LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 103
Midland, Texas 79705
432.704.5178

July 26, 2019

E6HFP-190806-C-1410

Mike Bratcher
NMOCD District 2
811 South First Street
Artesia, NM 88210

RE: Request for Closure
WPX Energy Permian, Inc.
Remediation Permit Number 2RP-5437
RDX 17-25
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of WPX Energy Permian, Inc. (WPX), is pleased to present the following letter report detailing excavation and soil sampling activities at the RDX 17-25 well pad (Site) located in Unit D, Section 17, Township 26 South, Range 30 East, Eddy County, New Mexico, as depicted on Figure 1. Soil sampling activities were conducted in response to a release of approximately 6 barrels (bbls) of produced water due to the failure of a header on a produced water gathering line. The release was discovered on May 15, 2019. Approximately 0.5 bbl of produced water were recovered using a vacuum truck. The release affected approximately 4,630 square feet of the pipeline right-of-way immediately to the south of the well pad surface. The release footprint was mapped (Figure 2), and the impacted soil was excavated and transported off site for disposal. WPX reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on May 20, 2019, and was assigned Remediation Permit (RP) Number 2RP-5437 (Attachment 1). Based on the initial response efforts and the results of the excavation confirmation soil sampling, WPX is requesting no further action for this release event.

BACKGROUND

LTE determined closure criteria 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 known aquifer properties and the elevation difference between the Site and an identified water well. The nearest permitted water well with depth to water data is C 01360, located approximately 6,153 feet north of the Site. Water well C 01360 has a reported depth to water of 173 feet bgs and is approximately 23 feet higher in elevation than the Site. The closest significant watercourse to the Site is a dry arroyo located approximately 1,225 feet north of the Site. The Site is greater than 300 feet from any 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 an unstable area, 100-year floodplain, or overlying a subsurface mine. The Site is located in a medium-potential karst area. Based on these criteria, the following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); and 20,000 mg/kg chloride. Additionally, the Bureau of Land Management (BLM) has indicated a preferred chloride closure criteria of 600 mg/kg for the top 4 feet of all impacted areas on and off pad and to consider medium karst areas as unstable.

EXCAVATION AND DELINEATION SAMPLING

From May 16 to June 28, 2019, LTE was on site to oversee excavation activities within the release area. Excavation activities were directed by field screening soil samples for volatile aromatic hydrocarbons using a photo-ionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Following completion of excavation activities, 5-point composite confirmation soil samples were collected from the floor (samples labeled as "FS") and sidewalls (samples labeled as "SW") of the excavation area. Each soil sample represented at most 200 square feet. Approximately 70 cubic yards of impacted soil were removed from the excavation area and transported to the R360 Red Bluff Facility in Orla, Texas for disposal. The excavation area measured approximately 3,135 square feet in area and 0.5 to 0.7 feet bgs in depth. The excavation area and soil sample locations are depicted on Figure 3.

Additionally, on May 23, 2019, three boreholes (BH01 through BH03) were advanced to the north of the excavation area. The boreholes were advanced to provide delineation of impacts where excavation activities could not be conducted due to safety concerns associated with above-ground piping. Using a hydro vacuum truck, each borehole was advanced to approximately 1 foot bgs. Soil samples were collected from each borehole at depths of 0.5 and 1 foot bgs. The borehole locations are depicted on Figure 3. Soil Sampling Logs are included as Attachment 3.

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

ANALYTICAL RESULTS

Laboratory analytical results of delineation and excavation soil samples indicated BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 and BLM preferred chloride closure criteria of 600 mg/kg. Laboratory analytical results are presented on Figure 3 and

summarized in Table 1. The complete laboratory analytical reports are included as Attachment 4.

CONCLUSIONS

Laboratory analytical results for the delineation and excavation confirmation soil samples indicated BTEX, TPH, and chloride concentrations are compliant with NMOCD Table 1 and BLM closure criteria. Initial response efforts including immediate recovery of free-standing liquids and excavation of impacted material within the release footprint have mitigated impacts at the Site. WPX requests no further action for this release. An updated Form C-141 is included in Attachment 1.

If you have any questions or comments, please do not hesitate to contact Mr. Chris McKisson at (970) 285-9985 or cmckisson@ltenv.com.

Sincerely,

LT ENVIRONMENTAL, INC.

Chris McKisson
Project Environmental Scientist

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

cc: Jim Raley, WPX

Robert Hamlet, NMOCD
Victoria Venegas, NMOCD
Jim Amos, BLM

Attachments:

Figure 1	Site Location Map
Figure 2	Site Map
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Form C-141
Attachment 2	Photographic Log
Attachment 3	Soil Sampling Logs
Attachment 4	Laboratory Analytical Reports

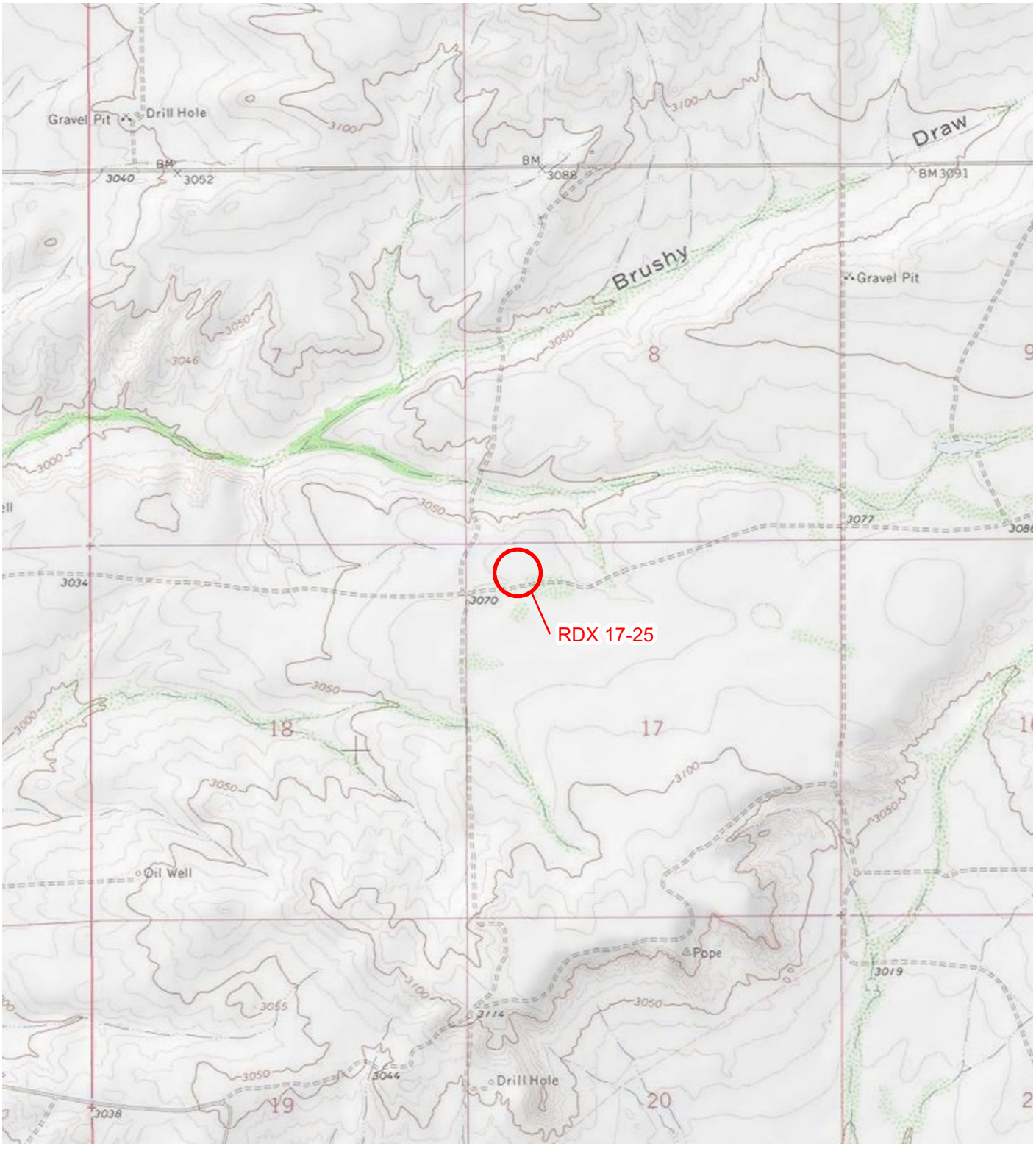


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-5437

FIGURE 1
SITE LOCATION MAP
RDX 17-25
UNIT D SEC 17 T26S R30E
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

P:\WPX\GIS\MXD\034819023_RDX 17-25\034819023_FIG01_SL_5437.mxd

LEGEND

IMAGE COURTESY OF GOOGLE EARTH 2019

✕ RELEASE LOCATION

RELEASE EXTENT (4,630.96 SQUARE FEET)

