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	NAB1914255662
District RP	2RP-5439
Facility ID	
Application ID	pAB1914255421

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # *(assigned by OCD)* NAB1914255662
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.255264° Longitude -103.837074°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Los Medanos 36-23-30 State #703H	Site Type Production Well Facility
Date Release Discovered 5/8/2019	API# *(if applicable)* 30-015-45314

Unit Letter	Section	Township	Range	County
N	36	23S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☒ Other (describe) HCl Solution 26-36.95%	Volume/Weight Released (provide units) 27.38 barrels	Volume/Weight Recovered (provide units) 27.26 barrels

Cause of Release

During frac preparation activities, contract personnel discovered hydrochloric acid seeping from the primary acid tank into lined containment and the well pad. Fluid was transferred to a secondary tank and the primary tank was repaired. The secondary tank then developed a leak and was also repaired. Free fluid was recovered from the containment. Additional third party resources have been retained to assist with remediation. Remediation activities will begin when pending flowback activities have been completed.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914255662
District RP	2RP-5439
Facility ID	
Application ID	pAB1914255421

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? An unauthorized release of a volume of 25 barrels or more

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Notice provided by Bryan Foust to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), and Ryan Mann (SLO) on 5/9/2019 by email

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:
N/A

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

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

Printed Name: Kyle Littrell
Title: SH&E Supervisor
Signature:
Date: 5/20/2019
email: Kyle_Littrell@xtoenergy.com
Telephone: 432-221-7331

OCD Only

Received by:
Date: 5/22/2019

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914255662
District RP	2RP-5439
Facility ID	
Application ID	pAB1914255421

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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914255662
District RP	2RP-5439
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Application ID	pAB1914255421

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 12/18/2019

email: Kyle_Littrell@xtoenergy.com Telephone: (432)-221-7331

OCD Only

Received by: Date: 5/22/2019

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914255662
District RP	2RP-5439
Facility ID	
Application ID	pAB1914255421

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 12/18/2019

email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: Date: 5/22/2019

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:

Printed Name: Title:

LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

December 18, 2019

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

RE: Closure Request
Los Medanos 36-23-30 State #703H
Remediation Permit Number 2RP-5439
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following request detailing site assessment and soil sampling activities at the Los Medanos 36-23-30 State #703H (Site) in Unit N, Section 36, Township 23 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to confirm the presence or absence of impacts to soil following a release of hydrochloric acid into lined containment and the well pad at the northern central portion of the Site. Based on field observations, field screening, and laboratory analytical results from soil sampling activities, XTO is submitting this Closure Request and requesting No Further Action (NFA) for Remediation Permit (RP) Number 2RP-5439.

RELEASE BACKGROUND

On May 8, 2019, during preparation for hydraulic fracturing activities, a leak from the primary acid tank was discovered resulting in the release of hydrochloric acid into lined containment and the well pad at the Site. Fluid was transferred to a secondary tank while the primary tank was being repaired. The secondary tank developed a leak, resulting in an additional release of hydrochloric acid and was also repaired. The total release from both the primary and secondary frac tanks was approximately 27.38 barrels (bbls). Freestanding acid was neutralized and recovered from the containment area at a volume estimated to be approximately 27.26 bbls. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on May 20, 2019, and was assigned RP Number 2RP-5439 (Attachment 1).

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code

(NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is the United States Geological Survey (USGS) well 321544103515202, located 1.70 miles west-northwest of the Site. The water well has a depth to groundwater of approximately 417 feet bgs and a total depth of 563 feet bgs. Ground surface elevation at the water well location is 3,404 feet above mean seal level (amsl). The closest continuously-flowing water or significant watercourse to the Site is a tributary to an unknown body of water located approximately 2,143 feet east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake, and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a low potential karst area.

CLOSURE CRITERIA

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

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

SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On September 16, 2019, LTE personnel conducted Site reconnaissance to evaluate the release extent based on information provided on the Form C-141 and visual observations. LTE personnel collected four preliminary soil samples (SS01 through SS04) within the release extent from a depth of approximately 0.5 feet bgs to assess the presence or absence of soil impacts at the ground surface. Soil was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

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

organics (ORO) following EPA Method 8015M/D; Chloride following EPA Method 300.0; and pH following EPA Method 9045D.

Based on laboratory analytical results for the preliminary soil samples SS01 through SS04, excavation activities did not appeared to be warranted; however, additional assessment activities were scheduled to further confirm the presence or absence of impacted soil. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2.

On November 20, 2019, LTE personnel returned to the Site to oversee additional soil assessment activities. Four potholes (PH01 through PH04) were advanced using a track-mounted backhoe to a depth of approximately 2 feet bgs within the release extent. Soil samples were collected at depths of approximately 1 foot bgs (PH01 through PH04) and 2 feet bgs (PH01A through PH04A) at each pothole location.

Soil from the boreholes were field screened for volatile aromatic hydrocarbons utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each borehole were logged on lithologic/soil sampling logs, which are included in Attachment 3. The delineation soil samples were collected, handled, and analyzed as described above at Xenco in Midland, Texas. All potholes were backfilled with the same soil that was removed during the investigation at each location. The preliminary delineation soil sample and pothole locations are depicted on Figure 2.

ANALYTICAL RESULTS

Laboratory analytical results indicated benzene, BTEX, GRO and DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in preliminary soil samples SS01 through SS04 collected at approximately 0.5 feet bgs, in samples PH01 through PH04 collected at 1 foot bgs, and in samples PH01A through PH04A collected at 2 feet bgs. In addition, pH was also analyzed in samples PH01 through PH04 collected at 1 foot bgs, and in samples PH01A through PH04A at 2 feet bgs to ensure that no remaining acidic concentrations were left within the release area. Sample results ranged from 8.03 to 8.67. Laboratory analytical results are presented on Figure 2 and summarized in Table 1. The complete laboratory analytical reports are included as Attachment 3.

CONCLUSIONS

Preliminary soil samples SS01 through SS04 and delineation soil samples PH01/PH01A through PH04/PH04A were collected from within the release extent from depths ranging from 0.5 feet to 2 feet bgs to assess for the presence or absence of soil impacts resulting from the release discovered May 8, 2019. Laboratory analytical results for all soil samples indicated benzene, BTEX, GRO and DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, pH values in soil samples did not indicate any impact to the soil from the release.

Based on initial response efforts and soil sample laboratory analytical results compliant with the Closure Criteria, no impacted soil was identified and no soil excavation was required as a result of the hydrochloric acid release. XTO requests NFA for RP Number 2RP-5439. An updated Form C-141 is included as Attachment 1.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Christa-Marie Leibli, P.G.
Senior Hydrogeologist

