

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	NRM2009458386
District RP	
Facility ID	
Application ID	

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)
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.065255 Longitude -103.917619
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Ross Ranch 6 Federal 001H	Site Type Tank Battery
Date Release Discovered 03/20/2020	API# (if applicable) 30-015-36883

Unit Letter	Section	Township	Range	County
O	6	26S	30E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 3.23	Volume Recovered (bbls) 3
☒ Produced Water	Volume Released (bbls) 23.72	Volume Recovered (bbls) 22
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release The lower half of the split body ¼ turn ball valve was removed during repairs. All fluids contained in the heater treater released onto the ground. A third party contractor will be retained to complete remediation activities.

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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 fluids greater than 25 barrels.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes by Amy Ruth to Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; 'Venegas, Victoria, EMNRD'; 'Morgan, Crisha A'; blm_nm_cfo_spill@blm.gov; 'Griswold, Jim, EMNRD' on Saturday, March 21, 2020 at 9:11 AM via 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 <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: Kyle Littrell	Title: SH&E Supervisor
Signature: 	Date: 4-2-20
email: Kyle_Littrell@xtoenergy.com	Telephone: 432-221-7331
<u>OCD Only</u>	
Received by: Ramona Marcus	Date: 4/3/2020

NRM2009458386

Location:	Ross Ranch 6 Federal 001	
Spill Date:	3/20/2020	
Area 1		
Approximate Area =	3777.60	sq. ft.
Average Saturation (or depth) of spill =	0.75	inches
Average Porosity Factor =	0.03	
VOLUME OF LEAK		
Total Crude Oil =	3.15	bbls
Total Produced Water =	23.11	bbls
Area 2		
Approximate Area =	529.00	sq. ft.
Average Saturation (or depth) of spill =	2.00	inches
Average Porosity Factor =	0.03	
VOLUME OF LEAK		
Total Crude Oil =	0.06	bbls
Total Produced Water =	0.41	bbls
Area 3		
Approximate Area =	453.00	sq. ft.
Average Saturation (or depth) of spill =	1.00	inches
Average Porosity Factor =	0.03	
VOLUME OF LEAK		
Total Crude Oil =	0.02	bbls
Total Produced Water =	0.18	bbls
Area 4		
Approximate Area =	420.00	sq. ft.
Average Saturation (or depth) of spill =	0.13	inches
Average Porosity Factor =	0.03	
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	0.02	bbls
TOTAL VOLUME OF LEAK		
Total Crude Oil =	3.23	bbls
Total Produced Water =	23.72	bbls
TOTAL VOLUME RECOVERED		
Total Crude Oil =	3.00	bbls
Total Produced Water =	22.00	bbls

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Site Assessment/Characterization

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

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

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

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

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

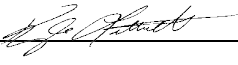
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico
Oil Conservation Division

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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: 6/18/20
email: Kyle_Littrell@xtoenergy.com Telephone: _____

OCD Only

Received by: Cristina Eads Date: 06/18/2020

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Application ID	

Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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

Printed Name: Kyle Littrell Title: SH&E Supervisor
Signature: [Signature] Date: 6/18/20
email: Kyle_Littrell@xtoenergy.com Telephone: _____

OCD Only

Received by: Cristina Eads Date: 06/18/2020

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: [Signature] Date: 09/03/2020
Printed Name: Cristina Eads Title: Environmental Specialist



LT Environmental, Inc.

3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

June 18, 2020

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

**RE: Closure Request
Ross Ranch 6 Federal 001H
Incident Number NRM2009458386
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment, soil sampling, and excavation activities at the Ross Ranch 6 Federal 001H (Site) in Unit O, Section 6, Township 26 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, soil sampling, and excavation activities was to address impacts to soil after a release of crude oil and produced water at the Site. Based on field observations, field screening, and laboratory analytical results from soil sampling activities, XTO is submitting this Closure Request and requesting no further action (NFA) for Incident Number NRM2009458386.

RELEASE BACKGROUND

On March 20, 2020, a ball valve was removed during repairs, which allowed all fluids contained in the heater-treater to release within the process equipment containment berm. The containment berm was breached on the east side and fluids were released onto the surface of the well pad. Approximately 3.23 barrels (bbls) of crude oil and 23.72 bbls of produced water were released. A vacuum truck was immediately dispatched to the Site to recover freestanding fluids; approximately 3 bbls of crude oil and 22 bbls of produced water were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on April 2, 2020 and was assigned Incident Number NRM2009458386.

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 groundwater well data. The closest permitted groundwater well with depth to groundwater data is New Mexico Office of the State Engineer (NMOSE) well



C-01360, located 0.5 mile east of the Site. The groundwater well has a reported depth to groundwater of 173 feet bgs and a total depth of 770 feet bgs. The closest continuously flowing water or significant watercourse to the Site is a tributary to the Pecos River, located approximately 970 feet east of the Site. All wells used for depth to groundwater determination are depicted on Figure 1. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area). Site receptors are identified on Figure 1.

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 EXCAVATION ACTIVITIES

On April 6, 2020, LTE personnel inspected the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Surficial staining was observed in the release area. LTE personnel collected five preliminary soil samples (SS01 through SS05) from within the release extent from a depth of 0.5 feet bgs to assess the lateral extent of impacted soil. Soil from the preliminary soil samples 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 preliminary 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 Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, TPH-oil range organics (ORO) following EPA Method 8015M/D, and chloride following EPA Method 300.0.



Bratcher, M.
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Based on visual observations and laboratory analytical results for the preliminary soil samples, excavation activities were scheduled. Laboratory analytical results for the preliminary soil samples are presented on Figure 2 and summarized in Table 1.

Between April 28, 2020 and May 4, 2020, LTE personnel returned to the Site to oversee excavation of impacted soil as indicated by field screening activities and laboratory analytical results for the preliminary soil samples. Excavation activities were performed using a hydro-vacuum and track-mounted backhoe. The excavation was separated into two areas due to the presence of the process equipment containment berm. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Impacted soil was excavated to a depth ranging from 0.5 feet to 1.5 feet bgs.

Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floors of the excavations. The 5-point composite samples were collected by placing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 and SW03 through SW08 were collected from the sidewalls of the excavations from depths ranging from the ground surface to 1 foot bgs. Composite soil samples FS01 through FS27 were collected from the floor of the excavations from depths ranging from 0.5 feet to 1.5 feet bgs. Sidewall sample SW02 was collected for field screening purposes only and was not submitted for laboratory analysis. The excavation soil samples were collected, handled, and analyzed as described above. The excavation extents and excavation soil sample locations are presented on Figure 3. Photographic documentation was conducted during the Site visits. Photographs are included in Attachment 1.

The combined excavation extents measured approximately 7,164 square feet. A total of approximately 265 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility located in Hobbs, New Mexico. After completion of confirmation soil sampling, the excavation was secured with fencing.

ANALYTICAL RESULTS

Laboratory analytical results for preliminary soil samples SS01, SS02, SS03, and SS05 indicated that TPH-GRO and TPH-DRO and TPH concentrations exceeded the Closure Criteria. Impacted soil was excavated from these areas. Laboratory analytical results excavation sidewall samples SW01 and SW03 through SW08, and excavation floor samples FS01 through FS27 indicated benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and no further excavation was required. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 2.



Bratcher, M.
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CONCLUSIONS

Site assessment and excavation activities were conducted at the Site to address the March 20, 2020 release of crude oil and produced water at the Site. Preliminary soil samples were collected within the release area to assess the lateral extent of impacted soil. Based on the laboratory analytical results for the preliminary soil samples, impacted soil was excavated. Laboratory analytical results for the excavation soil samples collected from the final excavation extent, indicated that benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria, and no further remediation was required.

