 11.0	5030B 17.19 401-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPE	RPD Limi	t Units	Analysis Date	Flag
Benzene	< 0.000998	0.0998	0.0835	84	0.0954	95	70-130	13	35	mg/kg	11.07.19 20:25	
Toluene	< 0.000998	0.0998	0.0863	86	0.101	101	70-130	16	35	mg/kg	11.07.19 20:25	
Ethylbenzene	< 0.000998	0.0998	0.0826	83	0.0943	94	71-129	13	35	mg/kg	11.07.19 20:25	
m,p-Xylenes	< 0.00200	0.200	0.174	87	0.201	101	70-135	14	35	mg/kg	11.07.19 20:25	
o-Xylene	<0.000998	0.0998	0.0867	87	0.101	101	71-133	15	35	mg/kg	11.07.19 20:25	
Surrogate				IS Rec	MS Flag	MSD %Re		-	Limits	Units	Analysis Date	
1,4-Difluorobenzene			1	02		105		7	70-130	%	11.07.19 20:25	
4-Bromofluorobenzene			1	11		115		2	70-130	%	11.07.19 20:25	

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

Final 1.001

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

				Chain of Custodv	Custody	E	
	MZCO	Housto Midla	n,TX (281) 240-4200 nd,TX (432-704-5440)	iouston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX	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	Work Order No:	10/7/281
Project Manager:	Dan Moir	טאואי, בעסטוו	Bill to: (if different)	Bill to: (if different) Kyle I itten!	a,GA (770-449-8800) Tampa,FL (813-620-2000)	-620-2000) <u>www.xenco.com</u>	Page of
Company Name:	LT Environmental, Inc.,	, Permian office	Company Name:	YTO Energy		Work Order Comments	omments
Address:	3300 North A Street		Address:	ALC LIEUY		Program: UST/PST CRP rownfields	elds RC perfund
City, State ZIP:	Midland, Tx 79705		City, State ZIP:				
Phone:	(432) 236-3849	Email:	Email: enaka@ltenv.com. dmoir@ltenv.com	dmoir@ltenv com		Level III	
Project Name:	Remude North	31 1234 -					Other:
Project Number:	96	Ro			ANALYSIS REQUEST	ST	Work Order Notes
P.O. Number:	Eddy County		Rush: 24 hours				
Sampler's Name:	Elizabeth Naka		Date:				
SAMPLE RECEIPT	Temp Blank:	S No W	No No				
Temperature (°C):		The	THE INC				
Received Intact:	No No	T-NH-	3				
Cooler Custody Seals:		Correction Factor:	د	=802			
Sample Custody Seals:	Yes Ma NiA	Total Containers:	&	PA 0			TAT starts the day received by the
SG 0.1. A	Matrix		Depth	TPH (E BTEX (Chlorid			Sample Comments
4 1005		116/14 1030	1.58+ 1				
5		12/10	180.0				
		14 11	C.080				
9055		541	7.				
8306A	*	1540	1 120.5	4			
			F				
				GW			
Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM	Texas 11 Al	Sb As Ba Be B			11 /
Notice: Signature of this docu	: Signature of this document and relinquishment of samela		ICLP / SPLP 6010: 8RCRA S	Sb As Ba Be Cd Cr Co	Cr Co Cu Pb Mn Mo Ni Se Ag TI U	9000	1631 / 245.1 / 7470 / 7471 : Hg
of service. Xenco will be liable of Xenco. A minimum charge	e only for the cost of samples a of \$75.00 will be applied to eac	mpies constitutes a valid purch and shall not assume any respo th project and a charge of \$5 fo	lase order from client consibility for any losses reach sample submitte	ompany to Xenco, its af or expenses incurred b d to Xenco, but not anal	of service. Xenco 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 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 noncliated		
W. L. K M I	gnature) R	Received by: (Signature)		Date/Time	Relinquished by: (Signature)	Received by: (Signature)	
Mymm lota	1	(Corres A	14/11	19 08-20 2			Date/ I Ime
		4		4			
eceiv			-	0			
							revised Late 051418 Rev. 2018.1

01 of 110

XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc. Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 11/07/2019 08:20:00 AM Temperature Measuring device used : T-NM-007 Work Order #: 642401 Sample Receipt Checklist Comments

#1 *Temperature of cooler(s)?	2.5	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6*Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	No	
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

 Checklist completed by:
 Elizabeth McClellan

 Checklist reviewed by:
 Jessica WAMER

 Jessica Kramer

Date: 11/07/2019

Date: 11/08/2019

Analytical Report 643271

for LT Environmental, Inc.