0 50 100

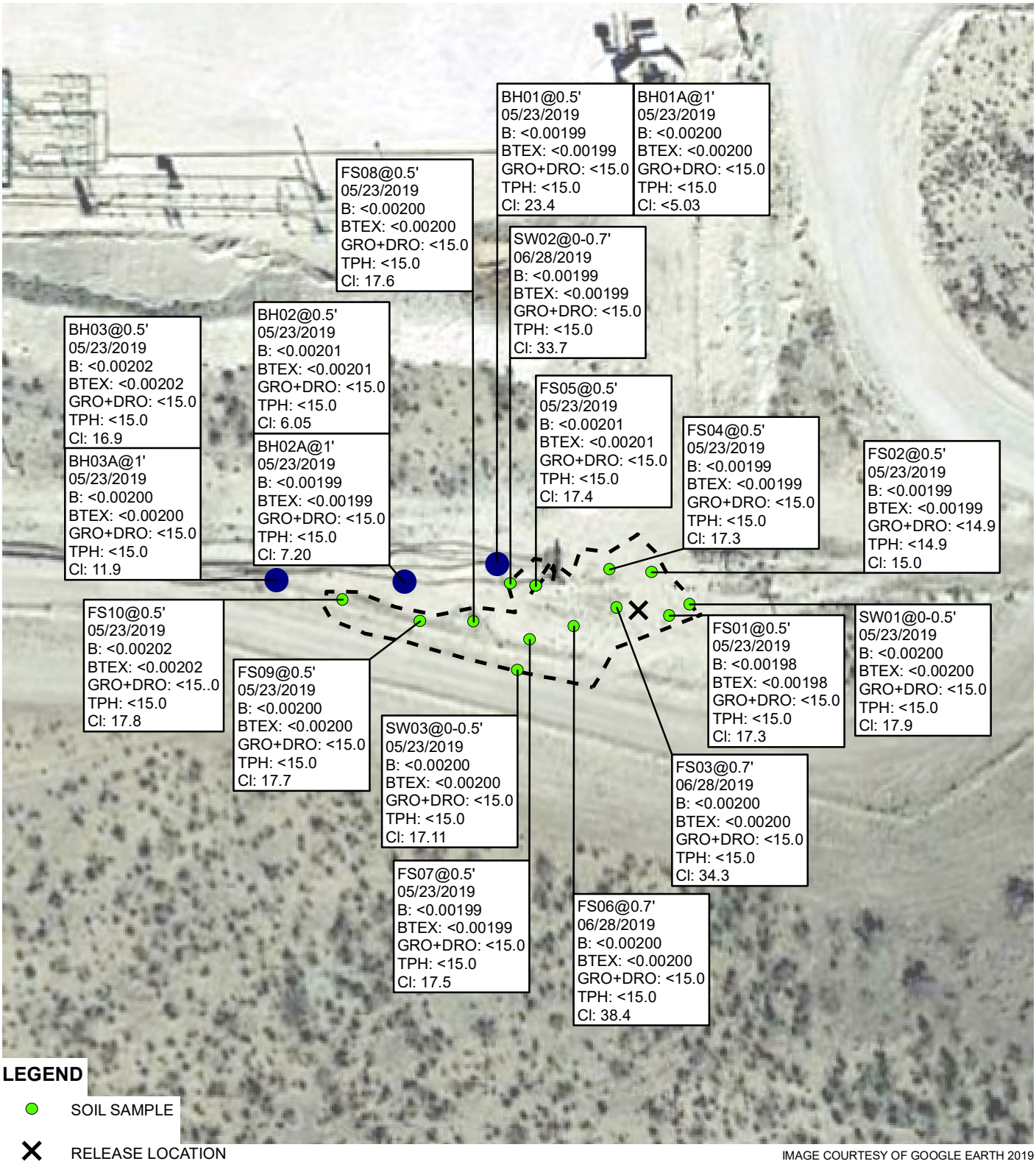
Feet

N

FIGURE 2
SITE MAP
RDX 17-25
UNIT D SEC 17 T26S R30E
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

NOTE: REMEDIATION PERMIT NUMBER 2RP-5437

P:\WPX\GIS\MXD\034819023_RDX 17-25\034819023_FIG02_SITE_5437.mxd



LEGEND

- SOIL SAMPLE
- RELEASE LOCATION
- BOREHOLE
- EXCAVATION EXTENT

IMAGE COURTESY OF GOOGLE EARTH 2019

0 50 100
Feet

N

B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NOTE: REMEDIATION PERMIT NUMBER 2RP-5437

FIGURE 3
SOIL SAMPLE LOCATIONS
RDX 17-25
UNIT D SEC 17 T26S R30E
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

P:\WPX\GIS\MXD\034819023_RDX 17-25\034819023_FIG03_SS_LOCATIONS_5437.mxd

TABLE 1
SOIL ANALYTICAL RESULTS

RDX 17-25
REMEDIATION PERMIT NUMBER 2RP-5437
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	Sum of GRO + DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
FS01	0.5	05/23/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	17.3*
FS02	0.5	05/23/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	<14.9	15.0*
FS04	0.5	05/23/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	17.3*
FS05	0.5	05/23/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	16.9*
FS07	0.5	05/23/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	16.8*
FS08	0.5	05/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	24.4*
FS09	0.5	05/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	13.7*
FS10	0.5	05/23/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	8.55*
SW01	0-0.5	05/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95*
SW03	0-0.5	05/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95*
BH01	0.5	05/23/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	23.4*
BH02	0.5	05/23/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	6.05*
BH03	0.5	05/23/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	16.9*
BH01A	1	05/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<5.03
BH02A	1	05/23/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	7.20
BH03A	1	05/23/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	11.9
FS06	0.7	06/28/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	38.4*
SW02	0-0.7	06/28/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	33.7*
FS03	0.7	06/28/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	34.3*
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**

Notes:

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
mg/kg - milligrams per kilogram
NE - not established
NMOCD - New Mexico Oil Conservation Division
DRO - diesel range organics
GRO - gasoline range organics
ORO - oil range organics
TPH - total petroleum hydrocarbons
< - indicates result is below laboratory reporting limits
Bold- indicates result exceeds the applicable regulatory standard
* - indicates sample was collected in area to be reclaimed after remediation is complete; closure criteria for chloride concentrationin the top 4 feet of soil is 600 mg/kg
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018 NMAC -New Mexico Administrative Code

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NAB1914253627
District RP	2RP-5437
Facility ID	
Application ID	pAB1914253320

Release Notification

Responsible Party

Responsible Party:	WPX Energy, Inc.	OGRID	246289
Contact Name	Jim Raley	Contact Telephone	575-689-7597
Contact email	James.Raley@wpxenergy.com	Incident # *(assigned by OCD)*	NAB1914253627
Contact mailing address	5315 Buena Vist Dr. Carlsbad, NM 88220		

Location of Release Source

Latitude 32.048184 Longitude -103.909628
(NAD 83 in decimal degrees to 5 decimal places)

Site Name:	RDX 17-25	Site Type	Well Pad
Date Release Discovered:	5/15/2019	API#	30-015-41664

Unit Letter	Section	Township	Range	County
D	17	26S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 6	Volume Recovered (bbls) .5
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☒ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Failure of header on produced water gathering line, allowed produced water to be released to pipeline ROW. Release occurred just off RDX 17-25 well pad on pipeline ROW at 32.048184, -103.909628

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914253627
District RP	2RP-5437
Facility ID	
Application ID	pAB1914253320

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

Initial Response

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

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

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

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

Printed Name: Jim Raley Title: Environmental Specialist

Signature: Jim Raley Date: 5/20/2019

email: james.raley@wpxenergy.com Telephone: 575-689-7597

OCD Only

Received by: Jennifer Bustamante Date: 5/22/2019

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	**2RP-5437**
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	**2RP-5437**
Facility ID	
Application ID	

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

Printed Name: **Jim Raley** Title: **Environmental Specialist**

Signature: Jim Raley Date: **7/26/2019**

email: **James.Raley@wpxenergy.com** Telephone: **575-689-7597**

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5437
Facility ID	
Application ID	

Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

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

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

☒ Description of remediation activities

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

Printed Name: **Jim Raley** Title: **Environmental Specialist**

Signature: Jim Raley Date: **7/26/2019**

email: **James.Raley@wpxenergy.com** Telephone: **575-689-7597**

OCD Only

Received by: Victoria Venegas Date: 08/06/2019

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

Closure Approved by: Date: 08/07/2019

Printed Name: Victoria Venegas Title: Engineering Tech. III

Release footprint – view northeast.