The majority of the released fluids were recovered during initial response activities. Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. Based on initial response efforts, removal of impacted soil, and laboratory analytical results compliant with the Closure Criteria, XTO requests NFA for Incident Number NRM2009458386.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Elizabeth Naka
Staff Environmental Scientist

Ashley L. Ager, P.G.
Senior Geologist

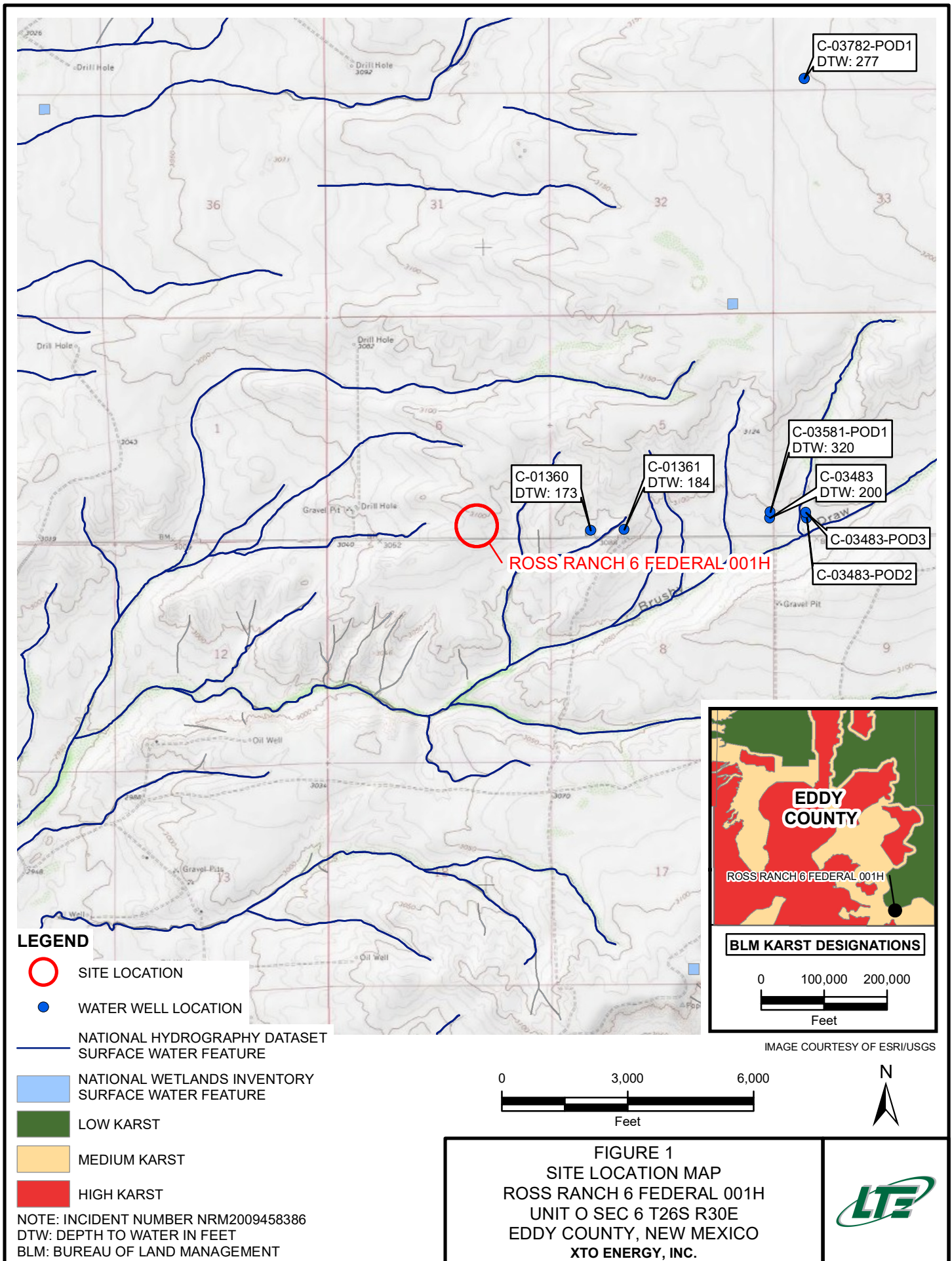
cc: Kyle Littrell, XTO
Jim Amos, Bureau of Land Management
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

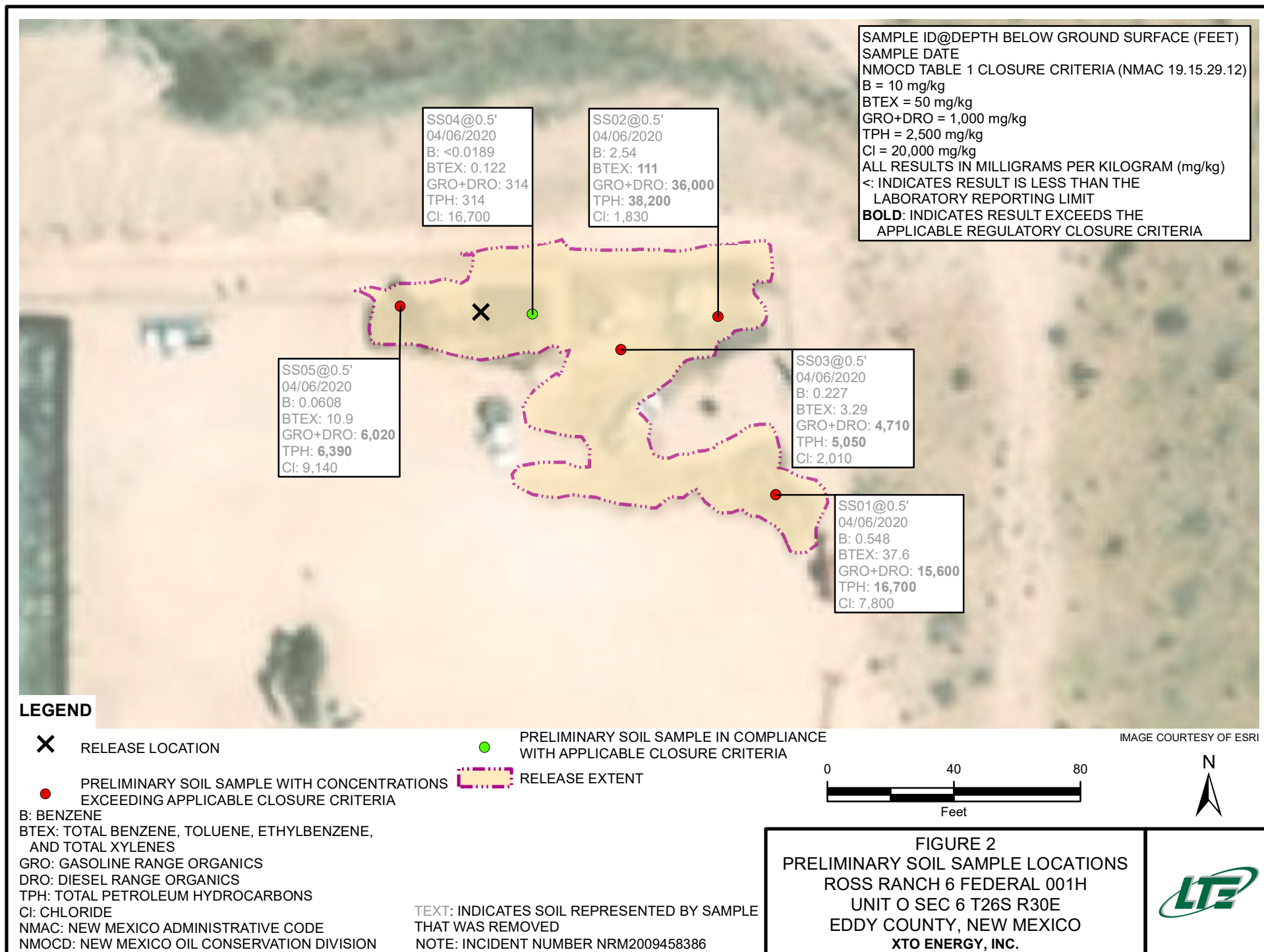
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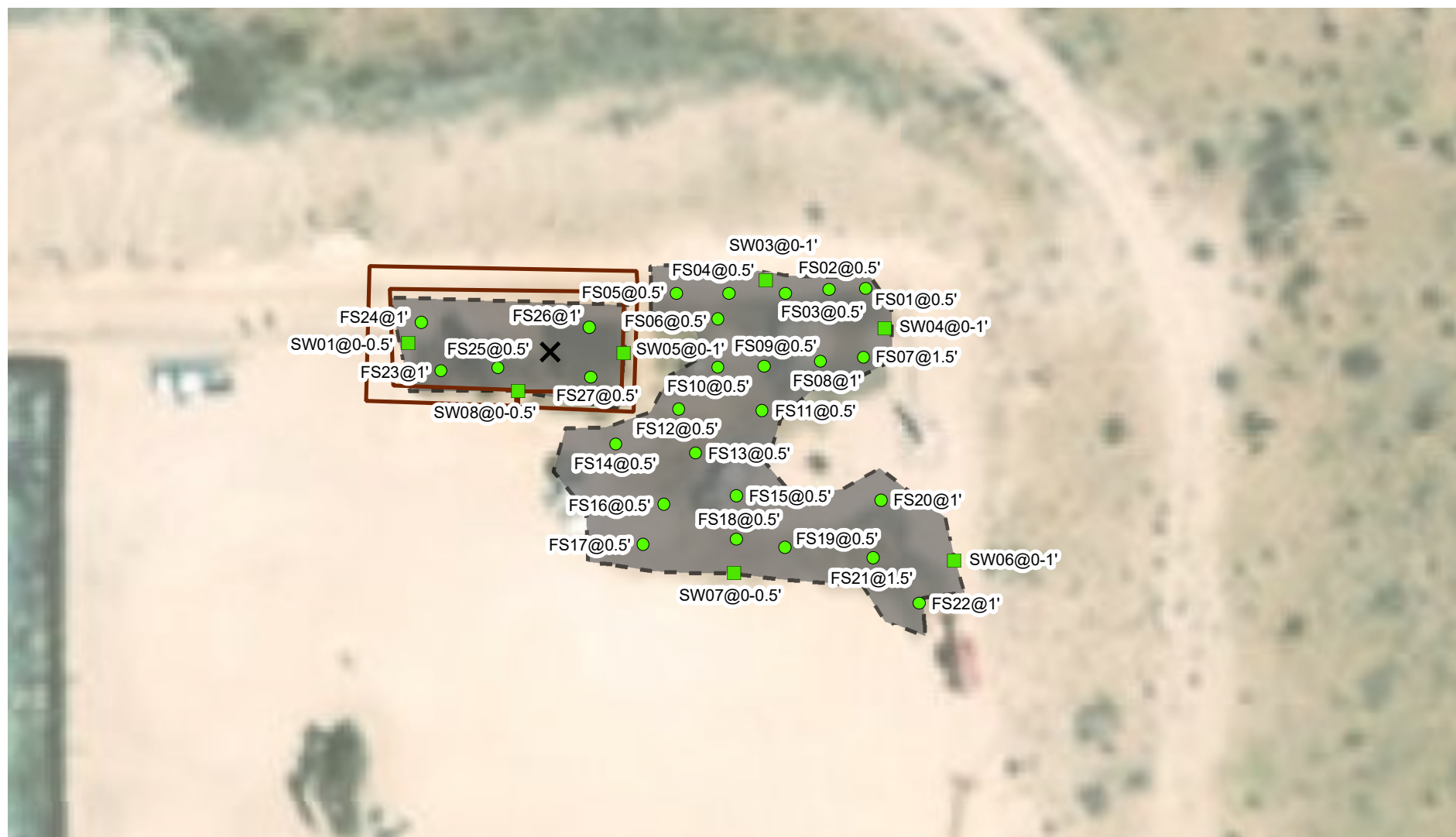
Figure 1 Site Location Map
Figure 2 Preliminary Soil Sample Locations
Figure 3 Excavation Soil Sample Locations
Table 1 Soil Analytical Results
Attachment 1 Photographic Log
Attachment 2 Laboratory Analytical Results