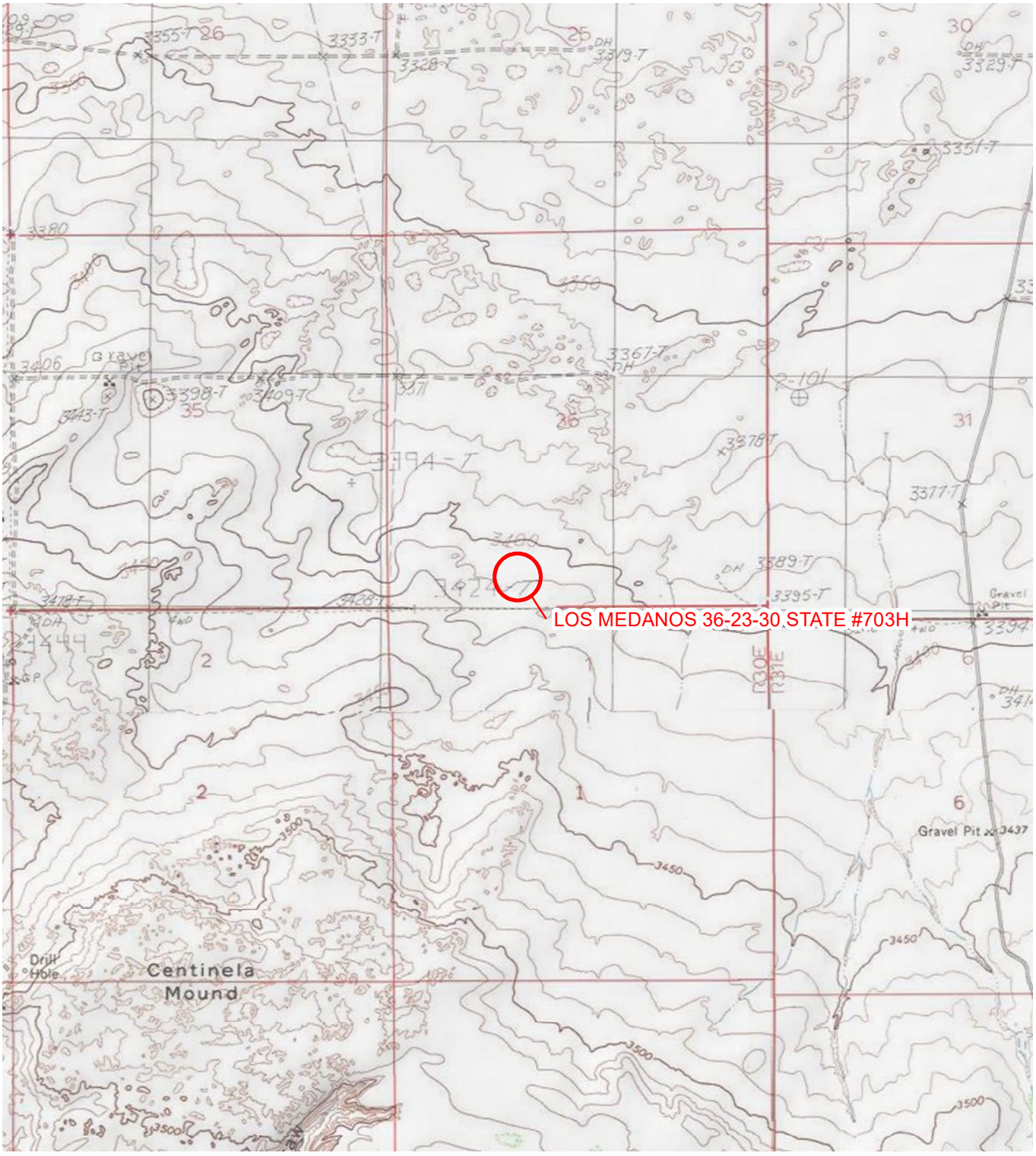
Ashley L. Ager, P.G.
Senior Geologist

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

Attachments:

Figure 1	Site Location Map
Figure 2	Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-5439)
Attachment 2	Photographic Log
Attachment 3	Lithologic/Soil Sampling Logs
Attachment 4	Laboratory Analytical Reports

FIGURES



LEGEND

SITE LOCATION

IMAGE COURTESY OF ESRI/USGS

0 2,000 4,000
Feet

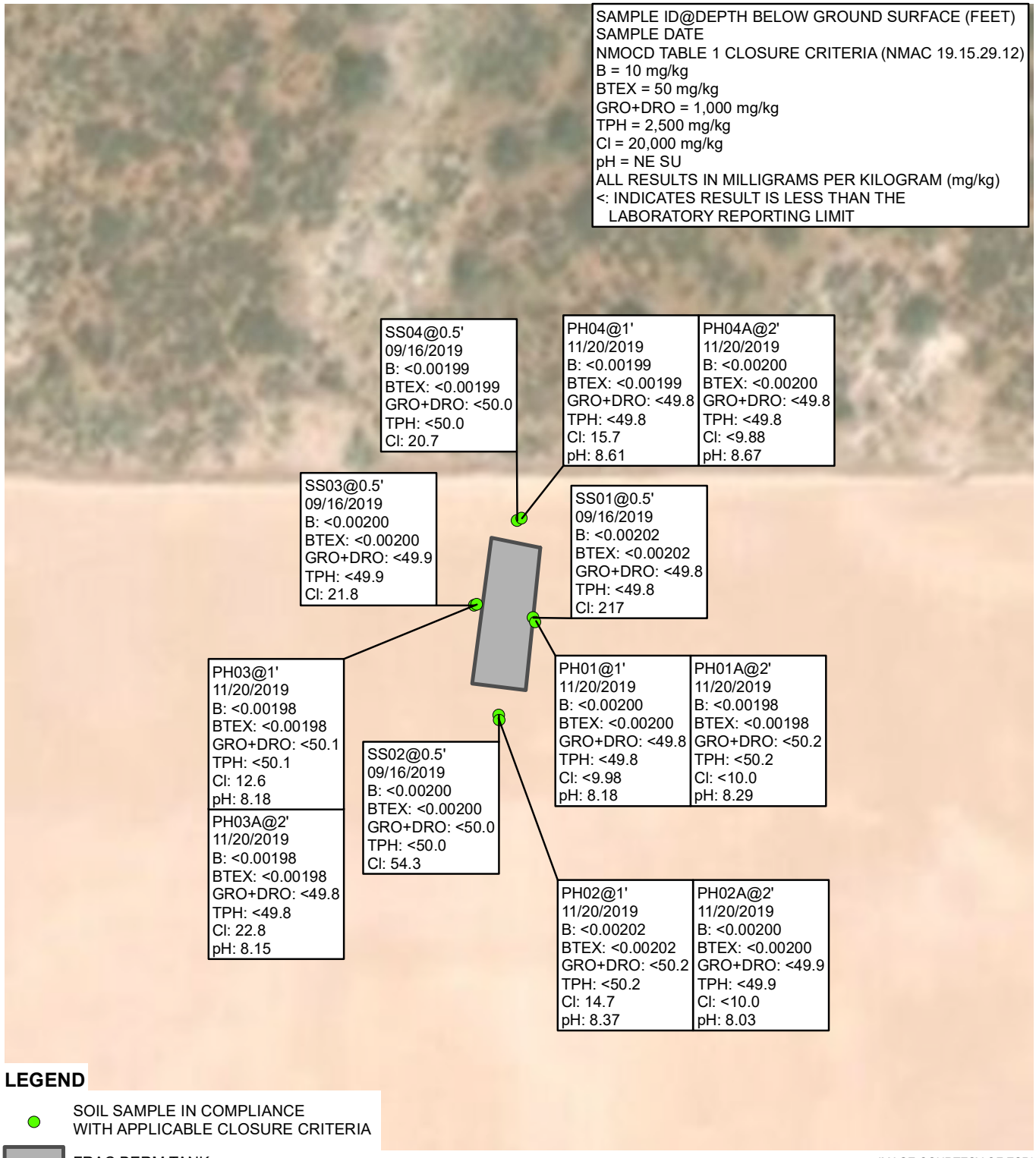
N

NEW MEXICO

NOTE: REMEDIATION PERMIT NUMBER 2RP-5439

FIGURE 1
SITE LOCATION MAP
LOS MEDANOS 36-23-30 STATE #703H
UNIT N SEC 36 T23S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919093_LOS MEDANOS 36-23-30 STATE #703H\012919093_FIG01_SL_5439.mxd



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
pH: HYDROGEN POTENTIAL OF WATER
NE: NOT ESTABLISHED
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5439

FIGURE 2
SOIL SAMPLE LOCATIONS
LOS MEDANOS 36-23-30 STATE #703H
UNIT N SEC 36 T23S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919093_LOS MEDANOS 36-23-30 STATE #703H\012919093_FIG02_SS LOC_5439.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

LOS MEDANOS 36-23-30 STATE #703H
REMEDIATION PERMIT NUMBER 2RP-5439
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)	pH in Water (SU)	Temperature (Deg °C)
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**	NE	NE
SS01	0.5	09/16/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	217		
SS02	0.5	09/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	54.3		
SS03	0.5	09/16/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	21.8		
SS04	0.5	09/16/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	20.7		
PH01	1	11/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	<9.98	8.18	23.2
PH01A	2	11/20/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	<10.0	8.29	24.7
PH02	1	11/20/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	14.7	8.37	25.2
PH02A	2	11/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	<10.0	8.03	24.7
PH03	1	11/20/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	12.6	8.18	24.9
PH03A	2	11/20/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	22.8	8.15	24.6
PH04	1	11/20/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	15.7	8.61	24.1
PH04A	2	11/20/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	<9.88	8.67	23.1

Notes:

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
MRO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
NE - not established
TPH - total petroleum hydrocarbons
Bold - indicates result exceeds the applicable regulatory standard
< - indicates result is below laboratory reporting limits
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

ATTACHMENT 2: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: South facing view of frac tank and release extent.

Photograph 2: East facing view of site location.

Photograph 3: North facing view of site location.

Photograph 4: East facing view of frac tank and release extent.