Project Manager: Dan Moir

Remuda North 31 State 123 H

012919037

19-NOV-19

Collected By: Client



1089 N Canal Street Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19) Xenco-Carlsbad (LELAP): Louisiana (05092) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Tampa: Florida (E87429), North Carolina (483)



19-NOV-19

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

Reference: XENCO Report No(s): 643271 Remuda North 31 State 123 H Project Address: Eddy County

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) 643271. 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. 643271 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,

fession Vermer

 Jessica Kramer

 Project Assistant

 Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies.

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

Sample Cross Reference 643271

LT Environmental, Inc., Arvada, CO

Remuda North 31 State 123 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	11-14-19 14:28	2 ft	643271-001
PH02	S	11-14-19 14:37	2 ft	643271-002
PH03	S	11-14-19 14:43	2 ft	643271-003



CASE NARRATIVE

Client Name: LT Environmental, Inc. Project Name: Remuda North 31 State 123 H

 Project ID:
 012919037

 Work Order Number(s):
 643271

Report Date: *19-NOV-19* Date Received: *11/14/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3107730 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



012919037 **Project Id: Contact:** Dan Moir Eddy County **Project Location:**

Certificate of Analysis Summary 643271

LT Environmental, Inc., Arvada, CO Project Name: Remuda North 31 State 123 H

Date Received in Lab: Thu Nov-14-19 04:44 pm Report Date: 19-NOV-19 Project Manager: Jessica Kramer

	Lab Id:	643271-0	001	643271-0	002	643271-0	003		
Analysis Requested	Field Id:	PH01		PH02		PH03			
Analysis Kequesieu	Depth:	2- ft		2- ft		2- ft			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Nov-14-19	14:28	Nov-14-19	14:37	Nov-14-19	14:43		
BTEX by EPA 8021B	Extracted:	Nov-14-19	19:11	Nov-14-19	19:11	Nov-14-19	19:11		
	Analyzed:	Nov-15-19	10:34	Nov-15-19	10:54	Nov-15-19	11:13		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00101	0.00101		
Toluene		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00101	0.00101		
Ethylbenzene		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00101	0.00101		
m,p-Xylenes		< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201		
o-Xylene		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00101	0.00101		
Total Xylenes		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00101	0.00101		
Total BTEX		< 0.00100	0.00100	< 0.00101	0.00101	< 0.00101	0.00101		
Chloride by EPA 300	Extracted:	Nov-14-19	18:11	Nov-15-19 07:30		Nov-15-19 07:30			
	Analyzed:	Nov-15-19	10:12	Nov-15-19 10:18		Nov-15-19 10:35			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		29.7	10.0	60.1	10.1	48.2	10.1		
TPH by SW8015 Mod	Extracted:	Nov-14-19	17:00	Nov-15-19	17:00	Nov-15-19	17:00		
	Analyzed:	Nov-15-19	15:10	Nov-16-19	01:45	Nov-16-19	03:25		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1	<50.2	50.2	<50.2	50.2		
Diesel Range Organics (DRO)		<50.1	50.1	<50.2	50.2	<50.2	50.2		
Motor Oil Range Hydrocarbons (MRO)		<50.1	50.1	<50.2	50.2	<50.2	50.2		
Total GRO-DRO		<50.1	50.1	<50.2	50.2	< 50.2	50.2		
Total TPH		<50.1	50.1	<50.2	50.2	<50.2	50.2		