FIGURES



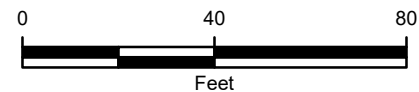




**LEGEND**

- ✕ RELEASE LOCATION
- FLOOR SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- SIDEWALL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- ▬ EXCAVATION EXTENT
- ▭ BERM EXTENT

IMAGE COURTESY OF ESRI



NOTE: INCIDENT NUMBER NRM2009458386
 SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
 ROSS RANCH 6 FEDERAL 001H
 UNIT O SEC 6 T26S R30E
 EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



TABLES



**TABLE 1
SOIL ANALYTICAL RESULTS**

**ROSS RANCH 6 FEDEERAL 001H
INCIDENT NUMBER NRM2009458386
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)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000
SS01	0.5	04/06/2020	0.548	6.72	5.14	25.2	37.6	4,520	11,100	1,110	15,600	16,700	7,800
SS02	0.5	04/06/2020	2.54	36.5	12.4	59.6	111	12,400	23,600	2,160	36,000	38,200	1,830
SS03	0.5	04/06/2020	0.227	0.839	0.423	1.80	3.29	371	4,340	335	4,710	5,050	2,010
SS04	0.5	04/06/2020	<0.0189	<0.0189	<0.0189	0.122	0.122	<49.8	314	<49.8	314	314	16,700
SS05	0.5	04/06/2020	0.0608	1.11	1.53	8.24	10.9	1,110	4,910	372	6,020	6,390	9,140
FS01	0.5	04/28/2020	<0.00200	<0.00200	0.00945	0.0348	0.0443	<50.0	641	58.1	641	699	164
FS02	0.5	04/28/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	150	<49.8	150	150	128
FS03	0.5	04/28/2020	<0.00198	<0.00198	0.0241	0.0258	0.0499	<49.8	691	67.7	691	759	1,130
FS04	0.5	04/28/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	546	62.6	546	609	875
FS05	0.5	04/28/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	93.5	<50.0	93.5	93.5	109
FS06	0.5	04/28/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	176	<50.0	176	176	372
FS07	1.5	04/30/2020	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<50.2	257	84.3	257	341	189
FS08	1	04/30/2020	<0.0196	<0.0196	<0.0196	<0.0196	<0.0196	<49.8	187	<49.8	187	187	39.7
FS09	0.5	04/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	129	<49.8	129	129	64.3
FS10	0.5	04/30/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	84.1	<49.9	84.1	84.1	67.0
FS11	0.5	04/30/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	214	<50.2	214	214	369
FS12	0.5	04/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	52.8	<50.1	52.8	52.8	86.5
FS13	0.5	04/30/2020	<0.00229	<0.00229	0.0709	0.0901	0.161	59.3	837	64.9	896	961	358
FS14	0.5	04/30/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	43.5
FS15	0.5	04/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	69.5	<50.1	69.5	69.5	93.2
FS16	0.5	04/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	75.4
FS17	0.5	04/30/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	133	<49.9	133	133	105
FS18	0.5	04/30/2020	<0.0196	<0.0196	<0.0196	<0.0196	<0.0196	<50.0	255	<50.0	255	255	124



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TABLE 1
SOIL ANALYTICAL RESULTS

ROSS RANCH 6 FEDEERAL 001H
INCIDENT NUMBER NRM2009458386
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)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000
FS19	0.5	04/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	344	<50.2	344	344	115
FS20	1	04/30/2020	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<50.1	190	<50.1	190	190	32.5
FS21	1.5	04/30/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	87.5	<49.8	87.5	87.5	25.6
FS22	1	04/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	162
FS23	1	05/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	185	<50.1	185	185	198
FS24	1	05/04/2020	<0.00198	<0.00198	0.00751	0.0198	0.0273	<49.8	231	<49.8	231	231	42.8
FS25	0.5	05/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	4,140
FS26	1	05/04/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	2,190
FS27	0.5	05/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	6,570
SW01	0 - 0.5	05/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	412	<50.1	412	412	653
SW03	0 - 1	05/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	465	<50.2	465	465	61.7
SW04	0 - 1	05/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	170	<49.9	170	170	288
SW05	0 - 1	05/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	658	71.7	658	730	146
SW06	0 - 1	05/04/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	36.4
SW07	0 - 0.5	05/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	96.5	<50.0	96.5	96.5	65.5
SW08	0 - 0.5	05/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	525	<50.1	525	525	358

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

TEXT - indicates soil removed during excavation activities

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of WSP

ATTACHMENT 1: PHOTOGRAPHIC LOG



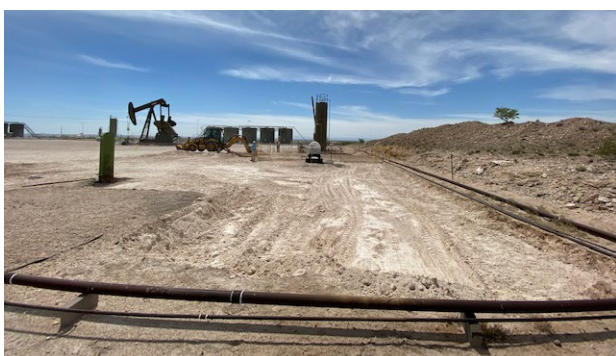
PHOTOGRAPHIC LOG



Photograph 1: View of staining on pad from release facing west.



Photograph 2: View of breached earthen berm and staining in northeast corner of well pad.



Photograph 3: View of excavation facing west.



Photograph 4: View of hydrovac excavation around equipment facing southwest.



Photograph 5: View of excavation around equipment facing northwest.

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS





Analytical Report 658052

for

LT Environmental, Inc.