ATTACHMENT 3: LITHOLOGIC / SOIL SMAPLING LOGS

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

Identifier: PH01	Date: 11/20/19
Project Name: Los Medanos 36-23-30 State #703H	RP Number:
Logged By: Fatima Smith	Method:
Hole Diameter:	Total Depth: 2'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Dry	<179	0.1	N		0–1		S	SC, SP, SL, reddish brwn, no odor, no cohesiveness
Dry	"	0.2	N		1–2		S	deepest sample @ 2'

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

Fatima

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

Identifier: PH02	Date: 11/20/19
Project Name: Los Medanos 36-23-30 State #703H	RP Number:
Logged By: Fatima Smith	Method:
Hole Diameter:	Total Depth: 2'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long: Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Dry	<179	0.2	N		1		S	SC, SP, SL, reddish brwn, no odor, no cohesiveness
Dry	"	0.1	N		2		S	deepest sample @ 2'

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

Fatima

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

Identifier: PH03	Date: 11/20/19
Project Name: Los Medanos 36-23-30 State #703H	RP Number:
Logged By: Fatima Smith	Method:
Hole Diameter:	Total Depth: 2'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Dry	<179	8.1	N		0–1		S	SC, SP, SL, reddish brwn, no odor, no cohesiveness
Dry	11	0.3	N		1–2		S	↓ deepest sample @ 2'

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

Fatima

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

Identifier: PH04	Date: 11/20/19
Project Name: Los Medanos 36-23-30 State #703H	RP Number:
Logged By: Fatima Smith	Method:
Hole Diameter:	Total Depth: 2'

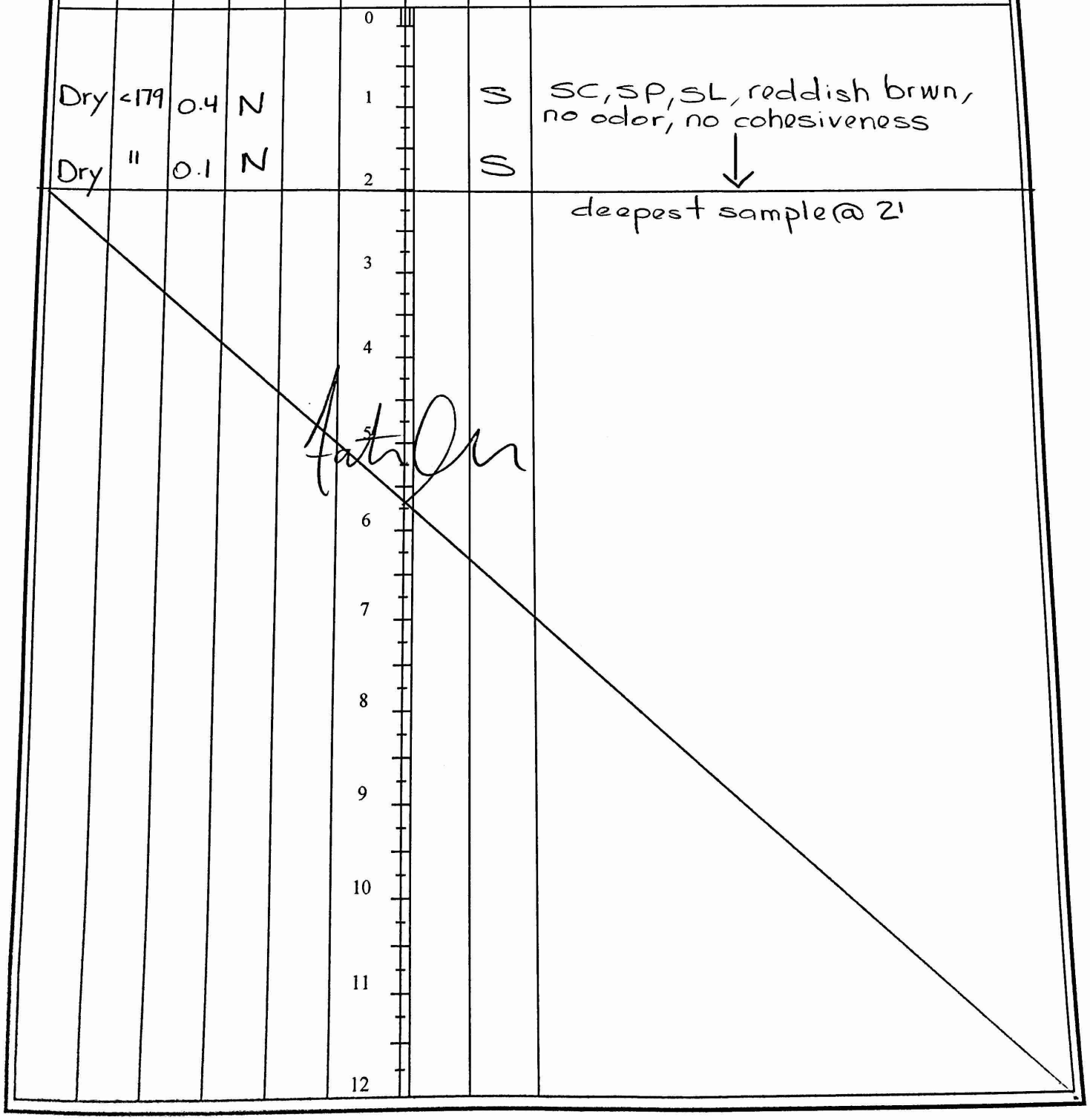
LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
Dry	<179	0.4	N		0–1		S	SC, SP, SL, reddish brwn, no odor, no cohesiveness
Dry	11	0.1	N		1–2		S	deepest sample @ 2'



ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS

Analytical Report 637051

for

LT Environmental, Inc.

Project Manager: Dan Moir

Los Medanos 36-23-30 State #703H

012919093

20-SEP-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), North Carolina (681)

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

20-SEP-19

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

Reference: XENCO Report No(s): **637051**
Los Medanos 36-23-30 State #703H
Project Address: Eddy County

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 637051. 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. 637051 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 637051

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State #703H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	09-16-19 12:48	0.5 ft	637051-001
SS02	S	09-16-19 12:49	0.5 ft	637051-002
SS03	S	09-16-19 12:50	0.5 ft	637051-003
SS04	S	09-16-19 12:51	0.5 ft	637051-004

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Los Medanos 36-23-30 State #703H

Project ID:	*012919093*	Report Date:	*20-SEP-19*
Work Order Number(s):	*637051*	Date Received:	*09/17/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3101869 BTEX by EPA 8021B

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

Certificate of Analysis Summary 637051

LT Environmental, Inc., Arvada, CO

Project Name: Los Medanos 36-23-30 State #703H

Project Id: 012919093
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Tue Sep-17-19 08:45 am
Report Date: 20-SEP-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	637051-001		637051-002		637051-003		637051-004					
	Field Id:	SS01		SS02		SS03		SS04					
	Depth:	0.5- ft		0.5- ft		0.5- ft		0.5- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Sep-16-19 12:48		Sep-16-19 12:49		Sep-16-19 12:50		Sep-16-19 12:51					
BTEX by EPA 8021B SUB: T104704400-18-16	***Extracted:***	Sep-18-19 12:15		Sep-18-19 12:15		Sep-18-19 12:15		Sep-18-19 12:15					
	Analyzed:	Sep-18-19 20:17		Sep-18-19 20:37		Sep-18-19 20:57		Sep-18-19 21:17					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199				
Toluene		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199				
Ethylbenzene		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199				
m,p-Xylenes		<0.00403	0.00403	<0.00401	0.00401	<0.00399	0.00399	<0.00398	0.00398				
o-Xylene		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199				
Total Xylenes		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199				
Total BTEX		<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199				
Chloride by EPA 300 SUB: T104704400-18-16	***Extracted:***	Sep-19-19 14:30		Sep-19-19 14:30		Sep-19-19 14:30		Sep-19-19 14:30					
	Analyzed:	Sep-19-19 15:58		Sep-19-19 16:04		Sep-19-19 16:21		Sep-19-19 16:27					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		217	5.02	54.3	4.98	21.8	4.96	20.7	4.99				
PH By SW9045D SUB: T104704400-18-16	***Extracted:***												
	Analyzed:	Sep-18-19 13:00		Sep-18-19 13:00		Sep-18-19 13:00		Sep-18-19 13:00					
	Units/RL:	Deg C	RL	Deg C	RL	Deg C	RL	Deg C	RL				
Temperature		22.5 +		22.8 +		22.6 +		22.6 +					
PH By SW9045D SUB: T104704400-18-16	***Extracted:***												
	Analyzed:	Sep-18-19 13:00		Sep-18-19 13:00		Sep-18-19 13:00		Sep-18-19 13:00					
	Units/RL:	SU	RL	SU	RL	SU	RL	SU	RL				
pH		8.31		8.39		8.51		8.47					