Project: 034819023	WPX Energy Permian, Inc. RDX 17-25	LTE Advancing Opportunity
May 23, 2018	Photographic Log	

Release footprint – view south

Project: 034819023	WPX Energy Permian, Inc. RDX 17-25	LTE Advancing Opportunity
May 23, 2019	Photographic Log	

Excavation area – view north

Project: 034819023	WPX Energy Permian, Inc. RDX 17-25	LTE Advancing Opportunity
June 28, 2019	Photographic Log	

Excavation area – view south

Project: 034819023	WPX Energy Permian, Inc. RDX 17-25	LTE Advancing Opportunity
June 28, 2019	Photographic Log	

ATTACHMENT 3: SOIL SAMPLING LOGS

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
BH 1	05/23/2019
Project Name:	**RP Number:**
RDX 17-25	2RP 5437
Logged By: L. Lambert	**Method:** hand Auger
Hole Diameter: 2.5"	**Total Depth:** 1'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long: 32.048206, -103.909864 Field Screening: ~~PID~~, chlorides

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<192	—	N	BH61	0.5'		SP-SM	sandy loam, dry, no odor
D	<192	—	N	BH61A	1'			↓@ caliche layer, dry
								AR (Auger refusal)

0 1 2 3 4 5 6 7 8 9 10 11 12

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
B1102	05/23/2019
Project Name:	**RP Number:**
RDX 17-25	2RP 5437
Logged By: L. Lambach	**Method:** hand auger
Hole Diameter: 2.5"	**Total Depth:** 1'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long: 32.048195, -103.909929 Field Screening: chloride

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<192	/	N	0.5' B1102	0		SP/SM	sandy loam, dry, nodor, fine
D	<192	/	N	B1102A	1			↓
					2			AR (Auger Refusal)
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
BH03	05/23/2019
Project Name:	**RP Number:**
RDX 17-25	2RP 5437
Logged By: L. Lambrecht	**Method:** hand Auger
Hole Diameter: 2.5"	**Total Depth:** 1'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long: 32.0482, -103.910017
Field Screening: chlorides
Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<192	✓	N	BH03	0			
D	<192	✓	N	BH03A	0.5'		SP/SM	Sandy loam/silt, dry, fines
					1		↓	↓
					2			AR (Auger Refusal)
					3			
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS

Analytical Report 625611

for

LT Environmental, Inc.

Project Manager: Chris McKisson

RDX 17-25

34819023

03-JUN-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

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

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

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

03-JUN-19

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

Reference: XENCO Report No(s): **625611**
RDX 17-25
Project Address:

Chris McKisson:

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) 625611. 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. 625611 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	05-23-19 13:20	0.5 ft	625611-001
BH01A	S	05-23-19 13:25	1 ft	625611-002
BH02	S	05-23-19 13:35	0.5 ft	625611-003
BH02A	S	05-23-19 13:40	1 ft	625611-004
BH03	S	05-23-19 13:50	0.5 ft	625611-005
BH03A	S	05-23-19 13:55	1 ft	625611-006

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090887 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 625611-001,625611-006,625611-005,625611-003.

Certificate of Analysis Summary 625611

LT Environmental, Inc., Arvada, CO

Project Name: RDX 17-25

Project Id: 34819023
Contact: Chris McKisson
Project Location:

Date Received in Lab: Tue May-28-19 07:36 am
Report Date: 03-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625611-001		625611-002		625611-003		625611-004		625611-005		625611-006	
	Field Id:	BH01		BH01A		BH02		BH02A		BH03		BH03A	
	Depth:	0.5- ft		1- ft		0.5- ft		1- ft		0.5- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-23-19 13:20		May-23-19 13:25		May-23-19 13:35		May-23-19 13:40		May-23-19 13:50		May-23-19 13:55	
BTEX by EPA 8021B	***Extracted:***	May-31-19 15:00		May-31-19 15:00		May-31-19 15:00		May-31-19 15:00		May-31-19 15:00		May-31-19 15:00	
	Analyzed:	Jun-01-19 06:44		Jun-01-19 07:03		Jun-01-19 07:22		Jun-01-19 07:41		Jun-01-19 08:00		Jun-01-19 08:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200
Toluene		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200
m,p-Xylenes		<0.00398	0.00398	<0.00400	0.00400	<0.00402	0.00402	<0.00398	0.00398	<0.00403	0.00403	<0.00399	0.00399
o-Xylene		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200
Total BTEX		<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200
Inorganic Anions by EPA 300	***Extracted:***	May-28-19 13:10		May-28-19 13:10		May-28-19 13:10		May-28-19 13:10		May-28-19 13:10		May-28-19 13:10	
	Analyzed:	May-28-19 19:15		May-28-19 20:20		May-28-19 20:27		May-28-19 20:34		May-28-19 20:42		May-28-19 20:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		23.4	4.99	<5.03	5.03	6.05	4.99	7.20	4.95	16.9	4.97	11.9	4.98
TPH by SW8015 Mod	***Extracted:***	May-28-19 15:00		May-28-19 15:00		May-28-19 15:00		May-28-19 15:00		May-28-19 15:00		May-28-19 15:00	
	Analyzed:	May-28-19 23:18		May-28-19 23:43		May-29-19 00:07		May-29-19 00:57		May-29-19 01:22		May-29-19 01:47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analytical Results 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625611-001	Date Collected:	05.23.19 13.20	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 13.10	Basis:	Wet Weight
Seq Number:	3090379				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**23.4**	4.99	mg/kg	05.28.19 19.15		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.28.19 15.00	Basis:	Wet Weight
Seq Number:	3090497				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.28.19 23.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.28.19 23.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.28.19 23.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.28.19 23.18	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.28.19 23.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	05.28.19 23.18	
o-Terphenyl	84-15-1	82	%	70-135	05.28.19 23.18	

Certificate of Analytical Results 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**BH01**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625611-001	Date Collected:	05.23.19 13.20	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.01.19 06.44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.01.19 06.44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.01.19 06.44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.01.19 06.44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.01.19 06.44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.01.19 06.44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.01.19 06.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.01.19 06.44	
4-Bromofluorobenzene	460-00-4	178	%	70-130	06.01.19 06.44	**

Certificate of Analytical Results 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625611-002	Date Collected:	05.23.19 13.25	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 13.10	Basis:	Wet Weight
Seq Number:	3090379				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.03	5.03	mg/kg	05.28.19 20.20	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.28.19 15.00	Basis:	Wet Weight
Seq Number:	3090497				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.28.19 23.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.28.19 23.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.28.19 23.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.28.19 23.43	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.28.19 23.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	05.28.19 23.43	
o-Terphenyl	84-15-1	88	%	70-135	05.28.19 23.43	

Certificate of Analytical Results 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**BH01A**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625611-002	Date Collected:	05.23.19 13.25	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.01.19 07.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.01.19 07.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.01.19 07.03	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.01.19 07.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.01.19 07.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.01.19 07.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.01.19 07.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.01.19 07.03	
4-Bromofluorobenzene	460-00-4	115	%	70-130	06.01.19 07.03	

Certificate of Analytical Results 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625611-003	Date Collected:	05.23.19 13.35	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 13.10	Basis:	Wet Weight
Seq Number:	3090379				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.05**	4.99	mg/kg	05.28.19 20.27		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.28.19 15.00	Basis:	Wet Weight
Seq Number:	3090497				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 00.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 00.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 00.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 00.07	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 00.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	05.29.19 00.07	
o-Terphenyl	84-15-1	84	%	70-135	05.29.19 00.07	

Certificate of Analytical Results 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**BH02**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625611-003	Date Collected:	05.23.19 13.35	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.01.19 07.22	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.01.19 07.22	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.01.19 07.22	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.01.19 07.22	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.01.19 07.22	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.01.19 07.22	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.01.19 07.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	137	%	70-130	06.01.19 07.22	**
1,4-Difluorobenzene	540-36-3	88	%	70-130	06.01.19 07.22	

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id: **BH02A** Matrix: Soil Date Received:05.28.19 07.36
Lab Sample Id: 625611-004 Date Collected: 05.23.19 13.40 Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.28.19 13.10 Basis: Wet Weight
Seq Number: 3090379

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.20**	4.95	mg/kg	05.28.19 20.34		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.28.19 15.00 Basis: Wet Weight
Seq Number: 3090497

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 00.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 00.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 00.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 00.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 00.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	05.29.19 00.57	
o-Terphenyl	84-15-1	92	%	70-135	05.29.19 00.57	

Certificate of Analytical Results 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**BH02A**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625611-004	Date Collected:	05.23.19 13.40	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.01.19 07.41	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.01.19 07.41	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.01.19 07.41	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.01.19 07.41	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.01.19 07.41	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.01.19 07.41	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.01.19 07.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121	%	70-130	06.01.19 07.41	
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.01.19 07.41	

Certificate of Analytical Results 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625611-005	Date Collected:	05.23.19 13.50	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 13.10	Basis:	Wet Weight
Seq Number:	3090379				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**16.9**	4.97	mg/kg	05.28.19 20.42		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.28.19 15.00	Basis:	Wet Weight
Seq Number:	3090497				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 01.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 01.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 01.22	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 01.22	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 01.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	05.29.19 01.22	
o-Terphenyl	84-15-1	96	%	70-135	05.29.19 01.22	

Certificate of Analytical Results 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**BH03**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625611-005	Date Collected:	05.23.19 13.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.01.19 08.00	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.01.19 08.00	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.01.19 08.00	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.01.19 08.00	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.01.19 08.00	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.01.19 08.00	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.01.19 08.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	90	%	70-130	06.01.19 08.00	
4-Bromofluorobenzene	460-00-4	141	%	70-130	06.01.19 08.00	**

Certificate of Analytical Results 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625611-006	Date Collected:	05.23.19 13.55	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 13.10	Basis:	Wet Weight
Seq Number:	3090379				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.9**	4.98	mg/kg	05.28.19 20.49		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.28.19 15.00	Basis:	Wet Weight
Seq Number:	3090497				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.29.19 01.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.29.19 01.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.29.19 01.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.29.19 01.47	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.29.19 01.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	05.29.19 01.47	
o-Terphenyl	84-15-1	87	%	70-135	05.29.19 01.47	

Certificate of Analytical Results 625611

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**BH03A**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625611-006	Date Collected:	05.23.19 13.55	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.01.19 08.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.01.19 08.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.01.19 08.19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.01.19 08.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.01.19 08.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.01.19 08.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.01.19 08.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	06.01.19 08.19	
4-Bromofluorobenzene	460-00-4	136	%	70-130	06.01.19 08.19	**

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 625611

LT Environmental, Inc.