Project Manager: Dan Moir

Ross Ranch 6Fed 1H

012920049

04.08.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.08.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **658052**

Ross Ranch 6Fed 1H

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) 658052. 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. 658052 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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 658052****LT Environmental, Inc., Arvada, CO**

Ross Ranch 6Fed 1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	04.06.2020 11:39	0.5 ft	658052-001
SS02	S	04.06.2020 11:41	0.5 ft	658052-002
SS03	S	04.06.2020 11:44	0.5 ft	658052-003
SS04	S	04.06.2020 11:47	0.5 ft	658052-004
SS05	S	04.06.2020 11:50	0.5 ft	658052-005



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Ross Ranch 6Fed 1H*

Project ID: 012920049
Work Order Number(s): 658052

Report Date: 04.08.2020
Date Received: 04.06.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3122150 BTEX by EPA 8021B

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



Certificate of Analysis Summary 658052

LT Environmental, Inc., Arvada, CO

Project Name: Ross Ranch 6Fed 1H

Project Id: 012920049

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon 04.06.2020 15:45

Report Date: 04.08.2020 12:12

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658052-001	658052-002	658052-003	658052-004	658052-005	
	Field Id:	SS01	SS02	SS03	SS04	SS05	
	Depth:	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	04.06.2020 11:39	04.06.2020 11:41	04.06.2020 11:44	04.06.2020 11:47	04.06.2020 11:50	
BTEX by EPA 8021B	Extracted:	04.06.2020 16:30	04.06.2020 16:30	04.06.2020 16:30	04.06.2020 16:30	04.06.2020 16:30	
	Analyzed:	04.06.2020 21:10	04.06.2020 21:30	04.06.2020 21:51	04.06.2020 23:12	04.06.2020 23:33	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		0.548 0.200	2.54 0.202	0.227 0.200	<0.0189 0.0189	0.0608 0.0498	
Toluene		6.72 0.200	36.5 0.202	0.839 0.200	<0.0189 0.0189	1.11 0.199	
Ethylbenzene		5.14 0.200	12.4 0.202	0.423 0.200	<0.0189 0.0189	1.53 0.199	
m,p-Xylenes		17.4 0.401	42.1 0.403	1.20 0.401	0.122 0.0377	5.87 0.398	
o-Xylene		7.80 0.200	17.5 0.202	0.602 0.200	<0.0189 0.0189	2.37 0.199	
Total Xylenes		25.2 0.200	59.6 0.202	1.80 0.200	0.122 0.0189	8.24 0.199	
Total BTEX		37.6 0.200	111 0.202	3.29 0.200	0.122 0.0189	10.9 0.0498	
Chloride by EPA 300	Extracted:	04.07.2020 11:01	04.07.2020 11:01	04.07.2020 11:01	04.07.2020 11:01	04.07.2020 11:01	
	Analyzed:	04.07.2020 16:25	04.07.2020 16:42	04.07.2020 16:47	04.07.2020 16:53	04.07.2020 16:58	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		7800 49.8	1830 50.3	2010 49.9	16700 101	9140 50.1	
TPH by SW8015 Mod	Extracted:	04.06.2020 16:30	04.06.2020 16:30	04.06.2020 16:30	04.06.2020 16:30	04.06.2020 16:30	
	Analyzed:	04.07.2020 09:20	04.07.2020 09:40	04.06.2020 17:56	04.06.2020 18:16	04.06.2020 18:37	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		4520 251	12400 503	371 50.2	<49.8 49.8	1110 50.3	
Diesel Range Organics (DRO)		11100 251	23600 503	4340 50.2	314 49.8	4910 50.3	
Motor Oil Range Hydrocarbons (MRO)		1110 251	2160 503	335 50.2	<49.8 49.8	372 50.3	
Total GRO-DRO		15600 251	36000 503	4710 50.2	314 49.8	6020 50.3	
Total TPH		16700 251	38200 503	5050 50.2	314 49.8	6390 50.3	

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

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 658052

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 1H

Sample Id: **SS01**
Lab Sample Id: 658052-001

Matrix: Soil
Date Collected: 04.06.2020 11:39

Date Received: 04.06.2020 15:45
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3122305

Date Prep: 04.07.2020 11:01

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7800	49.8	mg/kg	04.07.2020 16:25		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3122090

Date Prep: 04.06.2020 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	4520	251	mg/kg	04.07.2020 09:20		5
Diesel Range Organics (DRO)	C10C28DRO	11100	251	mg/kg	04.07.2020 09:20		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1110	251	mg/kg	04.07.2020 09:20		5
Total GRO-DRO	PHC628	15600	251	mg/kg	04.07.2020 09:20		5
Total TPH	PHC635	16700	251	mg/kg	04.07.2020 09:20		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	04.07.2020 09:20	
o-Terphenyl	84-15-1	106	%	70-135	04.07.2020 09:20	



Certificate of Analytical Results 658052

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 1H

Sample Id: **SS01**
Lab Sample Id: 658052-001

Matrix: Soil
Date Collected: 04.06.2020 11:39

Date Received: 04.06.2020 15:45
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.06.2020 16:30

Basis: Wet Weight

Seq Number: 3122150

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.548	0.200	mg/kg	04.06.2020 21:10		100
Toluene	108-88-3	6.72	0.200	mg/kg	04.06.2020 21:10		100
Ethylbenzene	100-41-4	5.14	0.200	mg/kg	04.06.2020 21:10		100
m,p-Xylenes	179601-23-1	17.4	0.401	mg/kg	04.06.2020 21:10		100
o-Xylene	95-47-6	7.80	0.200	mg/kg	04.06.2020 21:10		100
Total Xylenes	1330-20-7	25.2	0.200	mg/kg	04.06.2020 21:10		100
Total BTEX		37.6	0.200	mg/kg	04.06.2020 21:10		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.06.2020 21:10		
1,4-Difluorobenzene	540-36-3	98	%	70-130	04.06.2020 21:10		



Certificate of Analytical Results 658052

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 1H

Sample Id: **SS02** Matrix: Soil Date Received: 04.06.2020 15:45
 Lab Sample Id: 658052-002 Date Collected: 04.06.2020 11:41 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.07.2020 11:01 Basis: Wet Weight
 Seq Number: 3122305

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1830	50.3	mg/kg	04.07.2020 16:42		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.06.2020 16:30 Basis: Wet Weight
 Seq Number: 3122090

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	12400	503	mg/kg	04.07.2020 09:40		10
Diesel Range Organics (DRO)	C10C28DRO	23600	503	mg/kg	04.07.2020 09:40		10
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	2160	503	mg/kg	04.07.2020 09:40		10
Total GRO-DRO	PHC628	36000	503	mg/kg	04.07.2020 09:40		10
Total TPH	PHC635	38200	503	mg/kg	04.07.2020 09:40		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	04.07.2020 09:40	
o-Terphenyl	84-15-1	124	%	70-135	04.07.2020 09:40	



Certificate of Analytical Results 658052

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 1H

Sample Id: **SS02**
Lab Sample Id: 658052-002

Matrix: Soil
Date Collected: 04.06.2020 11:41

Date Received: 04.06.2020 15:45
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.06.2020 16:30

Basis: Wet Weight

Seq Number: 3122150

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	2.54	0.202	mg/kg	04.06.2020 21:30		100
Toluene	108-88-3	36.5	0.202	mg/kg	04.06.2020 21:30		100
Ethylbenzene	100-41-4	12.4	0.202	mg/kg	04.06.2020 21:30		100
m,p-Xylenes	179601-23-1	42.1	0.403	mg/kg	04.06.2020 21:30		100
o-Xylene	95-47-6	17.5	0.202	mg/kg	04.06.2020 21:30		100
Total Xylenes	1330-20-7	59.6	0.202	mg/kg	04.06.2020 21:30		100
Total BTEX		111	0.202	mg/kg	04.06.2020 21:30		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	04.06.2020 21:30	
1,4-Difluorobenzene	540-36-3	88	%	70-130	04.06.2020 21:30	



Certificate of Analytical Results 658052

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 1H

Sample Id: **SS03**
Lab Sample Id: 658052-003

Matrix: Soil
Date Collected: 04.06.2020 11:44

Date Received: 04.06.2020 15:45
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3122305

Date Prep: 04.07.2020 11:01

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2010	49.9	mg/kg	04.07.2020 16:47		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3122090

Date Prep: 04.06.2020 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	371	50.2	mg/kg	04.06.2020 17:56		1
Diesel Range Organics (DRO)	C10C28DRO	4340	50.2	mg/kg	04.06.2020 17:56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	335	50.2	mg/kg	04.06.2020 17:56		1
Total GRO-DRO	PHC628	4710	50.2	mg/kg	04.06.2020 17:56		1
Total TPH	PHC635	5050	50.2	mg/kg	04.06.2020 17:56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	04.06.2020 17:56	
o-Terphenyl	84-15-1	104	%	70-135	04.06.2020 17:56	