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 637051

LT Environmental, Inc., Arvada, CO

Project Name: Los Medanos 36-23-30 State #703H

Project Id: 012919093
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Tue Sep-17-19 08:45 am
Report Date: 20-SEP-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	637051-001		637051-002		637051-003		637051-004			
	Field Id:	SS01		SS02		SS03		SS04			
	Depth:	0.5- ft		0.5- ft		0.5- ft		0.5- ft			
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Sep-16-19 12:48		Sep-16-19 12:49		Sep-16-19 12:50		Sep-16-19 12:51			
TPH by SW8015 Mod **SUB: T104704400-18-16**	***Extracted:***	Sep-17-19 11:00		Sep-17-19 11:00		Sep-17-19 11:00		Sep-17-19 11:00			
	Analyzed:	Sep-18-19 20:10		Sep-18-19 20:31		Sep-18-19 20:52		Sep-18-19 21:14			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0		
Diesel Range Organics (DRO)		<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0		
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0		
Total GRO-DRO		<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0		
Total TPH		<49.8	49.8	<50.0	50.0	<49.9	49.9	<50.0	50.0		

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

Jessica Kramer
Project Assistant

Certificate of Analytical Results 637051

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State #703H

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	09.17.19 08.45
Lab Sample Id:	637051-001	Date Collected:	09.16.19 12.48	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.19.19 14.30	Basis:	Wet Weight
Seq Number:	3102005			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**217**	5.02	mg/kg	09.19.19 15.58		1

Analytical Method:	PH By SW9045D				
Tech:	CHE			% Moisture:	
Analyst:	CHE			Basis:	Wet Weight
Seq Number:	3101854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.31**		SU	09.18.19 13.00		1
Temperature	TEMP	**22.5**		Deg C	09.18.19 13.00	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	09.17.19 11.00	Basis:	Wet Weight
Seq Number:	3101920			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	09.18.19 20.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	09.18.19 20.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	09.18.19 20.10	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	09.18.19 20.10	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	09.18.19 20.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	09.18.19 20.10	
o-Terphenyl	84-15-1	117	%	70-135	09.18.19 20.10	

Certificate of Analytical Results 637051

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State #703H

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	09.17.19 08.45
Lab Sample Id:	637051-001	Date Collected:	09.16.19 12.48	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	09.18.19 12.15	Basis:	Wet Weight
Seq Number:	3101869			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.18.19 20.17	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	09.18.19 20.17	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	09.18.19 20.17	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	09.18.19 20.17	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	09.18.19 20.17	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	09.18.19 20.17	U	1
Total BTEX		<0.00202	0.00202	mg/kg	09.18.19 20.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	09.18.19 20.17	
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.18.19 20.17	

Certificate of Analytical Results 637051

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State #703H

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	09.17.19 08.45
Lab Sample Id:	637051-002	Date Collected:	09.16.19 12.49	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.19.19 14.30	Basis:	Wet Weight
Seq Number:	3102005			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**54.3**	4.98	mg/kg	09.19.19 16.04		1

Analytical Method:	PH By SW9045D				
Tech:	CHE			% Moisture:	
Analyst:	CHE			Basis:	Wet Weight
Seq Number:	3101854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.39**		SU	09.18.19 13.00		1
Temperature	TEMP	**22.8**		Deg C	09.18.19 13.00	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	09.17.19 11.00	Basis:	Wet Weight
Seq Number:	3101920			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.18.19 20.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.18.19 20.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.18.19 20.31	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.18.19 20.31	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.18.19 20.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	135	%	70-135	09.18.19 20.31	
o-Terphenyl	84-15-1	129	%	70-135	09.18.19 20.31	

Certificate of Analytical Results 637051

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State #703H

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	09.17.19 08.45
Lab Sample Id:	637051-002	Date Collected:	09.16.19 12.49	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	09.18.19 12.15	Basis:	Wet Weight
Seq Number:	3101869			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.18.19 20.37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.18.19 20.37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.18.19 20.37	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	09.18.19 20.37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.18.19 20.37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.18.19 20.37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.18.19 20.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	09.18.19 20.37	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.18.19 20.37	

Certificate of Analytical Results 637051

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State #703H

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	09.17.19 08.45
Lab Sample Id:	637051-003	Date Collected:	09.16.19 12.50	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.19.19 14.30	Basis:	Wet Weight
Seq Number:	3102005			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.8**	4.96	mg/kg	09.19.19 16.21		1

Analytical Method:	PH By SW9045D				
Tech:	CHE			% Moisture:	
Analyst:	CHE			Basis:	Wet Weight
Seq Number:	3101854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.51**		SU	09.18.19 13.00		1
Temperature	TEMP	**22.6**		Deg C	09.18.19 13.00	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	09.17.19 11.00	Basis:	Wet Weight
Seq Number:	3101920			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	09.18.19 20.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	09.18.19 20.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	09.18.19 20.52	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	09.18.19 20.52	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	09.18.19 20.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	09.18.19 20.52	
o-Terphenyl	84-15-1	127	%	70-135	09.18.19 20.52	

Certificate of Analytical Results 637051

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State #703H

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	09.17.19 08.45
Lab Sample Id:	637051-003	Date Collected:	09.16.19 12.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	09.18.19 12.15	Basis:	Wet Weight
Seq Number:	3101869			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.18.19 20.57	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.18.19 20.57	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.18.19 20.57	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	09.18.19 20.57	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	09.18.19 20.57	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	09.18.19 20.57	U	1
Total BTEX		<0.00200	0.00200	mg/kg	09.18.19 20.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	09.18.19 20.57	
4-Bromofluorobenzene	460-00-4	106	%	70-130	09.18.19 20.57	

Certificate of Analytical Results 637051

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State #703H

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	09.17.19 08.45
Lab Sample Id:	637051-004	Date Collected:	09.16.19 12.51	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	09.19.19 14.30	Basis:	Wet Weight
Seq Number:	3102005			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**20.7**	4.99	mg/kg	09.19.19 16.27		1

Analytical Method:	PH By SW9045D				
Tech:	CHE			% Moisture:	
Analyst:	CHE			Basis:	Wet Weight
Seq Number:	3101854			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	**8.47**		SU	09.18.19 13.00		1
Temperature	TEMP	**22.6**		Deg C	09.18.19 13.00	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	09.17.19 11.00	Basis:	Wet Weight
Seq Number:	3101920			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	09.18.19 21.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	09.18.19 21.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	09.18.19 21.14	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	09.18.19 21.14	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	09.18.19 21.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	09.18.19 21.14	
o-Terphenyl	84-15-1	126	%	70-135	09.18.19 21.14	

Certificate of Analytical Results 637051

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State #703H

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	09.17.19 08.45
Lab Sample Id:	637051-004	Date Collected:	09.16.19 12.51	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	09.18.19 12.15	Basis:	Wet Weight
Seq Number:	3101869			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.18.19 21.17	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.18.19 21.17	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.18.19 21.17	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.18.19 21.17	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.18.19 21.17	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.18.19 21.17	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.18.19 21.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	09.18.19 21.17	
1,4-Difluorobenzene	540-36-3	99	%	70-130	09.18.19 21.17	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

PQL Practical Quantitation Limit **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 637051

LT Environmental, Inc.

Los Medanos 36-23-30 State #703H

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3102005 — Matrix: Solid — Date Prep: 09.19.19
MB Sample Id: 7686542-1-BLK — LCS Sample Id: 7686542-1-BKS — LCSD Sample Id: 7686542-1-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	236	94	236	94	90-110	0	20	mg/kg	09.19.19 14:34	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3102005 — Matrix: Soil — Date Prep: 09.19.19
Parent Sample Id: 637051-002 — MS Sample Id: 637051-002 S — MSD Sample Id: 637051-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	54.3	249	309	102	310	103	90-110	0	20	mg/kg	09.19.19 16:10	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3102005 — Matrix: Soil — Date Prep: 09.19.19
Parent Sample Id: 637358-061 — MS Sample Id: 637358-061 S — MSD Sample Id: 637358-061 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.21	251	249	98	251	99	90-110	1	20	mg/kg	09.19.19 14:50	

Analytical Method: PH By SW9045D
Seq Number: 3101854 — Matrix: Soil
Parent Sample Id: 637051-001 — MD Sample Id: 637051-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	8.31	8.31	0	20	SU	09.18.19 13:00	
Temperature	22.5	22.5	0	25	Deg C	09.18.19 13:00	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3101920 — Matrix: Solid — Date Prep: 09.17.19
MB Sample Id: 7686313-1-BLK — LCS Sample Id: 7686313-1-BKS — LCSD Sample Id: 7686313-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1170	117	1140	114	70-135	3	20	mg/kg	09.18.19 13:01	
Diesel Range Organics (DRO)	<15.0	1000	1130	113	1100	110	70-135	3	20	mg/kg	09.18.19 13:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		121		120		70-135	%	09.18.19 13:01
o-Terphenyl	130		125		124		70-135	%	09.18.19 13:01

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 637051

LT Environmental, Inc.