RDX 17-25

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3090379 Matrix: Solid Date Prep: 05.28.19
MB Sample Id: 7678648-1-BLK LCS Sample Id: 7678648-1-BKS LCSD Sample Id: 7678648-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	237	95	238	95	90-110	0	20	mg/kg	05.28.19 17:19	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3090379 Matrix: Soil Date Prep: 05.28.19
Parent Sample Id: 625611-001 MS Sample Id: 625611-001 S MSD Sample Id: 625611-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	23.4	250	257	93	259	94	90-110	1	20	mg/kg	05.28.19 19:22	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3090379 Matrix: Soil Date Prep: 05.28.19
Parent Sample Id: 625616-008 MS Sample Id: 625616-008 S MSD Sample Id: 625616-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	371	251	595	89	594	89	90-110	0	20	mg/kg	05.28.19 17:40	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3090497 Matrix: Solid Date Prep: 05.28.19
MB Sample Id: 7678780-1-BLK LCS Sample Id: 7678780-1-BKS LCSD Sample Id: 7678780-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	945	95	961	96	70-135	2	20	mg/kg	05.28.19 18:45	
Diesel Range Organics (DRO)	<8.13	1000	902	90	924	92	70-135	2	20	mg/kg	05.28.19 18:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		93		99		70-135	%	05.28.19 18:45
o-Terphenyl	104		97		104		70-135	%	05.28.19 18:45

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

QC Summary 625611

LT Environmental, Inc.

RDX 17-25

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3090497 Matrix: Soil Date Prep: 05.28.19
Parent Sample Id: 625610-001 MS Sample Id: 625610-001 S MSD Sample Id: 625610-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	910	91	874	88	70-135	4	20	mg/kg	05.28.19 19:59	
Diesel Range Organics (DRO)	<8.11	998	843	84	855	86	70-135	1	20	mg/kg	05.28.19 19:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		82		70-135	%	05.28.19 19:59
o-Terphenyl	76		84		70-135	%	05.28.19 19:59

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3090887 Matrix: Solid Date Prep: 05.31.19
MB Sample Id: 7679055-1-BLK LCS Sample Id: 7679055-1-BKS LCSD Sample Id: 7679055-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0929	94	0.0911	91	70-130	2	35	mg/kg	06.01.19 03:55	
Toluene	<0.00198	0.0992	0.0982	99	0.0974	97	70-130	1	35	mg/kg	06.01.19 03:55	
Ethylbenzene	<0.00198	0.0992	0.110	111	0.109	109	70-130	1	35	mg/kg	06.01.19 03:55	
m,p-Xylenes	<0.00397	0.198	0.232	117	0.232	115	70-130	0	35	mg/kg	06.01.19 03:55	
o-Xylene	<0.00198	0.0992	0.112	113	0.113	113	70-130	1	35	mg/kg	06.01.19 03:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		88		88		70-130	%	06.01.19 03:55
4-Bromofluorobenzene	106		103		106		70-130	%	06.01.19 03:55

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3090887 Matrix: Soil Date Prep: 05.31.19
Parent Sample Id: 625484-006 MS Sample Id: 625484-006 S MSD Sample Id: 625484-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0862	86	0.0880	88	70-130	2	35	mg/kg	06.01.19 04:33	
Toluene	<0.00200	0.100	0.0912	91	0.0942	94	70-130	3	35	mg/kg	06.01.19 04:33	
Ethylbenzene	<0.00200	0.100	0.102	102	0.105	105	70-130	3	35	mg/kg	06.01.19 04:33	
m,p-Xylenes	<0.00400	0.200	0.217	109	0.223	112	70-130	3	35	mg/kg	06.01.19 04:33	
o-Xylene	<0.00200	0.100	0.106	106	0.108	108	70-130	2	35	mg/kg	06.01.19 04:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		89		70-130	%	06.01.19 04:33
4-Bromofluorobenzene	107		108		70-130	%	06.01.19 04:33

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

Chain of Custody

Work Order No: 625611

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com Page 1 of 1

Project Manager:	Chris McKisson	Bill to: (if different)	Chris McKisson
Company Name:	LT Environmental, Inc., Permian office	Company Name:	LT Environmental
Address:	820 Megan Avenue, Unit B	Address:	
City, State ZIP:	Rifle, CO 81650	City, State ZIP:	
Phone:	(970)285-9985 Email:		llaumbach@ltenv.com, cmckisson@ltenv.com, asmith@ltenv.com

Work Order Comments

Program: UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	RDX 17-25	Turn Around	
Project Number:	34819023	Routine	☒
P.O. Number:	2RP-5437	Rush:	
Sampler's Name:	Lynda Laumbach	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.5/0.3	Thermometer ID	VE	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes (No) N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
BH01	S	05/23/19	13:20	0.5'	1	X	X	X
BH01A	S		13:25	1'	1			
BH02	S		13:35	0.5'	1			
BH02A	S		13:40	1'	1			
BH03	S		13:50	0.5'	1			
BH03A	S		13:55	1'	1			

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		5/24/19 11:00	2		5/24/19 0730
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Final 1.000

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 05/28/2019 07:36:00 AM

Work Order #: 625611

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 05/28/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/28/2019
Jessica Kramer

Analytical Report 625612

for

LT Environmental, Inc.

Project Manager: Chris McKisson

RDX 17-25

34819023

04-JUN-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

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

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

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

04-JUN-19

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

Reference: XENCO Report No(s): **625612**
RDX 17-25
Project Address:

Chris McKisson:

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) 625612. 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. 625612 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 625612

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	05-23-19 11:50	0.5 ft	625612-001
FS02	S	05-23-19 11:55	0.5 ft	625612-002
FS03	S	05-23-19 12:00	0.5 ft	625612-003
FS04	S	05-23-19 12:10	0.5 ft	625612-004
FS05	S	05-23-19 12:15	0.5 ft	625612-005
FS07	S	05-23-19 12:25	0.5 ft	625612-006
FS08	S	05-23-19 12:30	0.5 ft	625612-007
FS09	S	05-23-19 12:40	0.5 ft	625612-008
FS10	S	05-23-19 12:45	0.5 ft	625612-009
SW01	S	05-23-19 12:50	0 - 0.5 ft	625612-010
SW02	S	05-23-19 13:00	0 - 0.5 ft	625612-011
SW03	S	05-23-19 13:10	0 - 0.5 ft	625612-012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090887 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 625612-001,625612-002,625612-003,625612-011,625612-005,625612-006,625612-009,625612-004.