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

Version: 1.%

fession kenner

Jessica Kramer Project Assistant

Final 1.000



Certificate of Analytical Results 643271

LT Environmental, Inc., Arvada, CO

Remuda North 31 State 123 H

Sample Id:PH01Lab Sample Id:643271-001		Matrix: Date Colle	Soil cted: 11.14	.19 14.28		Date Received:11. Sample Depth: 2 ft		4		
Analytical Method: Chloride by EP.	A 300				Prep Method: E300P					
Tech: MAB					9	6 Moisture:				
Analyst: MAB		Date Prep:	11.14	.19 18.11	H	Basis: We	t Weight			
Seq Number: 3107636										
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil		
Chloride	16887-00-6	29.7	10.0		mg/kg	11.15.19 10.12		1		
Analytical Method:TPH by SW801Tech:DTHAnalyst:DTHSeq Number:3107677	5 Mod	Date Prep:	11.14	.19 17.00	9	Prep Method: SW 6 Moisture: Basis: We	8015P t Weight			
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil		
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1		mg/kg	11.15.19 15.10	U	1		
Diesel Range Organics (DRO)	C10C28DRO	< 50.1	50.1		mg/kg	11.15.19 15.10	U	1		
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	11.15.19 15.10	U	1		
Total GRO-DRO	PHC628	<50.1	50.1		mg/kg	11.15.19 15.10	U	1		
Total TPH	PHC635	<50.1	50.1		mg/kg	11.15.19 15.10	U	1		
Surrogate			% Recovery	Units	Limits	Analysis Date	Flag			
1-Chlorooctane		111-85-3	87	%	70-135	11.15.19 15.10				
o-Terphenyl		84-15-1	96	%	70-135	11.15.19 15.10				



Certificate of Analytical Results 643271

LT Environmental, Inc., Arvada, CO

Remuda North 31 State 123 H

Sample Id: PH01 Lab Sample Id: 643271-001		Matrix: Date Collecte	Soil d: 11.14.19 14.28		eceived:11.14.19 16.4 Depth:2 ft	14
Analytical Method: BTEX by EPA Tech: MAB	8021B			Prep M % Mois	ethod: SW5030B	
Analyst: MAB Seq Number: 3107730		Date Prep:	11.14.19 19.11	Basis:	Wet Weight	
Parameter	Cas Number	Result F	SL.	Units Ana	lysis Date Flag	Dil

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00100	0.00100		mg/kg	11.15.19 10.34	U	1
Toluene	108-88-3	< 0.00100	0.00100		mg/kg	11.15.19 10.34	U	1
Ethylbenzene	100-41-4	< 0.00100	0.00100		mg/kg	11.15.19 10.34	U	1
m,p-Xylenes	179601-23-1	< 0.00200	0.00200		mg/kg	11.15.19 10.34	U	1
o-Xylene	95-47-6	< 0.00100	0.00100		mg/kg	11.15.19 10.34	U	1
Total Xylenes	1330-20-7	< 0.00100	0.00100		mg/kg	11.15.19 10.34	U	1
Total BTEX		< 0.00100	0.00100		mg/kg	11.15.19 10.34	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	89	%	70-130	11.15.19 10.34		
4-Bromofluorobenzene		460-00-4	108	%	70-130	11.15.19 10.34		