Certificate of Analytical Results 658052

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 1H

Sample Id: **SS03**
Lab Sample Id: 658052-003

Matrix: Soil
Date Collected: 04.06.2020 11:44

Date Received: 04.06.2020 15:45
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.06.2020 16:30

Basis: Wet Weight

Seq Number: 3122150

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.227	0.200	mg/kg	04.06.2020 21:51		100
Toluene	108-88-3	0.839	0.200	mg/kg	04.06.2020 21:51		100
Ethylbenzene	100-41-4	0.423	0.200	mg/kg	04.06.2020 21:51		100
m,p-Xylenes	179601-23-1	1.20	0.401	mg/kg	04.06.2020 21:51		100
o-Xylene	95-47-6	0.602	0.200	mg/kg	04.06.2020 21:51		100
Total Xylenes	1330-20-7	1.80	0.200	mg/kg	04.06.2020 21:51		100
Total BTEX		3.29	0.200	mg/kg	04.06.2020 21:51		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.06.2020 21:51		
1,4-Difluorobenzene	540-36-3	102	%	70-130	04.06.2020 21:51		



Certificate of Analytical Results 658052

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 1H

Sample Id: **SS04**
Lab Sample Id: 658052-004

Matrix: Soil
Date Collected: 04.06.2020 11:47

Date Received: 04.06.2020 15:45
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3122305

Date Prep: 04.07.2020 11:01

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16700	101	mg/kg	04.07.2020 16:53		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3122096

Date Prep: 04.06.2020 16:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.06.2020 18:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	314	49.8	mg/kg	04.06.2020 18:16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.06.2020 18:16	U	1
Total GRO-DRO	PHC628	314	49.8	mg/kg	04.06.2020 18:16		1
Total TPH	PHC635	314	49.8	mg/kg	04.06.2020 18:16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	04.06.2020 18:16	
o-Terphenyl	84-15-1	114	%	70-135	04.06.2020 18:16	



Certificate of Analytical Results 658052

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 1H

Sample Id: **SS04**
Lab Sample Id: 658052-004

Matrix: Soil
Date Collected: 04.06.2020 11:47

Date Received: 04.06.2020 15:45
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.06.2020 16:30

Basis: Wet Weight

Seq Number: 3122150

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0189	0.0189	mg/kg	04.06.2020 23:12	U	1
Toluene	108-88-3	<0.0189	0.0189	mg/kg	04.06.2020 23:12	U	1
Ethylbenzene	100-41-4	<0.0189	0.0189	mg/kg	04.06.2020 23:12	U	1
m,p-Xylenes	179601-23-1	0.122	0.0377	mg/kg	04.06.2020 23:12		1
o-Xylene	95-47-6	<0.0189	0.0189	mg/kg	04.06.2020 23:12	U	1
Total Xylenes	1330-20-7	0.122	0.0189	mg/kg	04.06.2020 23:12		1
Total BTEX		0.122	0.0189	mg/kg	04.06.2020 23:12		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.06.2020 23:12		
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.06.2020 23:12		



Certificate of Analytical Results 658052

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 1H

Sample Id: **SS05** Matrix: Soil Date Received: 04.06.2020 15:45
 Lab Sample Id: 658052-005 Date Collected: 04.06.2020 11:50 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.07.2020 11:01 Basis: Wet Weight
 Seq Number: 3122305

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9140	50.1	mg/kg	04.07.2020 16:58		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.06.2020 16:30 Basis: Wet Weight
 Seq Number: 3122096

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	1110	50.3	mg/kg	04.06.2020 18:37		1
Diesel Range Organics (DRO)	C10C28DRO	4910	50.3	mg/kg	04.06.2020 18:37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	372	50.3	mg/kg	04.06.2020 18:37		1
Total GRO-DRO	PHC628	6020	50.3	mg/kg	04.06.2020 18:37		1
Total TPH	PHC635	6390	50.3	mg/kg	04.06.2020 18:37		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	04.06.2020 18:37	
o-Terphenyl	84-15-1	116	%	70-135	04.06.2020 18:37	



Certificate of Analytical Results 658052

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 1H

Sample Id: **SS05**
Lab Sample Id: 658052-005

Matrix: Soil
Date Collected: 04.06.2020 11:50

Date Received: 04.06.2020 15:45
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.06.2020 16:30

Basis: Wet Weight

Seq Number: 3122150

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0608	0.0498	mg/kg	04.06.2020 23:33		100
Toluene	108-88-3	1.11	0.199	mg/kg	04.06.2020 23:33		100
Ethylbenzene	100-41-4	1.53	0.199	mg/kg	04.06.2020 23:33		100
m,p-Xylenes	179601-23-1	5.87	0.398	mg/kg	04.06.2020 23:33		100
o-Xylene	95-47-6	2.37	0.199	mg/kg	04.06.2020 23:33		100
Total Xylenes	1330-20-7	8.24	0.199	mg/kg	04.06.2020 23:33		100
Total BTEX		10.9	0.0498	mg/kg	04.06.2020 23:33		100
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.06.2020 23:33		
1,4-Difluorobenzene	540-36-3	101	%	70-130	04.06.2020 23:33		



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. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Ross Ranch 6Fed 1H

Analytical Method: Chloride by EPA 300

Seq Number: 3122305

MB Sample Id: 7700689-1-BLK

Matrix: Solid

LCS Sample Id: 7700689-1-BKS

Prep Method: E300P

Date Prep: 04.07.2020

LCSD Sample Id: 7700689-1-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	260	104	260	104	90-110	0	20	mg/kg	04.07.2020 16:14	

Analytical Method: Chloride by EPA 300

Seq Number: 3122305

Parent Sample Id: 658052-001

Matrix: Soil

MS Sample Id: 658052-001 S

Prep Method: E300P

Date Prep: 04.07.2020

MSD Sample Id: 658052-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7800	202	8010	104	8000	99	90-110	0	20	mg/kg	04.07.2020 16:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3122305

Parent Sample Id: 658074-001

Matrix: Soil

MS Sample Id: 658074-001 S

Prep Method: E300P

Date Prep: 04.07.2020

MSD Sample Id: 658074-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	34.1	199	248	107	257	110	90-110	4	20	mg/kg	04.07.2020 17:47	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122090

MB Sample Id: 7700605-1-BLK

Matrix: Solid

LCS Sample Id: 7700605-1-BKS

Prep Method: SW8015P

Date Prep: 04.06.2020

LCSD Sample Id: 7700605-1-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	870	87	861	86	70-135	1	35	mg/kg	04.06.2020 13:16	
Diesel Range Organics (DRO)	<50.0	1000	893	89	871	87	70-135	2	35	mg/kg	04.06.2020 13:16	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		116		116		70-135	%	04.06.2020 13:16
o-Terphenyl	94		97		95		70-135	%	04.06.2020 13:16

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122096

MB Sample Id: 7700604-1-BLK

Matrix: Solid

LCS Sample Id: 7700604-1-BKS

Prep Method: SW8015P

Date Prep: 04.06.2020

LCSD Sample Id: 7700604-1-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	976	98	979	98	70-135	0	35	mg/kg	04.06.2020 13:16	
Diesel Range Organics (DRO)	<50.0	1000	1140	114	1140	114	70-135	0	35	mg/kg	04.06.2020 13:16	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		123		123		70-135	%	04.06.2020 13:16
o-Terphenyl	118		124		124		70-135	%	04.06.2020 13:16

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

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

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

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



LT Environmental, Inc.

Ross Ranch 6Fed 1H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122090

Matrix: Solid

Prep Method: SW8015P

Date Prep: 04.06.2020

MB Sample Id: 7700605-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.06.2020 12:56	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122096

Matrix: Solid

Prep Method: SW8015P

Date Prep: 04.06.2020

MB Sample Id: 7700604-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.06.2020 12:56	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122090

Matrix: Soil

Prep Method: SW8015P

Date Prep: 04.06.2020

Parent Sample Id: 657373-002

MS Sample Id: 657373-002 S

MSD Sample Id: 657373-002 SD

Parameter

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)	<50.3	1010	1060	105	940	94	70-135	12	35	mg/kg	04.06.2020 14:17	
Diesel Range Organics (DRO)	208	1010	1210	99	1180	97	70-135	3	35	mg/kg	04.06.2020 14:17	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		115		70-135	%	04.06.2020 14:17
o-Terphenyl	120		110		70-135	%	04.06.2020 14:17

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122096

Matrix: Soil

Prep Method: SW8015P

Date Prep: 04.06.2020

Parent Sample Id: 657373-001

MS Sample Id: 657373-001 S

MSD Sample Id: 657373-001 SD

Parameter

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)	<49.9	997	976	98	970	97	70-135	1	35	mg/kg	04.06.2020 14:17	
Diesel Range Organics (DRO)	<49.9	997	1160	116	1160	116	70-135	0	35	mg/kg	04.06.2020 14:17	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		121		70-135	%	04.06.2020 14:17
o-Terphenyl	125		122		70-135	%	04.06.2020 14:17

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

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

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

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



LT Environmental, Inc.