Batch: LBA-3090888 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 625612-012 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Toluene, m,p-Xylenes recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.
Ethylbenzene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 625612-012.
The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 625612

LT Environmental, Inc., Arvada, CO

Project Name: RDX 17-25

Project Id: 34819023
Contact: Chris McKisson
Project Location:

Date Received in Lab: Tue May-28-19 07:36 am
Report Date: 04-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625612-001		625612-002		625612-003		625612-004		625612-005		625612-006	
	Field Id:	FS01		FS02		FS03		FS04		FS05		FS07	
	Depth:	0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-23-19 11:50		May-23-19 11:55		May-23-19 12:00		May-23-19 12:10		May-23-19 12:15		May-23-19 12:25	
BTEX by EPA 8021B	***Extracted:***	May-31-19 15:00		May-31-19 15:00		May-31-19 15:00		May-31-19 15:00		May-31-19 15:00		May-31-19 15:00	
	Analyzed:	Jun-01-19 08:38		Jun-01-19 09:52		Jun-01-19 10:11		Jun-01-19 10:30		Jun-01-19 10:49		Jun-01-19 11:08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
Toluene		<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
Ethylbenzene		<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
m,p-Xylenes		<0.00397	0.00397	<0.00398	0.00398	<0.00402	0.00402	<0.00398	0.00398	<0.00402	0.00402	<0.00398	0.00398
o-Xylene		<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
Total Xylenes		<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
Total BTEX		<0.00198	0.00198	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199	<0.00201	0.00201	<0.00199	0.00199
Inorganic Anions by EPA 300	***Extracted:***	May-28-19 14:35		May-28-19 14:35		May-28-19 14:35		May-28-19 14:35		May-28-19 14:35		May-28-19 14:35	
	Analyzed:	May-28-19 22:41		May-28-19 23:03		May-28-19 23:10		May-28-19 23:18		May-28-19 23:25		May-28-19 23:47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		17.3	4.99	15.0	5.02	1050	49.6	17.3	5.00	16.9	5.01	16.8	4.99
TPH by SW8015 Mod	***Extracted:***	May-31-19 10:00		May-31-19 10:00		May-31-19 10:00		May-31-19 10:00		May-31-19 10:00		May-31-19 10:00	
	Analyzed:	May-31-19 13:31		May-31-19 14:30		May-31-19 14:50		May-31-19 15:10		May-31-19 15:29		May-31-19 15:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 625612

LT Environmental, Inc., Arvada, CO

Project Name: RDX 17-25

Project Id: 34819023
Contact: Chris McKisson
Project Location:

Date Received in Lab: Tue May-28-19 07:36 am
Report Date: 04-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625612-007		625612-008		625612-009		625612-010		625612-011		625612-012	
	Field Id:	FS08		FS09		FS10		SW01		SW02		SW03	
	Depth:	0.5- ft		0.5- ft		0.5- ft		0-0.5 ft		0-0.5 ft		0-0.5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-23-19 12:30		May-23-19 12:40		May-23-19 12:45		May-23-19 12:50		May-23-19 13:00		May-23-19 13:10	
BTEX by EPA 8021B	***Extracted:***	May-31-19 15:00		May-31-19 15:00		May-31-19 15:00		May-31-19 15:00		May-31-19 15:00		May-31-19 16:45	
	Analyzed:	Jun-01-19 11:27		Jun-01-19 11:46		Jun-01-19 12:05		Jun-01-19 12:24		Jun-01-19 12:43		Jun-01-19 15:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00399	0.00399	<0.00403	0.00403	<0.00401	0.00401	<0.00399	0.00399	<0.00401	0.00401
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Inorganic Anions by EPA 300	***Extracted:***	May-28-19 14:35		May-28-19 14:35		May-28-19 14:35		May-28-19 14:35		May-28-19 14:35		May-28-19 14:35	
	Analyzed:	May-28-19 23:54		May-29-19 00:01		May-29-19 00:08		May-29-19 00:16		May-29-19 00:45		May-29-19 00:23	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		24.4	5.05	13.7	5.03	8.55	4.96	<4.95	4.95	601	25.0	<4.95	4.95
TPH by SW8015 Mod	***Extracted:***	May-31-19 10:00		May-31-19 10:00		May-31-19 10:00		May-31-19 10:00		May-31-19 10:00		May-31-19 10:00	
	Analyzed:	May-31-19 16:08		May-31-19 16:28		May-31-19 16:48		May-31-19 17:08		May-31-19 17:47		May-31-19 18:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total GRO-DRO		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analytical Results 625612

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-001	Date Collected:	05.23.19 11.50	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 14.35	Basis:	Wet Weight
Seq Number:	3090380				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**17.3**	4.99	mg/kg	05.28.19 22.41		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.31.19 10.00	Basis:	Wet Weight
Seq Number:	3090914				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 13.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 13.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 13.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 13.31	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 13.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.31.19 13.31	
o-Terphenyl	84-15-1	89	%	70-135	05.31.19 13.31	

Certificate of Analytical Results 625612

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-001	Date Collected:	05.23.19 11.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.01.19 08.38	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.01.19 08.38	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.01.19 08.38	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.01.19 08.38	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.01.19 08.38	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.01.19 08.38	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.01.19 08.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	137	%	70-130	06.01.19 08.38	**
1,4-Difluorobenzene	540-36-3	89	%	70-130	06.01.19 08.38	

Certificate of Analytical Results 625612

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-002	Date Collected:	05.23.19 11.55	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 14.35	Basis:	Wet Weight
Seq Number:	3090380				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.0**	5.02	mg/kg	05.28.19 23.03		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.31.19 10.00	Basis:	Wet Weight
Seq Number:	3090914				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	05.31.19 14.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	05.31.19 14.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	05.31.19 14.30	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.31.19 14.30	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	05.31.19 14.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	05.31.19 14.30	
o-Terphenyl	84-15-1	84	%	70-135	05.31.19 14.30	

Certificate of Analytical Results 625612

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-002	Date Collected:	05.23.19 11.55	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.01.19 09.52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.01.19 09.52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.01.19 09.52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.01.19 09.52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.01.19 09.52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.01.19 09.52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.01.19 09.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	133	%	70-130	06.01.19 09.52	**
1,4-Difluorobenzene	540-36-3	87	%	70-130	06.01.19 09.52	

Certificate of Analytical Results 625612

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-003	Date Collected:	05.23.19 12.00	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 14.35	Basis:	Wet Weight
Seq Number:	3090380				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1050**	49.6	mg/kg	05.28.19 23.10		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.31.19 10.00	Basis:	Wet Weight
Seq Number:	3090914				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 14.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 14.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 14.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 14.50	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 14.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.31.19 14.50	
o-Terphenyl	84-15-1	88	%	70-135	05.31.19 14.50	

Certificate of Analytical Results 625612

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-003	Date Collected:	05.23.19 12.00	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.01.19 10.11	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.01.19 10.11	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.01.19 10.11	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.01.19 10.11	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.01.19 10.11	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.01.19 10.11	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.01.19 10.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	137	%	70-130	06.01.19 10.11	**
1,4-Difluorobenzene	540-36-3	89	%	70-130	06.01.19 10.11	

Certificate of Analytical Results 625612

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-004	Date Collected:	05.23.19 12.10	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 14.35	Basis:	Wet Weight
Seq Number:	3090380				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**17.3**	5.00	mg/kg	05.28.19 23.18		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.31.19 10.00	Basis:	Wet Weight
Seq Number:	3090914				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 15.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 15.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 15.10	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 15.10	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 15.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.31.19 15.10	
o-Terphenyl	84-15-1	85	%	70-135	05.31.19 15.10	

Certificate of Analytical Results 625612

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-004	Date Collected:	05.23.19 12.10	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.01.19 10.30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.01.19 10.30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.01.19 10.30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.01.19 10.30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.01.19 10.30	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.01.19 10.30	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.01.19 10.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	132	%	70-130	06.01.19 10.30	**
1,4-Difluorobenzene	540-36-3	85	%	70-130	06.01.19 10.30	

LT Environmental, Inc., Arvada, CO

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Sample Id: **FS05** Matrix: Soil Date Received:05.28.19 07.36
Lab Sample Id: 625612-005 Date Collected: 05.23.19 12.15 Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.28.19 14.35 Basis: Wet Weight
Seq Number: 3090380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**16.9**	5.01	mg/kg	05.28.19 23.25		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.31.19 10.00 Basis: Wet Weight
Seq Number: 3090914

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 15.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 15.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 15.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 15.29	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 15.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	05.31.19 15.29	
o-Terphenyl	84-15-1	87	%	70-135	05.31.19 15.29	

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LT Environmental, Inc., Arvada, CO

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Sample Id:	**FS05**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-005	Date Collected:	05.23.19 12.15	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.01.19 10.49	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.01.19 10.49	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.01.19 10.49	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.01.19 10.49	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.01.19 10.49	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.01.19 10.49	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.01.19 10.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	131	%	70-130	06.01.19 10.49	**
1,4-Difluorobenzene	540-36-3	88	%	70-130	06.01.19 10.49	

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Sample Id: **FS07** Matrix: Soil Date Received:05.28.19 07.36
Lab Sample Id: 625612-006 Date Collected: 05.23.19 12.25 Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.28.19 14.35 Basis: Wet Weight
Seq Number: 3090380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**16.8**	4.99	mg/kg	05.28.19 23.47		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.31.19 10.00 Basis: Wet Weight
Seq Number: 3090914

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 15.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 15.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 15.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 15.49	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 15.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.31.19 15.49	
o-Terphenyl	84-15-1	85	%	70-135	05.31.19 15.49	

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Sample Id:	**FS07**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-006	Date Collected:	05.23.19 12.25	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.01.19 11.08	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.01.19 11.08	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.01.19 11.08	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.01.19 11.08	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.01.19 11.08	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.01.19 11.08	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.01.19 11.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	135	%	70-130	06.01.19 11.08	**
1,4-Difluorobenzene	540-36-3	89	%	70-130	06.01.19 11.08	