Los Medanos 36-23-30 State #703H

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3101920 | Matrix: Soil | Date Prep: 09.17.19
Parent Sample Id: 636983-001 | MS Sample Id: 636983-001 S | MSD Sample Id: 636983-001 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)	<14.9	996	1010	101	1050	105	70-135	4	20	mg/kg	09.18.19 14:05	
Diesel Range Organics (DRO)	<14.9	996	987	99	1050	105	70-135	6	20	mg/kg	09.18.19 14:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		127		70-135	%	09.18.19 14:05
o-Terphenyl	118		129		70-135	%	09.18.19 14:05

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3101869 | Matrix: Solid | Date Prep: 09.18.19
MB Sample Id: 7686420-1-BLK | LCS Sample Id: 7686420-1-BKS | LCSD Sample Id: 7686420-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0991	99	0.106	106	70-130	7	35	mg/kg	09.18.19 18:17	
Toluene	<0.00200	0.100	0.0969	97	0.103	103	70-130	6	35	mg/kg	09.18.19 18:17	
Ethylbenzene	<0.00200	0.100	0.102	102	0.108	108	70-130	6	35	mg/kg	09.18.19 18:17	
m,p-Xylenes	<0.00400	0.200	0.198	99	0.209	105	70-130	5	35	mg/kg	09.18.19 18:17	
o-Xylene	<0.00200	0.100	0.102	102	0.107	107	70-130	5	35	mg/kg	09.18.19 18:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		98		99		70-130	%	09.18.19 18:17
4-Bromofluorobenzene	92		105		105		70-130	%	09.18.19 18:17

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3101869 | Matrix: Soil | Date Prep: 09.18.19
Parent Sample Id: 637051-001 | MS Sample Id: 637051-001 S | MSD Sample Id: 637051-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0741	73	0.0914	92	70-130	21	35	mg/kg	09.18.19 18:57	
Toluene	<0.00202	0.101	0.0726	72	0.0893	90	70-130	21	35	mg/kg	09.18.19 18:57	
Ethylbenzene	<0.00202	0.101	0.0744	74	0.0941	95	70-130	23	35	mg/kg	09.18.19 18:57	
m,p-Xylenes	<0.00403	0.202	0.144	71	0.183	92	70-130	24	35	mg/kg	09.18.19 18:57	
o-Xylene	<0.00202	0.101	0.0736	73	0.0955	96	70-130	26	35	mg/kg	09.18.19 18:57	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		101		70-130	%	09.18.19 18:57
4-Bromofluorobenzene	107		111		70-130	%	09.18.19 18:57

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

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

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

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

Chain of Custody

Work Order No: 037051

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 _____ of _____

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	
Phone:	(432) 236-3849	Email:	wmather@ltenv.com, dmoir@ltenv.com

Work Order Comments

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

Project Name:	Los Medanos 36-23-30 State#703H	Turn Around	
Project Number:	12919093	Routine	☑
P.O. Number:	Eddy County	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	6.0	Thermometer ID	T-NM-007
Received Intact:	(Yes) No	Correction Factor:	-0.2
Cooler Custody Seals:	Yes (No) N/A	Total Containers:	4
Sample Custody Seals:	Yes (No) N/A		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	pH
SS01	s	9/16/2019	12:48	0.5	1	x	x	x	x
SS02	s	9/16/2019	12:49	0.5	1	x	x	x	x
SS03	s	9/16/2019	12:50	0.5	1	x	x	x	x
SS04	s	9/16/2019	12:51	0.5	1	x	x	x	x

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

Sample Comments
Discrete
Discrete
Discrete
Discrete

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		9/17/19 08:45	2		
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number **48122**

Date/Time: 09/17/19 11:12
Created by: Elizabeth Mcclellan
Please send report to: Jessica Kramer

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

Lab# To: **Midland**
Air Bill No.: 776265482604
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
637051-001	S	SS01	09/16/19 12:48	SW8021B	BTEX by EPA 8021B	09/23/19	09/30/19	JKR	BR4FBZ BZ BZME EBZ X	
637051-001	S	SS01	09/16/19 12:48	SW9045C	Soil pH by SW-846 9045C	09/23/19	10/14/19	JKR		
637051-001	S	SS01	09/16/19 12:48	SW8015MOD_NM	TPH by SW8015 Mod	09/23/19	09/30/19	JKR	GRO-DRO PHCC10C28 PH	
637051-001	S	SS01	09/16/19 12:48	E300_CL	Chloride by EPA 300	09/23/19	03/14/20	JKR	CL	
637051-002	S	SS02	09/16/19 12:49	SW8021B	BTEX by EPA 8021B	09/23/19	09/30/19	JKR	BR4FBZ BZ BZME EBZ X	
637051-002	S	SS02	09/16/19 12:49	E300_CL	Chloride by EPA 300	09/23/19	03/14/20	JKR	CL	
637051-002	S	SS02	09/16/19 12:49	SW9045C	Soil pH by SW-846 9045C	09/23/19	10/14/19	JKR		
637051-002	S	SS02	09/16/19 12:49	SW8015MOD_NM	TPH by SW8015 Mod	09/23/19	09/30/19	JKR	GRO-DRO PHCC10C28 PH	
637051-003	S	SS03	09/16/19 12:50	SW9045C	Soil pH by SW-846 9045C	09/23/19	10/14/19	JKR		
637051-003	S	SS03	09/16/19 12:50	SW8021B	BTEX by EPA 8021B	09/23/19	09/30/19	JKR	BR4FBZ BZ BZME EBZ X	
637051-003	S	SS03	09/16/19 12:50	SW8015MOD_NM	TPH by SW8015 Mod	09/23/19	09/30/19	JKR	GRO-DRO PHCC10C28 PH	
637051-003	S	SS03	09/16/19 12:50	E300_CL	Chloride by EPA 300	09/23/19	03/14/20	JKR	CL	
637051-004	S	SS04	09/16/19 12:51	SW8021B	BTEX by EPA 8021B	09/23/19	09/30/19	JKR	BR4FBZ BZ BZME EBZ X	
637051-004	S	SS04	09/16/19 12:51	SW8015MOD_NM	TPH by SW8015 Mod	09/23/19	09/30/19	JKR	GRO-DRO PHCC10C28 PH	
637051-004	S	SS04	09/16/19 12:51	E300_CL	Chloride by EPA 300	09/23/19	03/14/20	JKR	CL	
637051-004	S	SS04	09/16/19 12:51	SW9045C	Soil pH by SW-846 9045C	09/23/19	10/14/19	JKR		

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 09/17/2019

Received By: Brianna Teel

Date Received: 09/18/2019 11:27

Cooler Temperature: 2.1

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 48122

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

Sent By: Elizabeth McClellan **Date Sent:** 09/17/2019 11:12 AM

Received By: Brianna Teel **Date Received:** 09/18/2019 11:27 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.1	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**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: 09/18/2019

Brianna Teel

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/17/2019 08:45:00 AM

Work Order #: 637051

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)?	6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**Yes**	
#6*Custody Seals Signed and dated?	**Yes**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	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: 09/17/2019

Checklist reviewed by: Jessica Kramer Date: 09/18/2019

Analytical Report 643864

for

LT Environmental, Inc.