Ross Ranch 6Fed 1H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122150

MB Sample Id: 7700660-1-BLK

Matrix: Solid

LCS Sample Id: 7700660-1-BKS

Prep Method: SW5030B

Date Prep: 04.06.2020

LCSD Sample Id: 7700660-1-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	0.102	102	0.103	103	70-130	1	35	mg/kg	04.06.2020 16:45	
Toluene	<0.00200	0.100	0.0959	96	0.0988	99	70-130	3	35	mg/kg	04.06.2020 16:45	
Ethylbenzene	<0.00200	0.100	0.0881	88	0.0931	93	71-129	6	35	mg/kg	04.06.2020 16:45	
m,p-Xylenes	<0.00400	0.200	0.180	90	0.193	97	70-135	7	35	mg/kg	04.06.2020 16:45	
o-Xylene	<0.00200	0.100	0.0926	93	0.0971	97	71-133	5	35	mg/kg	04.06.2020 16:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		105		105		70-130	%	04.06.2020 16:45
4-Bromofluorobenzene	93		90		92		70-130	%	04.06.2020 16:45

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122150

Parent Sample Id: 658041-001

Matrix: Soil

MS Sample Id: 658041-001 S

Prep Method: SW5030B

Date Prep: 04.06.2020

MSD Sample Id: 658041-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0738	73	0.0724	72	70-130	2	35	mg/kg	04.06.2020 17:46	
Toluene	<0.00201	0.101	0.0788	78	0.0731	73	70-130	8	35	mg/kg	04.06.2020 17:46	
Ethylbenzene	<0.00201	0.101	0.0904	90	0.0863	86	71-129	5	35	mg/kg	04.06.2020 17:46	
m,p-Xylenes	<0.00402	0.201	0.165	82	0.157	79	70-135	5	35	mg/kg	04.06.2020 17:46	
o-Xylene	0.0122	0.101	0.106	93	0.0983	86	71-133	8	35	mg/kg	04.06.2020 17:46	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	04.06.2020 17:46
4-Bromofluorobenzene	91		91		70-130	%	04.06.2020 17:46

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

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

Work Order No: 658052

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Kyle Littell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	atrejo@ltenv.com
Project Name:	Ross Ranch 6Fed 1H	Turn Around	
Project Number:	012920049	Routine	X
P.O. Number:		Rush:	
Sampler's Name:	Armando Trejo	Due Date:	

SAMPLE RECEIPT		Temp Blank:	Yes	No	Well Ice:	Yes	No
Temperature (°C):	3.6	Thermometer ID	T-NM203				
Received Intact:	Yes	Correction Factor:	-0.2				
Cooler Custody Seals:	Yes	Total Containers:	5				
Sample Custody Seals:	Yes						

SAMPLE IDENTIFICATION				ANALYSIS REQUEST			Work Order Notes	
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers			
SS01	S	4/6/2020	1139	.5'	1	X	X	X
SS02	S	4/6/2020	1141	.5'	1	X	X	X
SS03	S	4/6/2020	1144	.5'	1	X	X	X
SS04	S	4/6/2020	1147	.5'	1	X	X	X
SS05	S	4/6/2020	1150	.5'	1	X	X	X

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 Ti 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 Ti 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
		4/10/20 15:45			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.06.2020 03.45.00 PM

Work Order #: 658052

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)?	3.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 04.06.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.07.2020



Analytical Report 660037

for

LT Environmental, Inc.

Project Manager: Dan Moir

Ross Ranch 6 Fed 001H

012920049

04.29.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.29.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **660037**

Ross Ranch 6 Fed 001H

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) 660037. 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. 660037 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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 660037****LT Environmental, Inc., Arvada, CO**

Ross Ranch 6 Fed 001H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	04.28.2020 13:03	0.5 ft	660037-001
FS02	S	04.28.2020 13:05	0.5 ft	660037-002
FS03	S	04.28.2020 13:10	0.5 ft	660037-003
FS04	S	04.28.2020 13:15	0.5 ft	660037-004
FS05	S	04.28.2020 13:20	0.5 ft	660037-005
FS06	S	04.28.2020 13:25	0.5 ft	660037-006



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Ross Ranch 6 Fed 001H*

Project ID: 012920049
Work Order Number(s): 660037

Report Date: 04.29.2020
Date Received: 04.28.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 660037

LT Environmental, Inc., Arvada, CO

Project Name: Ross Ranch 6 Fed 001H

Project Id: 012920049

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Tue 04.28.2020 16:28

Report Date: 04.29.2020 12:51

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	660037-001	660037-002	660037-003	660037-004	660037-005	660037-006
	<i>Field Id:</i>	FS01	FS02	FS03	FS04	FS05	FS06
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	04.28.2020 13:03	04.28.2020 13:05	04.28.2020 13:10	04.28.2020 13:15	04.28.2020 13:20	04.28.2020 13:25
BTEX by EPA 8021B	<i>Extracted:</i>	04.28.2020 18:00	04.28.2020 18:00	04.28.2020 18:00	04.28.2020 18:00	04.28.2020 18:00	04.28.2020 18:00
	<i>Analyzed:</i>	04.29.2020 01:46	04.29.2020 02:07	04.29.2020 02:29	04.29.2020 03:54	04.29.2020 04:16	04.29.2020 04:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		0.00945 0.00200	<0.00200 0.00200	0.0241 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		0.00924 0.00400	<0.00401 0.00401	0.0199 0.00395	<0.00401 0.00401	<0.00399 0.00399	<0.00396 0.00396
o-Xylene		0.0256 0.00200	<0.00200 0.00200	0.00593 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		0.0348 0.00200	<0.00200 0.00200	0.0258 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total BTEX		0.0443 0.00200	<0.00200 0.00200	0.0499 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	04.28.2020 17:30	04.28.2020 17:30	04.28.2020 17:30	04.28.2020 17:30	04.28.2020 17:30	04.28.2020 17:30
	<i>Analyzed:</i>	04.28.2020 20:04	04.28.2020 20:09	04.28.2020 20:15	04.28.2020 20:32	04.28.2020 20:37	04.28.2020 20:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		164 49.8	128 9.98	1130 49.9	875 50.1	109 49.4	372 50.1
TPH by SW8015 Mod	<i>Extracted:</i>	04.28.2020 17:30	04.28.2020 17:30	04.28.2020 17:30	04.28.2020 17:30	04.28.2020 17:30	04.28.2020 17:30
	<i>Analyzed:</i>	04.29.2020 02:27	04.29.2020 02:47	04.29.2020 03:08	04.29.2020 03:28	04.29.2020 03:49	04.29.2020 04:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.8 49.8	<49.8 49.8	<50.1 50.1	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		641 50.0	150 49.8	691 49.8	546 50.1	93.5 50.0	176 50.0
Motor Oil Range Hydrocarbons (MRO)		58.1 50.0	<49.8 49.8	67.7 49.8	62.6 50.1	<50.0 50.0	<50.0 50.0
Total GRO-DRO		641 50.0	150 49.8	691 49.8	546 50.1	93.5 50.0	176 50.0
Total TPH		699 50.0	150 49.8	759 49.8	609 50.1	93.5 50.0	176 50.0

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS01**
Lab Sample Id: 660037-001

Matrix: Soil
Date Collected: 04.28.2020 13:03

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124455

Date Prep: 04.28.2020 17:30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	164	49.8	mg/kg	04.28.2020 20:04		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124494

Date Prep: 04.28.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.29.2020 02:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	641	50.0	mg/kg	04.29.2020 02:27		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	58.1	50.0	mg/kg	04.29.2020 02:27		1
Total GRO-DRO	PHC628	641	50.0	mg/kg	04.29.2020 02:27		1
Total TPH	PHC635	699	50.0	mg/kg	04.29.2020 02:27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	04.29.2020 02:27	
o-Terphenyl	84-15-1	107	%	70-135	04.29.2020 02:27	



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS01**
Lab Sample Id: 660037-001