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Sample Id:	**FS08**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-007	Date Collected:	05.23.19 12.30	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 14.35	Basis:	Wet Weight
Seq Number:	3090380				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**24.4**	5.05	mg/kg	05.28.19 23.54		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.31.19 10.00	Basis:	Wet Weight
Seq Number:	3090914				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 16.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 16.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 16.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 16.08	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 16.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.31.19 16.08	
o-Terphenyl	84-15-1	87	%	70-135	05.31.19 16.08	

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Sample Id:	**FS08**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-007	Date Collected:	05.23.19 12.30	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.01.19 11.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.01.19 11.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.01.19 11.27	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.01.19 11.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.01.19 11.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.01.19 11.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.01.19 11.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120	%	70-130	06.01.19 11.27	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.01.19 11.27	

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Sample Id:	**FS09**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-008	Date Collected:	05.23.19 12.40	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 14.35	Basis:	Wet Weight
Seq Number:	3090380				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.7**	5.03	mg/kg	05.29.19 00.01		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.31.19 10.00	Basis:	Wet Weight
Seq Number:	3090914				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 16.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 16.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 16.28	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 16.28	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 16.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	05.31.19 16.28	
o-Terphenyl	84-15-1	98	%	70-135	05.31.19 16.28	

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Sample Id:	**FS09**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-008	Date Collected:	05.23.19 12.40	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.01.19 11.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.01.19 11.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.01.19 11.46	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.01.19 11.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.01.19 11.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.01.19 11.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.01.19 11.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.01.19 11.46	
4-Bromofluorobenzene	460-00-4	130	%	70-130	06.01.19 11.46	

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Sample Id:	**FS10**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-009	Date Collected:	05.23.19 12.45	Sample Depth:	0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 14.35	Basis:	Wet Weight
Seq Number:	3090380				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8.55**	4.96	mg/kg	05.29.19 00.08		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.31.19 10.00	Basis:	Wet Weight
Seq Number:	3090914				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 16.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 16.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 16.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 16.48	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 16.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.31.19 16.48	
o-Terphenyl	84-15-1	90	%	70-135	05.31.19 16.48	

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Sample Id:	**FS10**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-009	Date Collected:	05.23.19 12.45	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.01.19 12.05	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.01.19 12.05	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.01.19 12.05	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.01.19 12.05	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.01.19 12.05	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.01.19 12.05	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.01.19 12.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	90	%	70-130	06.01.19 12.05	
4-Bromofluorobenzene	460-00-4	138	%	70-130	06.01.19 12.05	**

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Sample Id:	**SW01**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-010	Date Collected:	05.23.19 12.50	Sample Depth:	0 - 0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 14.35	Basis:	Wet Weight
Seq Number:	3090380				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	05.29.19 00.16	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.31.19 10.00	Basis:	Wet Weight
Seq Number:	3090914				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 17.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 17.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 17.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 17.08	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 17.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.31.19 17.08	
o-Terphenyl	84-15-1	88	%	70-135	05.31.19 17.08	

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Sample Id:	**SW01**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-010	Date Collected:	05.23.19 12.50	Sample Depth:	0 - 0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.01.19 12.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.01.19 12.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.01.19 12.24	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.01.19 12.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.01.19 12.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.01.19 12.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.01.19 12.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	129	%	70-130	06.01.19 12.24	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.01.19 12.24	

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Sample Id:	**SW02**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-011	Date Collected:	05.23.19 13.00	Sample Depth:	0 - 0.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	05.28.19 14.35	Basis:	Wet Weight
Seq Number:	3090380				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**601**	25.0	mg/kg	05.29.19 00.45		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.31.19 10.00	Basis:	Wet Weight
Seq Number:	3090914				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 17.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 17.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 17.47	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 17.47	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 17.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	05.31.19 17.47	
o-Terphenyl	84-15-1	87	%	70-135	05.31.19 17.47	

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Sample Id:	**SW02**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-011	Date Collected:	05.23.19 13.00	Sample Depth:	0 - 0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 15.00	Basis:	Wet Weight
Seq Number:	3090887				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.01.19 12.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.01.19 12.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.01.19 12.43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.01.19 12.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.01.19 12.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.01.19 12.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.01.19 12.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	93	%	70-130	06.01.19 12.43	
4-Bromofluorobenzene	460-00-4	132	%	70-130	06.01.19 12.43	**

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RDX 17-25

Sample Id: **SW03** Matrix: Soil Date Received:05.28.19 07.36
Lab Sample Id: 625612-012 Date Collected: 05.23.19 13.10 Sample Depth: 0 - 0.5 ft

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.28.19 14.35 Basis: Wet Weight
Seq Number: 3090380

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	05.29.19 00.23	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.31.19 10.00 Basis: Wet Weight
Seq Number: 3090914

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 18.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 18.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 18.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 18.07	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 18.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.31.19 18.07	
o-Terphenyl	84-15-1	88	%	70-135	05.31.19 18.07	

Certificate of Analytical Results 625612

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	05.28.19 07.36
Lab Sample Id:	625612-012	Date Collected:	05.23.19 13.10	Sample Depth:	0 - 0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	05.31.19 16.45	Basis:	Wet Weight
Seq Number:	3090888				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.01.19 15.32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.01.19 15.32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.01.19 15.32	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.01.19 15.32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.01.19 15.32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.01.19 15.32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.01.19 15.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.01.19 15.32	
4-Bromofluorobenzene	460-00-4	124	%	70-130	06.01.19 15.32	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 625612

LT Environmental, Inc.

RDX 17-25

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3090380 Matrix: Solid Date Prep: 05.28.19
MB Sample Id: 7678674-1-BLK LCS Sample Id: 7678674-1-BKS LCSD Sample Id: 7678674-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	240	96	240	96	90-110	0	20	mg/kg	05.28.19 22:27	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3090380 Matrix: Soil Date Prep: 05.28.19
Parent Sample Id: 625612-001 MS Sample Id: 625612-001 S MSD Sample Id: 625612-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	17.3	250	260	97	260	97	90-110	0	20	mg/kg	05.28.19 22:49	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3090380 Matrix: Soil Date Prep: 05.28.19
Parent Sample Id: 625612-012 MS Sample Id: 625612-012 S MSD Sample Id: 625612-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.44	248	249	99	249	99	90-110	0	20	mg/kg	05.29.19 00:30	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3090914 Matrix: Solid Date Prep: 05.31.19
MB Sample Id: 7679062-1-BLK LCS Sample Id: 7679062-1-BKS LCSD Sample Id: 7679062-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1150	115	1180	118	70-135	3	20	mg/kg	05.31.19 12:51	
Diesel Range Organics (DRO)	<8.13	1000	1080	108	1120	112	70-135	4	20	mg/kg	05.31.19 12:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		121		126		70-135	%	05.31.19 12:51
o-Terphenyl	97		121		108		70-135	%	05.31.19 12:51

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

QC Summary 625612

LT Environmental, Inc.

RDX 17-25

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3090914 Matrix: Soil Date Prep: 05.31.19
Parent Sample Id: 625612-001 MS Sample Id: 625612-001 S MSD Sample Id: 625612-001 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)	8.94	999	1040	103	1040	103	70-135	0	20	mg/kg	05.31.19 13:50	
Diesel Range Organics (DRO)	<8.12	999	1010	101	1020	102	70-135	1	20	mg/kg	05.31.19 13:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		119		70-135	%	05.31.19 13:50
o-Terphenyl	118		106		70-135	%	05.31.19 13:50

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3090887 Matrix: Solid Date Prep: 05.31.19
MB Sample Id: 7679055-1-BLK LCS Sample Id: 7679055-1-BKS LCSD Sample Id: 7679055-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0929	94	0.0911	91	70-130	2	35	mg/kg	06.01.19 03:55	
Toluene	<0.00198	0.0992	0.0982	99	0.0974	97	70-130	1	35	mg/kg	06.01.19 03:55	
Ethylbenzene	<0.00198	0.0992	0.110	111	0.109	109	70-130	1	35	mg/kg	06.01.19 03:55	
m,p-Xylenes	<0.00397	0.198	0.232	117	0.232	115	70-130	0	35	mg/kg	06.01.19 03:55	
o-Xylene	<0.00198	0.0992	0.112	113	0.113	113	70-130	1	35	mg/kg	06.01.19 03:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		88		88		70-130	%	06.01.19 03:55
4-Bromofluorobenzene	106		103		106		70-130	%	06.01.19 03:55

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3090888 Matrix: Solid Date Prep: 05.31.19
MB Sample Id: 7679056-1-BLK LCS Sample Id: 7679056-1-BKS LCSD Sample Id: 7679056-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0738	74	0.0918	91	70-130	22	35	mg/kg	06.01.19 13:39	
Toluene	<0.00200	0.0998	0.0765	77	0.0931	92	70-130	20	35	mg/kg	06.01.19 13:39	
Ethylbenzene	<0.00200	0.0998	0.0842	84	0.102	101	70-130	19	35	mg/kg	06.01.19 13:39	
m,p-Xylenes	<0.00399	0.200	0.178	89	0.216	107	70-130	19	35	mg/kg	06.01.19 13:39	
o-Xylene	<0.00200	0.0998	0.0886	89	0.105	104	70-130	17	35	mg/kg	06.01.19 13:39	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		91		90		70-130	%	06.01.19 13:39
4-Bromofluorobenzene	103		103		99		70-130	%	06.01.19 13:39

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

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

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

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

QC Summary 625612

LT Environmental, Inc.