Certificate of Analytical Results 643271

LT Environmental, Inc., Arvada, CO

Remuda North 31 State 123 H

Sample Id:PH02Lab Sample Id:643271-002		Matrix: Date Colle	Soil cted: 11.14	.19 14.37		Date Received:11.1 ample Depth: 2 ft		4
Analytical Method: Chloride by EP	A 300				P	rep Method: E30	0P	
Tech: MAB					%	6 Moisture:		
Analyst: MAB		Date Prep:	11.15	.19 07.30	E	Basis: Wet	Weight	
Seq Number: 3107636								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	60.1	10.1		mg/kg	11.15.19 10.18		1
Analytical Method: TPH by SW801	5 Mod				D	rep Method: SW	8015P	
Tech:DTHAnalyst:DTHSeq Number:3107718		Date Prep:	11.15	.19 17.00	%	6 Moisture:	t Weight	
Analyst: DTH	Cas Number	Date Prep: Result	11.15 RL	.19 17.00	%	6 Moisture:		Dil
Analyst: DTH Seq Number: 3107718				.19 17.00	% E	6 Moisture: Basis: Wet	t Weight	Dil
Analyst: DTH Seq Number: 3107718 Parameter	Cas Number	Result	RL	.19 17.00	% E Units	6 Moisture: Basis: Wet Analysis Date	t Weight Flag	
Analyst: DTH Seq Number: 3107718 Parameter Gasoline Range Hydrocarbons (GRO)	Cas Number PHC610	Result <50.2	RL 50.2	.19 17.00	% E Units mg/kg	6 Moisture: Basis: Wet Analysis Date 11.16.19 01.45	t Weight Flag U	1
Analyst: DTH Seq Number: 3107718 Parameter Gasoline Range Hydrocarbons (GRO) Diesel Range Organics (DRO)	Cas Number PHC610 C10C28DRO	Result <50.2 <50.2	RL 50.2 50.2	.19 17.00	9 E Units mg/kg mg/kg	6 Moisture: Basis: Wet Analysis Date 11.16.19 01.45 11.16.19 01.45	t Weight Flag U U	1
Analyst: DTH Seq Number: 3107718 Parameter Gasoline Range Hydrocarbons (GRO) Diesel Range Organics (DRO) Motor Oil Range Hydrocarbons (MRO)	Cas Number PHC610 C10C28DRO PHCG2835	Result <50.2 <50.2 <50.2	RL 50.2 50.2 50.2	.19 17.00	9 E Units mg/kg mg/kg mg/kg	6 Moisture: Basis: Wet Analysis Date 11.16.19 01.45 11.16.19 01.45 11.16.19 01.45	t Weight Flag U U U	1 1 1
Analyst: DTH Seq Number: 3107718 Parameter Gasoline Range Hydrocarbons (GRO) Diesel Range Organics (DRO) Motor Oil Range Hydrocarbons (MRO) Total GRO-DRO	Cas Number PHC610 C10C28DRO PHCG2835 PHC628	Result <50.2 <50.2 <50.2 <50.2 <50.2 <50.2	RL 50.2 50.2 50.2 50.2	.19 17.00 Units	% E Units mg/kg mg/kg mg/kg mg/kg	6 Moisture: Basis: Wet Analysis Date 11.16.19 01.45 11.16.19 01.45 11.16.19 01.45 11.16.19 01.45	t Weight Flag U U U U U	1 1 1 1
Analyst: DTH Seq Number: 3107718 Parameter Gasoline Range Hydrocarbons (GRO) Diesel Range Organics (DRO) Motor Oil Range Hydrocarbons (MRO) Total GRO-DRO Total TPH	Cas Number PHC610 C10C28DRO PHCG2835 PHC628 PHC635	Result <50.2 <50.2 <50.2 <50.2 <50.2 <50.2	RL 50.2 50.2 50.2 50.2 50.2 50.2 %		% E Units mg/kg mg/kg mg/kg mg/kg mg/kg	6 Moisture: Basis: Wet Analysis Date 11.16.19 01.45 11.16.19 01.45 11.16.19 01.45 11.16.19 01.45 11.16.19 01.45	t Weight Flag U U U U U U U	1 1 1 1



Certificate of Analytical Results 643271

LT Environmental, Inc., Arvada, CO

Remuda North 31 State 123 H

Sample Id:PH02Lab Sample Id:643271-002	Matrix: Soil Date Collected: 11.14.19 14.37	Date Received:11.14.19 16.44 Sample Depth: 2 ft
Analytical Method: BTEX by EPA 8021B Tech: MAB		Prep Method: SW5030B % Moisture:
Analyst: MAB	Date Prep: 11.14.19 19.11	Basis: Wet Weight
Seq Number: 3107730		

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00101	0.00101		mg/kg	11.15.19 10.54	U	1
Toluene	108-88-3	< 0.00101	0.00101		mg/kg	11.15.19 10.54	U	1
Ethylbenzene	100-41-4	< 0.00101	0.00101		mg/kg	11.15.19 10.54	U	1
m,p-Xylenes	179601-23-1	< 0.00202	0.00202		mg/kg	11.15.19 10.54	U	1
o-Xylene	95-47-6	< 0.00101	0.00101		mg/kg	11.15.19 10.54	U	1
Total Xylenes	1330-20-7	< 0.00101	0.00101		mg/kg	11.15.19 10.54	U	1
Total BTEX		< 0.00101	0.00101		mg/kg	11.15.19 10.54	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	106	%	70-130	11.15.19 10.54		
4-Bromofluorobenzene		460-00-4	119	%	70-130	11.15.19 10.54		