Matrix: Soil
Date Collected: 04.28.2020 13:03

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.28.2020 18:00

Basis: Wet Weight

Seq Number: 3124449

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.29.2020 01:46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.29.2020 01:46	U	1
Ethylbenzene	100-41-4	0.00945	0.00200	mg/kg	04.29.2020 01:46		1
m,p-Xylenes	179601-23-1	0.00924	0.00400	mg/kg	04.29.2020 01:46		1
o-Xylene	95-47-6	0.0256	0.00200	mg/kg	04.29.2020 01:46		1
Total Xylenes	1330-20-7	0.0348	0.00200	mg/kg	04.29.2020 01:46		1
Total BTEX		0.0443	0.00200	mg/kg	04.29.2020 01:46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	04.29.2020 01:46	
4-Bromofluorobenzene	460-00-4	101	%	70-130	04.29.2020 01:46	



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS02**
Lab Sample Id: 660037-002

Matrix: Soil
Date Collected: 04.28.2020 13:05

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124455

Date Prep: 04.28.2020 17:30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	128	9.98	mg/kg	04.28.2020 20:09		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124494

Date Prep: 04.28.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.29.2020 02:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	150	49.8	mg/kg	04.29.2020 02:47		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.29.2020 02:47	U	1
Total GRO-DRO	PHC628	150	49.8	mg/kg	04.29.2020 02:47		1
Total TPH	PHC635	150	49.8	mg/kg	04.29.2020 02:47		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	04.29.2020 02:47	
o-Terphenyl	84-15-1	115	%	70-135	04.29.2020 02:47	



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS02**
Lab Sample Id: 660037-002

Matrix: Soil
Date Collected: 04.28.2020 13:05

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.28.2020 18:00

Basis: Wet Weight

Seq Number: 3124449

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.29.2020 02:07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.29.2020 02:07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.29.2020 02:07	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.29.2020 02:07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.29.2020 02:07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.29.2020 02:07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.29.2020 02:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	04.29.2020 02:07		
1,4-Difluorobenzene	540-36-3	112	%	70-130	04.29.2020 02:07		



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS03**
Lab Sample Id: 660037-003

Matrix: Soil
Date Collected: 04.28.2020 13:10

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124455

Date Prep: 04.28.2020 17:30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1130	49.9	mg/kg	04.28.2020 20:15		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124494

Date Prep: 04.28.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.29.2020 03:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	691	49.8	mg/kg	04.29.2020 03:08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	67.7	49.8	mg/kg	04.29.2020 03:08		1
Total GRO-DRO	PHC628	691	49.8	mg/kg	04.29.2020 03:08		1
Total TPH	PHC635	759	49.8	mg/kg	04.29.2020 03:08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	04.29.2020 03:08	
o-Terphenyl	84-15-1	107	%	70-135	04.29.2020 03:08	



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS03**
Lab Sample Id: 660037-003

Matrix: Soil
Date Collected: 04.28.2020 13:10

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.28.2020 18:00

Basis: Wet Weight

Seq Number: 3124449

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.29.2020 02:29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.29.2020 02:29	U	1
Ethylbenzene	100-41-4	0.0241	0.00198	mg/kg	04.29.2020 02:29		1
m,p-Xylenes	179601-23-1	0.0199	0.00395	mg/kg	04.29.2020 02:29		1
o-Xylene	95-47-6	0.00593	0.00198	mg/kg	04.29.2020 02:29		1
Total Xylenes	1330-20-7	0.0258	0.00198	mg/kg	04.29.2020 02:29		1
Total BTEX		0.0499	0.00198	mg/kg	04.29.2020 02:29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.29.2020 02:29	
4-Bromofluorobenzene	460-00-4	106	%	70-130	04.29.2020 02:29	



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS04**
Lab Sample Id: 660037-004

Matrix: Soil
Date Collected: 04.28.2020 13:15

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124455

Date Prep: 04.28.2020 17:30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	875	50.1	mg/kg	04.28.2020 20:32		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124494

Date Prep: 04.28.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.29.2020 03:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	546	50.1	mg/kg	04.29.2020 03:28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	62.6	50.1	mg/kg	04.29.2020 03:28		1
Total GRO-DRO	PHC628	546	50.1	mg/kg	04.29.2020 03:28		1
Total TPH	PHC635	609	50.1	mg/kg	04.29.2020 03:28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	04.29.2020 03:28	
o-Terphenyl	84-15-1	108	%	70-135	04.29.2020 03:28	



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS04**
Lab Sample Id: 660037-004

Matrix: Soil
Date Collected: 04.28.2020 13:15

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.28.2020 18:00

Basis: Wet Weight

Seq Number: 3124449

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.29.2020 03:54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.29.2020 03:54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.29.2020 03:54	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.29.2020 03:54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.29.2020 03:54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.29.2020 03:54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.29.2020 03:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.29.2020 03:54	
1,4-Difluorobenzene	540-36-3	109	%	70-130	04.29.2020 03:54	



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS05**
Lab Sample Id: 660037-005

Matrix: Soil
Date Collected: 04.28.2020 13:20

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124455

Date Prep: 04.28.2020 17:30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	109	49.4	mg/kg	04.28.2020 20:37		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124494

Date Prep: 04.28.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.29.2020 03:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	93.5	50.0	mg/kg	04.29.2020 03:49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.29.2020 03:49	U	1
Total GRO-DRO	PHC628	93.5	50.0	mg/kg	04.29.2020 03:49		1
Total TPH	PHC635	93.5	50.0	mg/kg	04.29.2020 03:49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	04.29.2020 03:49	
o-Terphenyl	84-15-1	110	%	70-135	04.29.2020 03:49	



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS05**
Lab Sample Id: 660037-005

Matrix: Soil
Date Collected: 04.28.2020 13:20

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3124449

Prep Method: SW5035A

% Moisture:

Date Prep: 04.28.2020 18:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.29.2020 04:16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.29.2020 04:16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.29.2020 04:16	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.29.2020 04:16	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.29.2020 04:16	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.29.2020 04:16	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.29.2020 04:16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	04.29.2020 04:16		
1,4-Difluorobenzene	540-36-3	115	%	70-130	04.29.2020 04:16		



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS06**
Lab Sample Id: 660037-006

Matrix: Soil
Date Collected: 04.28.2020 13:25

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124455

Date Prep: 04.28.2020 17:30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	372	50.1	mg/kg	04.28.2020 20:55		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124494

Date Prep: 04.28.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.29.2020 04:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	176	50.0	mg/kg	04.29.2020 04:29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.29.2020 04:29	U	1
Total GRO-DRO	PHC628	176	50.0	mg/kg	04.29.2020 04:29		1
Total TPH	PHC635	176	50.0	mg/kg	04.29.2020 04:29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	04.29.2020 04:29	
o-Terphenyl	84-15-1	112	%	70-135	04.29.2020 04:29	



Certificate of Analytical Results 660037

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS06**
Lab Sample Id: 660037-006

Matrix: Soil
Date Collected: 04.28.2020 13:25

Date Received: 04.28.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.28.2020 18:00

Basis: Wet Weight

Seq Number: 3124449

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.29.2020 04:37	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.29.2020 04:37	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.29.2020 04:37	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	04.29.2020 04:37	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.29.2020 04:37	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.29.2020 04:37	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.29.2020 04:37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	114	%	70-130	04.29.2020 04:37		
4-Bromofluorobenzene	460-00-4	108	%	70-130	04.29.2020 04:37		



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. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Ross Ranch 6 Fed 001H

Analytical Method: Chloride by EPA 300

Seq Number: 3124455

MB Sample Id: 7702278-1-BLK

Matrix: Solid

LCS Sample Id: 7702278-1-BKS

Prep Method: E300P

Date Prep: 04.28.2020

LCSD Sample Id: 7702278-1-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	253	101	254	102	90-110	0	20	mg/kg	04.28.2020 18:46	

Analytical Method: Chloride by EPA 300

Seq Number: 3124455

Parent Sample Id: 660027-001

Matrix: Soil

MS Sample Id: 660027-001 S

Prep Method: E300P

Date Prep: 04.28.2020

MSD Sample Id: 660027-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	48.4	200	257	104	258	105	90-110	0	20	mg/kg	04.28.2020 19:02	

Analytical Method: Chloride by EPA 300

Seq Number: 3124455

Parent Sample Id: 660037-003

Matrix: Soil

MS Sample Id: 660037-003 S

Prep Method: E300P

Date Prep: 04.28.2020

MSD Sample Id: 660037-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1130	200	1330	100	1330	100	90-110	0	20	mg/kg	04.28.2020 20:21	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124494

MB Sample Id: 7702304-1-BLK

Matrix: Solid

LCS Sample Id: 7702304-1-BKS

Prep Method: SW8015P

Date Prep: 04.28.2020

LCSD Sample Id: 7702304-1-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	975	98	937	94	70-135	4	35	mg/kg	04.28.2020 23:23	
Diesel Range Organics (DRO)	<50.0	1000	1080	108	1070	107	70-135	1	35	mg/kg	04.28.2020 23:23	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		127		131		70-135	%	04.28.2020 23:23
o-Terphenyl	123		122		128		70-135	%	04.28.2020 23:23

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124494

Matrix: Solid

MB Sample Id: 7702304-1-BLK

Prep Method: SW8015P

Date Prep: 04.28.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.28.2020 23:03	

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

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

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

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



LT Environmental, Inc.