RDX 17-25

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

Seq Number: 3090887 Matrix: Soil Date Prep: 05.31.19

Parent Sample Id: 625484-006 MS Sample Id: 625484-006 S MSD Sample Id: 625484-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0862	86	0.0880	88	70-130	2	35	mg/kg	06.01.19 04:33	
Toluene	<0.00200	0.100	0.0912	91	0.0942	94	70-130	3	35	mg/kg	06.01.19 04:33	
Ethylbenzene	<0.00200	0.100	0.102	102	0.105	105	70-130	3	35	mg/kg	06.01.19 04:33	
m,p-Xylenes	<0.00400	0.200	0.217	109	0.223	112	70-130	3	35	mg/kg	06.01.19 04:33	
o-Xylene	<0.00200	0.100	0.106	106	0.108	108	70-130	2	35	mg/kg	06.01.19 04:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		89		70-130	%	06.01.19 04:33
4-Bromofluorobenzene	107		108		70-130	%	06.01.19 04:33

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

Seq Number: 3090888 Matrix: Soil Date Prep: 05.31.19

Parent Sample Id: 625612-012 MS Sample Id: 625612-012 S MSD Sample Id: 625612-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0888	90	0.0819	81	70-130	8	35	mg/kg	06.01.19 14:17	
Toluene	<0.00198	0.0992	0.0532	54	0.0492	49	70-130	8	35	mg/kg	06.01.19 14:17	X
Ethylbenzene	<0.00198	0.0992	0.0699	70	0.0659	65	70-130	6	35	mg/kg	06.01.19 14:17	X
m,p-Xylenes	<0.00397	0.198	0.128	65	0.123	61	70-130	4	35	mg/kg	06.01.19 14:17	X
o-Xylene	<0.00198	0.0992	0.0881	89	0.0867	86	70-130	2	35	mg/kg	06.01.19 14:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		94		70-130	%	06.01.19 14:17
4-Bromofluorobenzene	104		104		70-130	%	06.01.19 14:17

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

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

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

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

Chain of Custody

Work Order No: 605612

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Chris McKisson	Bill to: (if different)	Chris McKisson
Company Name:	LT Environmental, Inc., Permian office	Company Name:	LT Environmental
Address:	820 Megan Avenue, Unit B	Address:	
City, State ZIP:	Rifle, CO 81650	City, State ZIP:	
Phone:	(970)285-9985	Email:	llaumbach@ltenv.com, cmckisson@ltenv.com, asmith@ltenv.com

Work Order Comments

Program: UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ RP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	RDX 17-25	Turn Around	
Project Number:	34819023	Routine	X
P.O. Number:	2RP-5437	Rush:	
Sampler's Name:	Lynda Laumbach	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.5/0.3	Thermometer ID	DE	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
FS01	S	05/23/2019	11:50	0.5'	1	X	X	X
FS02			11:55		1			
FS03			12:00		1			
FS04			12:10		1			
FS05			12:15		1			
~~FS06~~			~~12:20~~		1			
FS07			12:25		1			
FS08			12:30		1			
FS09			12:40		1			
FS10			12:45		1			

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

cc 5/24/19 Sample not received (client was notified)

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		5/24/19 11:00	2		5/24/19 0734
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

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Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) www.xenco.com Page 2 of 2

Work Order No: 625612

Project Manager:	Chris McKisson	Bill to: (if different)	Chris McKisson
Company Name:	LT Environmental, Inc., Permian office	Company Name:	LT Environmental
Address:	820 Megan Avenue, Unit B	Address:	
City, State ZIP:	Rifle, CO 81650	City, State ZIP:	
Phone:	(970)285-9985 Email:		llaumbach@ltenv.com, cmckisson@ltenv.com, asmith@ltenv.com

Work Order Comments

Program: UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	RDX 17-25	Turn Around	
Project Number:	34819023	Routine	X
P.O. Number:	2RP-5437	Rush:	
Sampler's Name:	Lynda Laumbach	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.5 | 0.3	Thermometer ID	R8	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes (No) N/A	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
SW01	S	05/23/19	12:50	0-0.5'	1	X	X	X
SW02	S		13:00		1	X	X	X
SW03	S		13:10		1	X	X	X

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Cosha P	5/24/19 11:00	2		
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Final 1.000

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 05/28/2019 07:36:00 AM

Work Order #: 625612

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 05/28/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/28/2019
Jessica Kramer

Certificate of Analysis Summary 629498

LT Environmental, Inc., Arvada, CO

Project Name: RDX 17-25

Project Id: 034819023
Contact: Chris McKisson
Project Location:

Date Received in Lab: Fri Jun-28-19 12:00 pm
Report Date: 09-JUL-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	629498-001		629498-002		629498-003			
	Field Id:	FS06		SW02		FS03			
	Depth:	0.7- ft		0-0.7 ft		0.7- ft			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Jun-28-19 07:10		Jun-28-19 07:20		Jun-28-19 07:35			
BTEX by EPA 8021B	***Extracted:***	Jul-08-19 11:45		Jul-08-19 11:45		Jul-08-19 11:45			
SUB: T104704400-18-16	***Analyzed:***	Jul-09-19 12:18		Jul-09-19 12:40		Jul-09-19 01:02			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200		
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200		
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200		
m,p-Xylenes		<0.00399	0.00399	<0.00398	0.00398	<0.00401	0.00401		
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200		
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200		
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200		
Chloride by EPA 300	***Extracted:***	Jul-01-19 15:30		Jul-01-19 15:30		Jul-01-19 15:30			
SUB: T104704400-18-16	***Analyzed:***	Jul-01-19 19:02		Jul-01-19 19:17		Jul-01-19 19:22			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		38.4	5.00	33.7	5.02	34.3	4.97		
TPH By SW8015 Mod	***Extracted:***	Jul-04-19 10:00		Jul-04-19 10:00		Jul-04-19 10:00			
SUB: T104704400-18-16	***Analyzed:***	Jul-04-19 21:56		Jul-04-19 23:08		Jul-04-19 23:31			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0		
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0		

Jessica Kramer
Project Assistant

Analytical Report 629498

for

LT Environmental, Inc.

Project Manager: Chris McKisson

RDX 17-25

034819023

09-JUL-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

09-JUL-19

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

Reference: XENCO Report No(s): **629498**
RDX 17-25
Project Address:

Chris McKisson:

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) 629498. 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. 629498 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 629498

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS06	S	06-28-19 07:10	0.7 ft	629498-001
SW02	S	06-28-19 07:20	0 - 0.7 ft	629498-002
FS03	S	06-28-19 07:35	0.7 ft	629498-003

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3094159 Chloride by EPA 300
Lab Sample ID 629503-003 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: 629498-001, -002, -003.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3094461 TPH By SW8015 Mod
Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.
Samples affected are: 629498-001.

Batch: LBA-3094810 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 629498

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	06.28.19 12.00
Lab Sample Id:	629498-001	Date Collected:	06.28.19 07.10	Sample Depth:	0.7 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.01.19 15.30	Basis:	Wet Weight
Seq Number:	3094159			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**38.4**	5.00	mg/kg	07.01.19 19.02		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.04.19 10.00	Basis:	Wet Weight
Seq Number:	3094461			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.04.19 21.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.04.19 21.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.04.19 21.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.04.19 21.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	07.04.19 21.56	
o-Terphenyl	84-15-1	62	%	70-135	07.04.19 21.56	**

Certificate of Analytical Results 629498

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	06.28.19 12.00
Lab Sample Id:	629498-001	Date Collected:	06.28.19 07.10	Sample Depth:	0.7 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.08.19 11.45	Basis:	Wet Weight
Seq Number:	3094810			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.09.19 12.18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.09.19 12.18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.09.19 12.18	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	07.09.19 12.18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.09.19 12.18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.09.19 12.18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.09.19 12.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	07.09.19 12.18	
4-Bromofluorobenzene	460-00-4	107	%	70-130	07.09.19 12.18	

Certificate of Analytical Results 629498

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	06.28.19 12.00
Lab Sample Id:	629498-002	Date Collected:	06.28.19 07.20	Sample Depth:	0 - 0.7 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.01.19 15.30	Basis:	Wet Weight
Seq Number:	3094159			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**33.7**	5.02	mg/kg	07.01.19 19.17		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.04.19 10.00	Basis:	Wet Weight
Seq Number:	3094461			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.04.19 23.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.04.19 23.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.04.19 23.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.04.19 23.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	07.04.19 23.08	
o-Terphenyl	84-15-1	79	%	70-135	07.04.19 23.08	