Project Manager: Dan Moir

Los Medanos 36-23-30 State#703H

012919093

22-NOV-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

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

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

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

22-NOV-19

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

Reference: XENCO Report No(s): **643864**
Los Medanos 36-23-30 State#703H
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 643864. 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. 643864 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

Sample Cross Reference 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	11-20-19 10:07	1 ft	643864-001
PH01A	S	11-20-19 10:06	2 ft	643864-002
PH02	S	11-20-19 10:15	1 ft	643864-003
PH02A	S	11-20-19 10:14	2 ft	643864-004
PH03	S	11-20-19 10:21	1 ft	643864-005
PH03A	S	11-20-19 10:20	2 ft	643864-006
PH04	S	11-20-19 10:27	1 ft	643864-007
PH04A	S	11-20-19 10:26	2 ft	643864-008

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Los Medanos 36-23-30 State#703H

Project ID:	*012919093*	Report Date:	*22-NOV-19*
Work Order Number(s):	*643864*	Date Received:	*11/20/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3108185 BTEX by EPA 8021B

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

Certificate of Analysis Summary 643864

LT Environmental, Inc., Arvada, CO

Project Name: Los Medanos 36-23-30 State#703H

Project Id: 012919093
Contact: Dan Moir
Project Location:

Date Received in Lab: Wed Nov-20-19 12:35 pm
Report Date: 22-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	643864-001		643864-002		643864-003		643864-004		643864-005		643864-006	
	Field Id:	PH01		PH01A		PH02		PH02A		PH03		PH03A	
	Depth:	1- ft		2- ft		1- ft		2- ft		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-20-19 10:07		Nov-20-19 10:06		Nov-20-19 10:15		Nov-20-19 10:14		Nov-20-19 10:21		Nov-20-19 10:20	
BTEX by EPA 8021B	***Extracted:***	Nov-20-19 14:11		Nov-20-19 14:11		Nov-20-19 14:11		Nov-20-19 14:11		Nov-20-19 14:11		Nov-20-19 14:11	
	Analyzed:	Nov-20-19 22:44		Nov-20-19 23:01		Nov-20-19 23:19		Nov-20-19 23:36		Nov-20-19 23:53		Nov-21-19 00:11	
	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	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Toluene		<0.00200	0.00200	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Ethylbenzene		<0.00200	0.00200	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
m,p-Xylenes		<0.00200	0.00200	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
o-Xylene		<0.00200	0.00200	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Total Xylenes		<0.00200	0.00200	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Total BTEX		<0.00200	0.00200	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Chloride by EPA 300	***Extracted:***	Nov-20-19 16:11		Nov-20-19 16:11		Nov-20-19 16:11		Nov-20-19 16:11		Nov-20-19 16:11		Nov-20-19 16:11	
	Analyzed:	Nov-20-19 18:35		Nov-20-19 18:52		Nov-20-19 18:58		Nov-20-19 19:04		Nov-20-19 19:10		Nov-20-19 19:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<9.98	9.98	<10.0	10.0	14.7	10.1	<10.0	10.0	12.6	9.92	22.8	9.88
PH By SW9045D SUB: T104704215-19-30	***Extracted:***												
	Analyzed:	Nov-21-19 10:57		Nov-21-19 10:57		Nov-21-19 10:57		Nov-21-19 10:57		Nov-21-19 10:57		Nov-21-19 10:57	
	Units/RL:	Deg C	RL	Deg C	RL	Deg C	RL	Deg C	RL	Deg C	RL	Deg C	RL
Temperature		23.2 +		24.7 +		25.2 +		24.7 +		24.9 +		24.6 +	
PH By SW9045D SUB: T104704215-19-30	***Extracted:***												
	Analyzed:	Nov-21-19 10:57		Nov-21-19 10:57		Nov-21-19 10:57		Nov-21-19 10:57		Nov-21-19 10:57		Nov-21-19 10:57	
	Units/RL:	SU	RL	SU	RL	SU	RL	SU	RL	SU	RL	SU	RL
pH in Water		8.18		8.29		8.37		8.03		8.18		8.15	

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 643864

LT Environmental, Inc., Arvada, CO

Project Name: Los Medanos 36-23-30 State#703H

Project Id: 012919093
Contact: Dan Moir
Project Location:

Date Received in Lab: Wed Nov-20-19 12:35 pm
Report Date: 22-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	643864-001		643864-002		643864-003		643864-004		643864-005		643864-006	
	Field Id:	PH01		PH01A		PH02		PH02A		PH03		PH03A	
	Depth:	1- ft		2- ft		1- ft		2- ft		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-20-19 10:07		Nov-20-19 10:06		Nov-20-19 10:15		Nov-20-19 10:14		Nov-20-19 10:21		Nov-20-19 10:20	
TPH by SW8015 Mod	***Extracted:***	Nov-20-19 16:30		Nov-20-19 16:30		Nov-20-19 16:30		Nov-20-19 16:30		Nov-20-19 16:30		Nov-20-19 16:30	
	Analyzed:	Nov-20-19 21:53		Nov-20-19 22:13		Nov-20-19 22:33		Nov-20-19 22:53		Nov-20-19 23:13		Nov-20-19 23:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8	<50.2	50.2	<50.2	50.2	<49.9	49.9	<50.1	50.1	<49.8	49.8
Diesel Range Organics (DRO)		<49.8	49.8	<50.2	50.2	<50.2	50.2	<49.9	49.9	<50.1	50.1	<49.8	49.8
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8	<50.2	50.2	<50.2	50.2	<49.9	49.9	<50.1	50.1	<49.8	49.8
Total GRO-DRO		<49.8	49.8	<50.2	50.2	<50.2	50.2	<49.9	49.9	<50.1	50.1	<49.8	49.8
Total TPH		<49.8	49.8	<50.2	50.2	<50.2	50.2	<49.9	49.9	<50.1	50.1	<49.8	49.8

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 643864

LT Environmental, Inc., Arvada, CO

Project Name: Los Medanos 36-23-30 State#703H

Project Id: 012919093
Contact: Dan Moir
Project Location:

Date Received in Lab: Wed Nov-20-19 12:35 pm
Report Date: 22-NOV-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	643864-007		643864-008					
	Field Id:	PH04		PH04A					
	Depth:	1- ft		2- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Nov-20-19 10:27		Nov-20-19 10:26					
BTEX by EPA 8021B	***Extracted:***	Nov-20-19 14:11		Nov-20-19 14:11					
	Analyzed:	Nov-21-19 00:28		Nov-21-19 00:46					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00199	0.00199	<0.00200	0.00200				
Toluene		<0.00199	0.00199	<0.00200	0.00200				
Ethylbenzene		<0.00199	0.00199	<0.00200	0.00200				
m,p-Xylenes		<0.00199	0.00199	<0.00200	0.00200				
o-Xylene		<0.00199	0.00199	<0.00200	0.00200				
Total Xylenes		<0.00199	0.00199	<0.00200	0.00200				
Total BTEX		<0.00199	0.00199	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	Nov-20-19 16:11		Nov-20-19 16:11					
	Analyzed:	Nov-20-19 19:34		Nov-20-19 21:21					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		15.7	9.98	<9.88	9.88				
PH By SW9045D SUB: T104704215-19-30	***Extracted:***								
	Analyzed:	Nov-21-19 10:57		Nov-21-19 10:57					
	Units/RL:	Deg C	RL	Deg C	RL				
Temperature		24.1 +		23.1 +					
PH By SW9045D SUB: T104704215-19-30	***Extracted:***								
	Analyzed:	Nov-21-19 10:57		Nov-21-19 10:57					
	Units/RL:	SU	RL	SU	RL				
pH in Water		8.61		8.67					

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 643864

LT Environmental, Inc., Arvada, CO

Project Name: Los Medanos 36-23-30 State#703H

Project Id: 012919093
Contact: Dan Moir
Project Location:

Date Received in Lab: Wed Nov-20-19 12:35 pm
Report Date: 22-NOV-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	643864-007		643864-008					
	Field Id:	PH04		PH04A					
	Depth:	1- ft		2- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Nov-20-19 10:27		Nov-20-19 10:26					
TPH by SW8015 Mod	***Extracted:***	Nov-20-19 16:30		Nov-20-19 16:30					
	Analyzed:	Nov-20-19 23:53		Nov-21-19 00:12					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<49.8	49.8	<49.8	49.8				
Diesel Range Organics (DRO)		<49.8	49.8	<49.8	49.8				
Motor Oil Range Hydrocarbons (MRO)		<49.8	49.8	<49.8	49.8				
Total GRO-DRO		<49.8	49.8	<49.8	49.8				
Total TPH		<49.8	49.8	<49.8	49.8				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-001	Date Collected:	11.20.19 10.07	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 16.11	Basis:	Wet Weight
Seq Number:	3108187				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	11.20.19 18.35	U	1