Certificate of Analytical Results 643271

LT Environmental, Inc., Arvada, CO

Remuda North 31 State 123 H

Sample Id:PH03Lab Sample Id:643271-003		Matrix: Date Coll	Soil ected: 11.14	.19 14.43		Date Received:1 ample Depth:2		4
Analytical Method: Chloride by E	PA 300				F	rep Method: E	300P	
Tech: MAB					9	6 Moisture:		
Analyst: MAB		Date Prep	: 11.15	5.19 07.30	E	Basis: W	/et Weight	
Seq Number: 3107636		1					-	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	48.2	10.1		mg/kg	11.15.19 10.35		1
Analytical Method:TPH by SW80Tech:DTHAnalyst:DTHSeq Number:3107743	15 Mod	Date Prep	v: 11.15	5.19 17.00	9	rep Method: S 6 Moisture: Basis: W	W8015P /et Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2		mg/kg	11.16.19 03.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2		mg/kg	11.16.19 03.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	11.16.19 03.25	U	1
Total GRO-DRO	PHC628	<50.2	50.2		mg/kg	11.16.19 03.25	U	
								1
Total TPH	PHC635	<50.2	50.2		mg/kg	11.16.19 03.25	U	1 1
Total TPH Surrogate 1-Chlorooctane	PHC635		50.2 % Recovery 109	Units %	mg/kg Limits 70-135	11.16.19 03.25 Analysis Date 11.16.19 03.25	e Flag	-

108

84-15-1

%

70-135

11.16.19 03.25

1-Chlorooctane o-Terphenyl



Certificate of Analytical Results 643271

LT Environmental, Inc., Arvada, CO

Remuda North 31 State 123 H

Sample Id:PH03Lab Sample Id:643271-003	Matrix: Soil Date Collected: 11.14.19 14.43	Date Received:11.14.19 16.44 Sample Depth: 2 ft
Analytical Method: BTEX by EPA 8021B Tech: MAB		Prep Method: SW5030B % Moisture:
Analyst: MAB Seq Number: 3107730	Date Prep: 11.14.19 19.11	Basis: Wet Weight
•		

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00101	0.00101		mg/kg	11.15.19 11.13	U	1
Toluene	108-88-3	< 0.00101	0.00101		mg/kg	11.15.19 11.13	U	1
Ethylbenzene	100-41-4	< 0.00101	0.00101		mg/kg	11.15.19 11.13	U	1
m,p-Xylenes	179601-23-1	< 0.00201	0.00201		mg/kg	11.15.19 11.13	U	1
o-Xylene	95-47-6	< 0.00101	0.00101		mg/kg	11.15.19 11.13	U	1
Total Xylenes	1330-20-7	< 0.00101	0.00101		mg/kg	11.15.19 11.13	U	1
Total BTEX		< 0.00101	0.00101		mg/kg	11.15.19 11.13	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	117	%	70-130	11.15.19 11.13		
1,4-Difluorobenzene		540-36-3	107	%	70-130	11.15.19 11.13		



Flagging Criteria

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

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Remuda North 31 State 123 H

Analytical Method:	Chloride by EPA 30	00						Pre	ep Metho	d: E30	0P	
Seq Number:	3107636			Matrix:	Solid				Date Pre	p: 11.1	5.19	
MB Sample Id:	7690444-1-BLK		LCS Sar	nple Id:	7690444-	1-BKS		LCSI	O Sample	Id: 7690)444-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD l	RPD Limi	t Units	Analysis Date	Flag
Chloride	<10.0	250	248	99	249	100	90-110	0	20	mg/kg	11.15.19 08:14	

Analytical Method:	Chloride by EPA 30)0						Pi	ep Metho	od: E30	0P	
Seq Number:	3107636			Matrix:	Soil				Date Pre	ep: 11.1	5.19	
Parent Sample Id:	643198-028		MS Sar	nple Id:	643198-02	28 S		MS	D Sample	e Id: 643	198-028 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	681	199	860	90	868	94	90-110	1	20	mg/kg	11.15.19 08:32	

Analytical Method:	Chloride by EPA 30	0						P	rep Metho	d: E30	0P	
Seq Number:	3107636			Matrix:	Soil				Date Pre	ep: 11.1	5.19	
Parent Sample Id:	643207-005		MS Sar	nple Id:	643207-00)5 S		MS	D Sample	Id: 6432	207-005 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag
Chloride	275	199	477	102	478	102	90-110	0	20	mg/kg	11.15.19 09:54	

Analytical Method: Seq Number: MB Sample Id:	TPH by S 3107677 7690450-2		od	LCS Sar	Matrix: nple Id:		1-BKS			Prep Method Date Prep SD Sample 1	o: 11.1	8015P 4.19 0450-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocart	oons (GRO)	<50.0	1000	983	98	916	92	70-135	7	35	mg/kg	11.15.19 08:24	
Diesel Range Organics	(DRO)	<50.0	1000	1090	109	1030	103	70-135	6	35	mg/kg	11.15.19 08:24	
Surrogate		MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Ree		-	limits	Units	Analysis Date	
1-Chlorooctane		106		1	34		125		7	0-135	%	11.15.19 08:24	
o-Terphenyl		114		1	20		110		7	0-135	%	11.15.19 08:24	

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



LT Environmental, Inc.