Certificate of Analytical Results 629498

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	06.28.19 12.00
Lab Sample Id:	629498-002	Date Collected:	06.28.19 07.20	Sample Depth:	0 - 0.7 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.08.19 11.45	Basis:	Wet Weight
Seq Number:	3094810			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.09.19 12.40	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.09.19 12.40	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.09.19 12.40	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.09.19 12.40	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.09.19 12.40	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.09.19 12.40	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.09.19 12.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.09.19 12.40	
4-Bromofluorobenzene	460-00-4	112	%	70-130	07.09.19 12.40	

Certificate of Analytical Results 629498

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	06.28.19 12.00
Lab Sample Id:	629498-003	Date Collected:	06.28.19 07.35	Sample Depth:	0.7 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.01.19 15.30	Basis:	Wet Weight
Seq Number:	3094159			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**34.3**	4.97	mg/kg	07.01.19 19.22		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.04.19 10.00	Basis:	Wet Weight
Seq Number:	3094461			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.04.19 23.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	07.04.19 23.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.04.19 23.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	07.04.19 23.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	07.04.19 23.31	
o-Terphenyl	84-15-1	77	%	70-135	07.04.19 23.31	

Certificate of Analytical Results 629498

LT Environmental, Inc., Arvada, CO

RDX 17-25

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	06.28.19 12.00
Lab Sample Id:	629498-003	Date Collected:	06.28.19 07.35	Sample Depth:	0.7 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.08.19 11.45	Basis:	Wet Weight
Seq Number:	3094810			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.09.19 01.02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.09.19 01.02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.09.19 01.02	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	07.09.19 01.02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.09.19 01.02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.09.19 01.02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.09.19 01.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.09.19 01.02	
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.09.19 01.02	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 629498

LT Environmental, Inc.

RDX 17-25

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094159 Matrix: Solid Date Prep: 07.01.19
MB Sample Id: 7681138-1-BLK LCS Sample Id: 7681138-1-BKS LCSD Sample Id: 7681138-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	253	101	252	101	90-110	0	20	mg/kg	07.01.19 18:53	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094159 Matrix: Soil Date Prep: 07.01.19
Parent Sample Id: 629498-001 MS Sample Id: 629498-001 S MSD Sample Id: 629498-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	38.4	250	336	119	323	114	90-110	4	20	mg/kg	07.01.19 19:07	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094159 Matrix: Soil Date Prep: 07.01.19
Parent Sample Id: 629503-003 MS Sample Id: 629503-003 S MSD Sample Id: 629503-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.08	248	279	110	276	108	90-110	1	20	mg/kg	07.01.19 20:15	

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094461 Matrix: Solid Date Prep: 07.04.19
MB Sample Id: 7681387-1-BLK LCS Sample Id: 7681387-1-BKS LCSD Sample Id: 7681387-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1180	118	1100	110	70-135	7	20	mg/kg	07.04.19 21:09	
Diesel Range Organics (DRO)	<8.13	1000	1190	119	1150	115	70-135	3	20	mg/kg	07.04.19 21:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		111		103		70-135	%	07.04.19 21:09
o-Terphenyl	83		110		97		70-135	%	07.04.19 21:09

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

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

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

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

QC Summary 629498

LT Environmental, Inc.

RDX 17-25

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094461 Matrix: Soil Date Prep: 07.04.19
Parent Sample Id: 629498-001 MS Sample Id: 629498-001 S MSD Sample Id: 629498-001 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)	9.21	997	1180	117	1190	118	70-135	1	20	mg/kg	07.04.19 22:20	
Diesel Range Organics (DRO)	13.6	997	1080	107	1050	104	70-135	3	20	mg/kg	07.04.19 22:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		102		70-135	%	07.04.19 22:20
o-Terphenyl	79		76		70-135	%	07.04.19 22:20

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3094810 Matrix: Solid Date Prep: 07.08.19
MB Sample Id: 7681533-1-BLK LCS Sample Id: 7681533-1-BKS LCSD Sample Id: 7681533-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0919	92	0.0879	88	70-130	4	35	mg/kg	07.08.19 08:34	
Toluene	<0.00200	0.0998	0.0899	90	0.0873	88	70-130	3	35	mg/kg	07.08.19 08:34	
Ethylbenzene	<0.00200	0.0998	0.101	101	0.0952	96	70-130	6	35	mg/kg	07.08.19 08:34	
m,p-Xylenes	<0.00399	0.200	0.201	101	0.191	96	70-130	5	35	mg/kg	07.08.19 08:34	
o-Xylene	<0.00200	0.0998	0.0960	96	0.0914	92	70-130	5	35	mg/kg	07.08.19 08:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		93		93		70-130	%	07.08.19 08:34
4-Bromofluorobenzene	95		106		103		70-130	%	07.08.19 08:34

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3094810 Matrix: Soil Date Prep: 07.08.19
Parent Sample Id: 629496-023 MS Sample Id: 629496-023 S MSD Sample Id: 629496-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0823	83	0.0834	83	70-130	1	35	mg/kg	07.08.19 09:18	
Toluene	<0.00199	0.0996	0.0820	82	0.0796	80	70-130	3	35	mg/kg	07.08.19 09:18	
Ethylbenzene	<0.00199	0.0996	0.0912	92	0.0897	90	70-130	2	35	mg/kg	07.08.19 09:18	
m,p-Xylenes	<0.00398	0.199	0.181	91	0.180	90	70-130	1	35	mg/kg	07.08.19 09:18	
o-Xylene	<0.00199	0.0996	0.0872	88	0.0884	88	70-130	1	35	mg/kg	07.08.19 09:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		101		70-130	%	07.08.19 09:18
4-Bromofluorobenzene	119		120		70-130	%	07.08.19 09:18

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

Chain of Custody

Work Order No: 629498

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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Project Manager:	Chris McKisson	Bill to: (if different)	Chris McKisson
Company Name:	LT Environmental, Inc., Permian office	Company Name:	LT Environmental
Address:	820 Megan Avenue, Unit B	Address:	
City, State ZIP:	Rifle, CO 81650	City, State ZIP:	
Phone:	(970)285-9985	Email:	llaumbach@ltenv.com, cmckisson@ltenv.com, asmith@ltenv.com

Work Order Comments

Program: UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ ST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	RDX 17-25	Turn Around	
Project Number:	03481902 3	Routine	X
P.O. Number:	2RP 5437	Rush:	
Sampler's Name:	Lynda Laumbach	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Temperature (°C):	4.0	Thermometer ID	
Received Intact:	Yes No	T-NM-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Total Containers:	3

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
FS06	S	06/28/19	7:10	0.7'	1	X	X	X
SW02	S		7:20	0-0.7'	1	X	X	X
FS03	S		7:35	0.7'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			06/28/19 12:00	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number **42558**

Date/Time: 06/28/19 15:05
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.:

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
629498-001	S	FS06	06/28/19 07:10	SW8021B	BTEX by EPA 8021B	07/05/19	07/12/19	JKR	BR4FBZ BZ BZME EBZ X	
629498-001	S	FS06	06/28/19 07:10	SW8015MOD_NM	TPH By SW8015 Mod	07/05/19	07/12/19	JKR	PHCC10C28 PHCC28C35	
629498-001	S	FS06	06/28/19 07:10	E300_CL	Chloride by EPA 300	07/05/19	12/25/19	JKR	CL	
629498-002	S	SW02	06/28/19 07:20	SW8015MOD_NM	TPH By SW8015 Mod	07/05/19	07/12/19	JKR	PHCC10C28 PHCC28C35	
629498-002	S	SW02	06/28/19 07:20	SW8021B	BTEX by EPA 8021B	07/05/19	07/12/19	JKR	BR4FBZ BZ BZME EBZ X	
629498-002	S	SW02	06/28/19 07:20	E300_CL	Chloride by EPA 300	07/05/19	12/25/19	JKR	CL	
629498-003	S	FS03	06/28/19 07:35	SW8015MOD_NM	TPH By SW8015 Mod	07/05/19	07/12/19	JKR	PHCC10C28 PHCC28C35	
629498-003	S	FS03	06/28/19 07:35	SW8021B	BTEX by EPA 8021B	07/05/19	07/12/19	JKR	BR4FBZ BZ BZME EBZ X	
629498-003	S	FS03	06/28/19 07:35	E300_CL	Chloride by EPA 300	07/05/19	12/25/19	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 06/28/2019

Received By: Brianna Teel

Date Received: 07/01/2019 07:26

Cooler Temperature: 0.6

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 42558

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Elizabeth McClellan **Date Sent:** 06/28/2019 03:05 PM

Received By: Brianna Teel **Date Received:** 07/01/2019 07:26 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 *Custody Seals Signed and dated for Containers/coolers	**N/A**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Brianna Teel Date: 07/01/2019

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/28/2019 12:00:00 PM

Work Order #: 629498

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

Temperature Measuring device used : T-NM-007

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 06/28/2019

Checklist reviewed by: Jessica Kramer Date: 07/02/2019