Analytical Method:	PH By SW9045D		
Tech:	KBU	% Moisture:	
Analyst:	KBU	Basis:	Wet Weight
Seq Number:	3108243	SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.18**		SU	11.21.19 10.57		1
Temperature	TEMP	**23.2**		Deg C	11.21.19 10.57	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.20.19 16.30	Basis:	Wet Weight
Seq Number:	3108192				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.19 21.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.19 21.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.19 21.53	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.19 21.53	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.19 21.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.20.19 21.53	
o-Terphenyl	84-15-1	102	%	70-135	11.20.19 21.53	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-001	Date Collected:	11.20.19 10.07	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 14.11	Basis:	Wet Weight
Seq Number:	3108185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.19 22.44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.19 22.44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.19 22.44	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.20.19 22.44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.19 22.44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.19 22.44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.19 22.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.20.19 22.44	
4-Bromofluorobenzene	460-00-4	103	%	70-130	11.20.19 22.44	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-002	Date Collected:	11.20.19 10.06	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 16.11	Basis:	Wet Weight
Seq Number:	3108187				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	11.20.19 18.52	U	1

Analytical Method:	PH By SW9045D		
Tech:	KBU	% Moisture:	
Analyst:	KBU	Basis:	Wet Weight
Seq Number:	3108243	SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.29**		SU	11.21.19 10.57		1
Temperature	TEMP	**24.7**		Deg C	11.21.19 10.57	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.20.19 16.30	Basis:	Wet Weight
Seq Number:	3108192				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.20.19 22.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.20.19 22.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.20.19 22.13	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.20.19 22.13	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.20.19 22.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.20.19 22.13	
o-Terphenyl	84-15-1	106	%	70-135	11.20.19 22.13	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-002	Date Collected:	11.20.19 10.06	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 14.11	Basis:	Wet Weight
Seq Number:	3108185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.20.19 23.01	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.20.19 23.01	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.20.19 23.01	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.20.19 23.01	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.20.19 23.01	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.20.19 23.01	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.20.19 23.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	11.20.19 23.01	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.20.19 23.01	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-003	Date Collected:	11.20.19 10.15	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 16.11	Basis:	Wet Weight
Seq Number:	3108187				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**14.7**	10.1	mg/kg	11.20.19 18.58		1

Analytical Method:	PH By SW9045D				
Tech:	KBU			% Moisture:	
Analyst:	KBU			Basis:	Wet Weight
Seq Number:	3108243			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.37**		SU	11.21.19 10.57		1
Temperature	TEMP	**25.2**		Deg C	11.21.19 10.57	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.20.19 16.30	Basis:	Wet Weight
Seq Number:	3108192				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.20.19 22.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.20.19 22.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.20.19 22.33	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.20.19 22.33	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.20.19 22.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.20.19 22.33	
o-Terphenyl	84-15-1	113	%	70-135	11.20.19 22.33	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-003	Date Collected:	11.20.19 10.15	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 14.11	Basis:	Wet Weight
Seq Number:	3108185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.20.19 23.19	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.20.19 23.19	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.20.19 23.19	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.20.19 23.19	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.20.19 23.19	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.20.19 23.19	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.20.19 23.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.20.19 23.19	
1,4-Difluorobenzene	540-36-3	97	%	70-130	11.20.19 23.19	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-004	Date Collected:	11.20.19 10.14	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 16.11	Basis:	Wet Weight
Seq Number:	3108187				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	11.20.19 19.04	U	1

Analytical Method:	PH By SW9045D				
Tech:	KBU			% Moisture:	
Analyst:	KBU			Basis:	Wet Weight
Seq Number:	3108243			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.03**		SU	11.21.19 10.57		1
Temperature	TEMP	**24.7**		Deg C	11.21.19 10.57	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.20.19 16.30	Basis:	Wet Weight
Seq Number:	3108192				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.20.19 22.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.20.19 22.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.20.19 22.53	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.20.19 22.53	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.20.19 22.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.20.19 22.53	
o-Terphenyl	84-15-1	110	%	70-135	11.20.19 22.53	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-004	Date Collected:	11.20.19 10.14	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 14.11	Basis:	Wet Weight
Seq Number:	3108185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.19 23.36	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.19 23.36	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.19 23.36	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.20.19 23.36	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.19 23.36	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.20.19 23.36	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.20.19 23.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.20.19 23.36	
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.20.19 23.36	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-005	Date Collected:	11.20.19 10.21	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 16.11	Basis:	Wet Weight
Seq Number:	3108187				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**12.6**	9.92	mg/kg	11.20.19 19.10		1

Analytical Method:	PH By SW9045D				
Tech:	KBU			% Moisture:	
Analyst:	KBU			Basis:	Wet Weight
Seq Number:	3108243			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.18**		SU	11.21.19 10.57		1
Temperature	TEMP	**24.9**		Deg C	11.21.19 10.57	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.20.19 16.30	Basis:	Wet Weight
Seq Number:	3108192				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.20.19 23.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.20.19 23.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.20.19 23.13	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.20.19 23.13	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.20.19 23.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.20.19 23.13	
o-Terphenyl	84-15-1	114	%	70-135	11.20.19 23.13	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-005	Date Collected:	11.20.19 10.21	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 14.11	Basis:	Wet Weight
Seq Number:	3108185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.20.19 23.53	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.20.19 23.53	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.20.19 23.53	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.20.19 23.53	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.20.19 23.53	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.20.19 23.53	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.20.19 23.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	70-130	11.20.19 23.53	
1,4-Difluorobenzene	540-36-3	90	%	70-130	11.20.19 23.53	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-006	Date Collected:	11.20.19 10.20	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 16.11	Basis:	Wet Weight
Seq Number:	3108187				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**22.8**	9.88	mg/kg	11.20.19 19.28		1

Analytical Method:	PH By SW9045D				
Tech:	KBU			% Moisture:	
Analyst:	KBU			Basis:	Wet Weight
Seq Number:	3108243			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.15**		SU	11.21.19 10.57		1
Temperature	TEMP	**24.6**		Deg C	11.21.19 10.57	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.20.19 16.30	Basis:	Wet Weight
Seq Number:	3108192				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.19 23.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.19 23.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.19 23.33	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.19 23.33	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.19 23.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.20.19 23.33	
o-Terphenyl	84-15-1	104	%	70-135	11.20.19 23.33	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-006	Date Collected:	11.20.19 10.20	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 14.11	Basis:	Wet Weight
Seq Number:	3108185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.21.19 00.11	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.21.19 00.11	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.21.19 00.11	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	11.21.19 00.11	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.21.19 00.11	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.21.19 00.11	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.21.19 00.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.21.19 00.11	
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.21.19 00.11	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-007	Date Collected:	11.20.19 10.27	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 16.11	Basis:	Wet Weight
Seq Number:	3108187				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.7**	9.98	mg/kg	11.20.19 19.34		1

Analytical Method:	PH By SW9045D				
Tech:	KBU			% Moisture:	
Analyst:	KBU			Basis:	Wet Weight
Seq Number:	3108243			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.61**		SU	11.21.19 10.57		1
Temperature	TEMP	**24.1**		Deg C	11.21.19 10.57	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.20.19 16.30	Basis:	Wet Weight
Seq Number:	3108192				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.19 23.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.19 23.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.19 23.53	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.20.19 23.53	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.20.19 23.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	11.20.19 23.53	
o-Terphenyl	84-15-1	97	%	70-135	11.20.19 23.53	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH04**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-007	Date Collected:	11.20.19 10.27	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 14.11	Basis:	Wet Weight
Seq Number:	3108185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.21.19 00.28	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.21.19 00.28	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.21.19 00.28	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.21.19 00.28	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.21.19 00.28	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.21.19 00.28	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.21.19 00.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.21.19 00.28	
1,4-Difluorobenzene	540-36-3	92	%	70-130	11.21.19 00.28	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-008	Date Collected:	11.20.19 10.26	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 16.11	Basis:	Wet Weight
Seq Number:	3108187				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.88	9.88	mg/kg	11.20.19 21.21	U	1

Analytical Method:	PH By SW9045D		
Tech:	KBU	% Moisture:	
Analyst:	KBU	Basis:	Wet Weight
Seq Number:	3108243	SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
pH in Water	12408-02-5	**8.67**		SU	11.21.19 10.57		1
Temperature	TEMP	**23.1**		Deg C	11.21.19 10.57	+	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.20.19 16.30	Basis:	Wet Weight
Seq Number:	3108192				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.21.19 00.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.21.19 00.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.21.19 00.12	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.21.19 00.12	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.21.19 00.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	11.21.19 00.12	
o-Terphenyl	84-15-1	101	%	70-135	11.21.19 00.12	

Certificate of Analytical Results 643864

LT Environmental, Inc., Arvada, CO

Los Medanos 36-23-30 State#703H

Sample Id:	**PH04A**	Matrix:	Soil	Date Received:	11.20.19 12.35
Lab Sample Id:	643864-008	Date Collected:	11.20.19 10.26	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.20.19 14.11	Basis:	Wet Weight
Seq Number:	3108185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.21.19 00.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.21.19 00.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.21.19 00.46	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.21.19 00.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.21.19 00.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.21.19 00.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.21.19 00.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.21.19 00.46	
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.21.19 00.46	

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 643864

LT Environmental, Inc.