Remuda North 31 State 123 H

·	Analytical Method:TPH by SW8015 Modleq Number:3107718					Solid				Prep Methoo Date Prep		8015P 15.19	
MB Sample Id:	7690491-1	-BLK		LCS Sar	nple Id:	7690491-	1-BKS		LC	SD Sample	ld: 769	0491-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI	D RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	< 50.0	1000	840	84	884	88	70-135	5	35	mg/kg	11.15.19 17:37	
Diesel Range Organics (I	DRO)	< 50.0	1000	948	95	996	100	70-135	5	35	mg/kg	11.15.19 17:37	
Surrogate		MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Re			Limits	Units	Analysis Date	
1-Chlorooctane		93		1	01		121			70-135	%	11.15.19 17:37	
o-Terphenyl		98		1	01		107			70-135	%	11.15.19 17:37	

Analytical Method: Seq Number:	1					Solid]	Prep Methoo Date Prep		8015P 5.19	
MB Sample Id:	7690519-1	-BLK		LCS San	nple Id:	7690519-	1-BKS		LC	SD Sample	Id: 769	0519-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI	ORPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarb	ons (GRO)	<50.0	1000	896	90	952	95	70-135	6	35	mg/kg	11.16.19 02:25	
Diesel Range Organics	(DRO)	<11.5	1000	1010	101	991	99	70-135	2	35	mg/kg	11.16.19 02:25	
Surrogate		MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Ree			Limits	Units	Analysis Date	
1-Chlorooctane		99		1	22		112		,	70-135	%	11.16.19 02:25	
o-Terphenyl		103		1	05		106		,	70-135	%	11.16.19 02:25	

Analytical Method: TPH by SW	8015 Mod	Prep Method:	SW8015P	
Seq Number: 3107677	Matrix: Solid	Date Prep:	11.14.19	
	MB Sample Id: 7690450-1-BLK			
Parameter	MB Result	Ur	nits Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg	g/kg 11.15.19 08:04	

Analytical Method: Seq Number:	TPH by SW8015 Mod 3107718	Matrix: MB Sample Id:	Solid 7690491-1-BLK	Prep Method: Date Prep:			
Parameter		MB Result		τ	J nits	Analysis Date	Flag
Motor Oil Range Hydrocar	bons (MRO)	<50.0		m	ng/kg	11.15.19 17:17	

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

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LT Environmental, Inc.

Remuda North 31 State 123 H

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8	015P	
Seq Number:	3107743	Matrix:	Solid	Date Prep:	11.15	5.19	
		MB Sample Id:	7690519-1-BLK				
Parameter		MB Result		U	nits	Analysis Date	Flag
Motor Oil Range Hydrocart	oons (MRO)	<50.0		m	g/kg	11.16.19 02:25	

Analytical Method:	TPH by S	W8015 M	lod						F	Prep Method	i: SW	8015P	
Seq Number:	3107677				Matrix:	Soil				Date Prep	p: 11.1	4.19	
Parent Sample Id:	643198-03	33		MS Sar	nple Id:	643198-03	33 S		MS	SD Sample	ld: 643	198-033 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarb	ons (GRO)	< 50.3	1010	917	91	905	91	70-135	1	35	mg/kg	11.15.19 09:24	
Diesel Range Organics	(DRO)	< 50.3	1010	1040	103	1020	102	70-135	2	35	mg/kg	11.15.19 09:24	
Surrogate					AS Rec	MS Flag	MSD %Re			limits	Units	Analysis Date	
1-Chlorooctane				1	23		110		7	0-135	%	11.15.19 09:24	
o-Terphenyl				1	09		112		7	0-135	%	11.15.19 09:24	