Los Medanos 36-23-30 State#703H

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3108187 — Matrix: Solid — Date Prep: 11.20.19
MB Sample Id: 7690830-1-BLK — LCS Sample Id: 7690830-1-BKS — LCSD Sample Id: 7690830-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	249	100	251	100	90-110	1	20	mg/kg	11.20.19 18:23	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3108187 — Matrix: Soil — Date Prep: 11.20.19
Parent Sample Id: 643862-001 — MS Sample Id: 643862-001 S — MSD Sample Id: 643862-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	995	196	1140	74	1160	83	90-110	2	20	mg/kg	11.20.19 19:59	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3108187 — Matrix: Soil — Date Prep: 11.20.19
Parent Sample Id: 643864-001 — MS Sample Id: 643864-001 S — MSD Sample Id: 643864-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<9.90	198	207	105	207	104	90-110	0	20	mg/kg	11.20.19 18:41	

Analytical Method: PH By SW9045D
Seq Number: 3108243 — Matrix: Product
Parent Sample Id: 643531-003 — MD Sample Id: 643531-003 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH in Water	9.55	9.56	0	20	SU	11.21.19 10:57	
Temperature	23.6	23.6	0	25	Deg C	11.21.19 10:57	

Analytical Method: PH By SW9045D
Seq Number: 3108243 — Matrix: Soil
Parent Sample Id: 643864-001 — MD Sample Id: 643864-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH in Water	8.18	8.19	0	20	SU	11.21.19 10:57	
Temperature	23.2	23.1	0	25	Deg C	11.21.19 10:57	

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 643864

LT Environmental, Inc.

Los Medanos 36-23-30 State#703H

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3108192 | Matrix: Solid | Date Prep: 11.20.19
MB Sample Id: 7690829-1-BLK | LCS Sample Id: 7690829-1-BKS | LCSD Sample Id: 7690829-1-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)	<50.0	1000	813	81	787	79	70-135	3	35	mg/kg	11.20.19 16:34	
Diesel Range Organics (DRO)	<50.0	1000	947	95	917	92	70-135	3	35	mg/kg	11.20.19 16:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		101		99		70-135	%	11.20.19 16:34
o-Terphenyl	96		98		96		70-135	%	11.20.19 16:34

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3108192 | Matrix: Solid | Date Prep: 11.20.19
MB Sample Id: 7690829-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.20.19 16:14	

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3108192 | Matrix: Soil | Date Prep: 11.20.19
Parent Sample Id: 643861-001 | MS Sample Id: 643861-001 S | MSD Sample Id: 643861-001 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)	<50.0	999	1110	111	897	90	70-135	21	35	mg/kg	11.20.19 17:36	
Diesel Range Organics (DRO)	<50.0	999	1290	129	1050	105	70-135	21	35	mg/kg	11.20.19 17:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	131		131		70-135	%	11.20.19 17:36
o-Terphenyl	128		116		70-135	%	11.20.19 17:36

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 643864

LT Environmental, Inc.

Los Medanos 36-23-30 State#703H

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3108185 | Matrix: Solid | Date Prep: 11.20.19
MB Sample Id: 7690825-1-BLK | LCS Sample Id: 7690825-1-BKS | LCSD Sample Id: 7690825-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0980	98	0.0920	92	70-130	6	35	mg/kg	11.20.19 15:30	
Toluene	<0.00200	0.100	0.0890	89	0.0838	84	70-130	6	35	mg/kg	11.20.19 15:30	
Ethylbenzene	<0.00200	0.100	0.0967	97	0.0910	91	71-129	6	35	mg/kg	11.20.19 15:30	
m,p-Xylenes	<0.00200	0.200	0.191	96	0.180	90	70-135	6	35	mg/kg	11.20.19 15:30	
o-Xylene	<0.00200	0.100	0.0945	95	0.0891	89	71-133	6	35	mg/kg	11.20.19 15:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		102		100		70-130	%	11.20.19 15:30
4-Bromofluorobenzene	107		100		98		70-130	%	11.20.19 15:30

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3108185 | Matrix: Soil | Date Prep: 11.20.19
Parent Sample Id: 643861-001 | MS Sample Id: 643861-001 S | MSD Sample Id: 643861-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0736	74	0.0943	94	70-130	25	35	mg/kg	11.20.19 17:49	
Toluene	<0.00200	0.100	0.0694	69	0.0879	88	70-130	24	35	mg/kg	11.20.19 17:49	X
Ethylbenzene	<0.00200	0.100	0.0757	76	0.0960	96	71-129	24	35	mg/kg	11.20.19 17:49	
m,p-Xylenes	<0.00200	0.200	0.151	76	0.191	96	70-135	23	35	mg/kg	11.20.19 17:49	
o-Xylene	<0.00200	0.100	0.0743	74	0.0936	94	71-133	23	35	mg/kg	11.20.19 17:49	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		70-130	%	11.20.19 17:49
4-Bromofluorobenzene	103		101		70-130	%	11.20.19 17:49

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: 643824

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, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701
Atlanta, GA (770) 449-8800
www.xenco.com

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian Office	Company Name:	XTO Energy, Inc.
Address:	3300 North A Street	Address:	3104 E Greene St
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	fsmith@ltenv.com, dmoir@ltenv.com

Work Order Comments

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

Project Name:	Los Medanos 36-23-30 State #703H	Turn Around	
Project Number:	012919093	Routine: ☐	
PO #:	2RP-5439	Rush: 2 days	
Sampler's Name:	Fatima Smith	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes ~~No~~	Wet Ice:	Yes ~~No~~
Temperature (°C):	1.2	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:	8

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	pH
PH01	S	11/20/19	1007	1	1	X	X	X	X
PH01A			1006	2					
PH02			1015	1					
PH02A			1014	2					
PH03			1021	1					
PH03A			1020	2					
PH04			1027	1					
PH04A			1026	2					

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		11/20/19 12:35	2		
3			4		
5			6		

Revised Date101419 Rev. 2019.1

Inter-Office Shipment

IOS Number : 52737

Date/Time:	11.20.2019	Created by:	Elizabeth Mcclellan	Please send report to:	Jessica Kramer
Lab# From:	**Carlsbad**	Delivery Priority:		Address:	1089 N Canal Street
Lab# To:	**Houston**	Air Bill No.:	777039729557	E-Mail:	jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
643864-001	S	PH01	11.20.2019 10:07	SW9045D	PH By SW9045D	**11.21.2019**	12.18.2019	JKR		
643864-002	S	PH01A	11.20.2019 10:06	SW9045D	PH By SW9045D	**11.21.2019**	12.18.2019	JKR		
643864-003	S	PH02	11.20.2019 10:15	SW9045D	PH By SW9045D	**11.21.2019**	12.18.2019	JKR		
643864-004	S	PH02A	11.20.2019 10:14	SW9045D	PH By SW9045D	**11.21.2019**	12.18.2019	JKR		
643864-005	S	PH03	11.20.2019 10:21	SW9045D	PH By SW9045D	**11.21.2019**	12.18.2019	JKR		
643864-006	S	PH03A	11.20.2019 10:20	SW9045D	PH By SW9045D	**11.21.2019**	12.18.2019	JKR		
643864-007	S	PH04	11.20.2019 10:27	SW9045D	PH By SW9045D	**11.21.2019**	12.18.2019	JKR		
643864-008	S	PH04A	11.20.2019 10:26	SW9045D	PH By SW9045D	**11.21.2019**	12.18.2019	JKR		

Inter Office Shipment or Sample Comments:

Relinquished By: 

Elizabeth McClellan

Date Relinquished: 11.20.2019

Received By: 

Ashly Kowalski

Date Received: 11.21.2019

Cooler Temperature: 2.0

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 52737

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : HOU-068

Sent By: Elizabeth McClellan **Date Sent:** 11.20.2019 02.14 PM

Received By: Ashly Kowalski **Date Received:** 11.21.2019 09.30 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2	
#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: _____ Date: 11.21.2019
Ashly Kowalski

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/20/2019 12:35:00 PM

Work Order #: 643864

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)?	1.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**Yes**	
#6*Custody Seals Signed and dated?	**Yes**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	PH Subbed to Houston
#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: 11/20/2019

Checklist reviewed by: Jessica Kramer Date: 11/21/2019