Analytical Method: Seq Number: Parent Sample Id:	TPH by S 3107718 643273-00		lod		Matrix: nple Id:		01 S			Prep Method Date Prep SD Sample 1	p: 11.1	8015P 5.19 273-001 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ons (GRO)	< 50.0	1000	992	99	970	97	70-135	2	35	mg/kg	11.15.19 18:39	
Diesel Range Organics (DRO)	< 50.0	1000	1140	114	1110	111	70-135	3	35	mg/kg	11.15.19 18:39	
Surrogate					AS Rec	MS Flag	MSD %Re		_	Limits	Units	Analysis Date	
1-Chlorooctane				1	34		119		7	0-135	%	11.15.19 18:39	
o-Terphenyl				1	20		119		7	0-135	%	11.15.19 18:39	

Analytical Method: Seq Number: Parent Sample Id:	TPH by S 3107743 643409-0	Matrix: Soil MS Sample Id: 643409-006 S					Prep Method: SW8015P Date Prep: 11.15.19 MSD Sample Id: 643409-006 SD						
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	imits %RPD RPD Limit Units		Analysis Date	Flag	
Gasoline Range Hydrocarbons (GRO)		<50.2	1000	1120	112	963	96	70-135	15	35	mg/kg	11.16.19 03:05	
Diesel Range Organics (DRO)		614	1000	1140	53	1030	42	70-135	10	35	mg/kg	11.16.19 03:05	Х
Surrogate			MS %Rec		MS Flag	1100		D Limits g		Units	Analysis Date		
1-Chlorooctane			131		121			70-135		%	11.16.19 03:05		
o-Terphenyl		133		123			70	70-135		11.16.19 03:05			

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

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

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

Final 1.000

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



LT Environmental, Inc.

Remuda North 31 State 123 H

Analytical Method: Seq Number: MB Sample Id:	BTEX by EPA 802 3107730 7690416-1-BLK	1B	Matrix: Solid LCS Sample Id: 7690416-1-BKS				Prep Method: SW5030B Date Prep: 11.14.19 LCSD Sample Id: 7690416-1-BSD					
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPI) RPD Limit	t Units	Analysis Date	Flag
Benzene	< 0.00100	0.100	0.0885	89	0.0895	90	70-130	1	35	mg/kg	11.15.19 08:52	
Toluene	< 0.00100	0.100	0.0878	88	0.0888	89	70-130	1	35	mg/kg	11.15.19 08:52	
Ethylbenzene	< 0.00100	0.100	0.0866	87	0.0878	88	71-129	1	35	mg/kg	11.15.19 08:52	
m,p-Xylenes	< 0.00200	0.200	0.183	92	0.186	93	70-135	2	35	mg/kg	11.15.19 08:52	
o-Xylene	< 0.00100	0.100	0.0935	94	0.0949	95	71-133	1	35	mg/kg	11.15.19 08:52	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSE %Rec		-	Limits	Units	Analysis Date	
1,4-Difluorobenzene	101		1	03		103		~	70-130	%	11.15.19 08:52	
4-Bromofluorobenzene	108		1	15		114		-	70-130	%	11.15.19 08:52	

Analytical Method:	BTEX by EPA 802			Prep Method: SW5030B								
Seq Number:	3107730	Matrix: Soil					Date Prep: 11.14.19					
Parent Sample Id:	643271-001	MS San	ple Id:	643271-001 S			MSD Sample Id: 643271-001 SD					
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPE) RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00101	0.101	0.0798	79	0.0805	81	70-130	1	35	mg/kg	11.15.19 09:30	
Toluene	< 0.00101	0.101	0.0790	78	0.0798	81	70-130	1	35	mg/kg	11.15.19 09:30	
Ethylbenzene	< 0.00101	0.101	0.0775	77	0.0785	79	71-129	1	35	mg/kg	11.15.19 09:30	
m,p-Xylenes	< 0.00202	0.202	0.164	81	0.165	83	70-135	1	35	mg/kg	11.15.19 09:30	
o-Xylene	< 0.00101	0.101	0.0831	82	0.0843	85	71-133	1	35	mg/kg	11.15.19 09:30	
Surrogate			M %I	IS Rec	MS Flag	MSD %Rec			Limits	Units	Analysis Date	
1,4-Difluorobenzene			10)6		105		7	70-130	%	11.15.19 09:30	
4-Bromofluorobenzene			1	19		122		7	70-130	%	11.15.19 09:30	

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

Final 1.000

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XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc. Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 11/14/2019 04:44:00 PM Temperature Measuring device used : T-NM-007 Work Order #: 643271 Sample Receipt Checklist Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by: Elizabeth McClellan

Date: 11/14/2019

Checklist reviewed by: Jessica Kramer

Date: 11/15/2019