Ross Ranch 6 Fed 001H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124494

Parent Sample Id: 659919-037

Matrix: Soil

MS Sample Id: 659919-037 S

Prep Method: SW8015P

Date Prep: 04.28.2020

MSD Sample Id: 659919-037 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	1000	879	88	905	90	70-135	3	35	mg/kg	04.29.2020 00:25	
Diesel Range Organics (DRO)	<50.0	1000	968	97	977	97	70-135	1	35	mg/kg	04.29.2020 00:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		112		70-135	%	04.29.2020 00:25
o-Terphenyl	119		111		70-135	%	04.29.2020 00:25

Analytical Method: BTEX by EPA 8021B

Seq Number: 3124449

MB Sample Id: 7702273-1-BLK

Matrix: Solid

LCS Sample Id: 7702273-1-BKS

Prep Method: SW5035A

Date Prep: 04.28.2020

LCSD Sample Id: 7702273-1-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	0.110	110	0.117	117	70-130	6	35	mg/kg	04.28.2020 22:12	
Toluene	<0.00200	0.100	0.0984	98	0.106	106	70-130	7	35	mg/kg	04.28.2020 22:12	
Ethylbenzene	<0.00200	0.100	0.0929	93	0.0989	99	71-129	6	35	mg/kg	04.28.2020 22:12	
m,p-Xylenes	<0.00400	0.200	0.181	91	0.193	97	70-135	6	35	mg/kg	04.28.2020 22:12	
o-Xylene	<0.00200	0.100	0.0932	93	0.0996	100	71-133	7	35	mg/kg	04.28.2020 22:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		108		112		70-130	%	04.28.2020 22:12
4-Bromofluorobenzene	108		98		100		70-130	%	04.28.2020 22:12

Analytical Method: BTEX by EPA 8021B

Seq Number: 3124449

Parent Sample Id: 660036-001

Matrix: Soil

MS Sample Id: 660036-001 S

Prep Method: SW5035A

Date Prep: 04.28.2020

MSD Sample Id: 660036-001 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	0.126	125	0.120	120	70-130	5	35	mg/kg	04.28.2020 22:55	
Toluene	<0.00202	0.101	0.113	112	0.105	105	70-130	7	35	mg/kg	04.28.2020 22:55	
Ethylbenzene	<0.00202	0.101	0.106	105	0.0982	98	71-129	8	35	mg/kg	04.28.2020 22:55	
m,p-Xylenes	<0.00404	0.202	0.206	102	0.191	96	70-135	8	35	mg/kg	04.28.2020 22:55	
o-Xylene	<0.00202	0.101	0.105	104	0.0989	99	71-133	6	35	mg/kg	04.28.2020 22:55	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		108		70-130	%	04.28.2020 22:55
4-Bromofluorobenzene	92		96		70-130	%	04.28.2020 22:55

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

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

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

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



Chain of Custody

Work Order No: 16100037

Project Manager: Don Meir		Bill to: (if different) Kyle Little	
Company Name: LT Environmental, Inc. Permian City		Company Name: XTO Energy	
Address: 3300 North A Street		Address: 522 W. Hermod St.	
City, State ZIP: Midland, TX 79705		City, State ZIP: Carlsbad, NM 88220	
Phone: (432) 236-3849		Email: emerec@tenv.com, dmeir@tenv.com	
Project Name: Ross Ranch 6 Fed 001H		Turn Around	
Project Number: 012920049		Routine ☒ Rush: ☐	
Project Location: Eddy County		Rush: ☐	
Sampler's Name: Ezequiel Moreno		Due Date: ☐	
PO #: ☐		Quote #: ☐	

SAMPLE RECEIPT										ANALYSIS REQUEST										Preservative Codes													
Project Name:		Ross Ranch 6 Feb 001H								Turn Around		Pre-Code																					
Project Number:		012920049								Routine		☒												MeOH: Me									
Project Location		Eddy County								Rush:														None: NO									
Sampler's Name:		Ezeduiet Moreno								Due Date:														HNO3: HN									
PO #:		Quote #:																						H2SO4: H2									
Temp Blank:		Yes ☒ No ☐		Wet Ice:		Yes ☒ No ☐		Thermometer ID														HCL: HL											
Temperature (°C):		1.0						T-NM-007														NaOH: Na											
Received Intact:		Yes ☒ No ☐						Correction Factor:		-0.2												Zn Acetate+ NaOH: Zn											
Cooler Custody Seals:		Yes ☒ No ☐						Total Containers:		6												TAT starts the day received by the lab, if received by 4:00pm											
Sample Custody Seals:		Yes ☒ No ☐																															
Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers												Sample Comments															
	F501	S	4/26/20	1303	0.5'	1	X	TPH (EPA 8015)																									
	F502			1305			X	BTEX (EPA 0-8021)																									
	F503			1310			X	Chloride (EPA 300.0)																									
	F504			1315																													
	F505			1320																													
	F506			1325																													

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 Ti 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 Ti 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
<i>Ezequiel Moreno</i>	<i>Don Meir</i>	4/25/20 16:48			
		4			
		6			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.28.2020 04.28.00 PM

Work Order #: 660037

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 *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	Samples received in bulk containers.
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	No	
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 04.28.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.29.2020



Analytical Report 660346

for

LT Environmental, Inc.

Project Manager: Dan Moir

Ross Ranch 6Fed 001 H

012920049

05.01.2020

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: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



05.01.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **660346**

Ross Ranch 6Fed 001 H

Project Address: Eddy County

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 660346. 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. 660346 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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 660346****LT Environmental, Inc., Arvada, CO**

Ross Ranch 6Fed 001 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS07	S	04.30.2020 13:57	1.5 ft	660346-001
FS08	S	04.30.2020 14:00	1 ft	660346-002
FS09	S	04.30.2020 09:52	0.5 ft	660346-003
FS10	S	04.30.2020 09:57	0.5 ft	660346-004
FS11	S	04.30.2020 10:00	0.5 ft	660346-005
FS12	S	04.30.2020 10:02	0.5 ft	660346-006
FS13	S	04.30.2020 12:14	0.5 ft	660346-007
FS14	S	04.30.2020 12:16	0.5 ft	660346-008
FS15	S	04.30.2020 12:19	0.5 ft	660346-009
FS16	S	04.30.2020 12:21	0.5 ft	660346-010
FS17	S	04.30.2020 13:22	0.5 ft	660346-011
FS18	S	04.30.2020 13:24	0.5 ft	660346-012
FS19	S	04.30.2020 13:27	0.5 ft	660346-013
FS20	S	04.30.2020 14:20	1 ft	660346-014
FS21	S	04.30.2020 13:31	1.5 ft	660346-015
FS22	S	04.30.2020 13:34	1 ft	660346-016



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Ross Ranch 6Fed 001 H*

Project ID: 012920049
Work Order Number(s): 660346

Report Date: 05.01.2020
Date Received: 04.30.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 660346

LT Environmental, Inc., Arvada, CO

Project Name: Ross Ranch 6Fed 001 H

Project Id: 012920049

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Thu 04.30.2020 17:27

Report Date: 05.01.2020 12:22

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	660346-001	660346-002	660346-003	660346-004	660346-005	660346-006
	<i>Field Id:</i>	FS07	FS08	FS09	FS10	FS11	FS12
	<i>Depth:</i>	1.5- ft	1- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	04.30.2020 13:57	04.30.2020 14:00	04.30.2020 09:52	04.30.2020 09:57	04.30.2020 10:00	04.30.2020 10:02
BTEX by EPA 8021B	<i>Extracted:</i>	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30
	<i>Analyzed:</i>	04.30.2020 20:45	04.30.2020 21:06	04.30.2020 20:23	04.30.2020 21:27	04.30.2020 21:49	04.30.2020 22:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.0189 0.0189	<0.0196 0.0196	<0.00200 0.00200	<0.00202 0.00202	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.0189 0.0189	<0.0196 0.0196	<0.00200 0.00200	<0.00202 0.00202	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.0189 0.0189	<0.0196 0.0196	<0.00200 0.00200	<0.00202 0.00202	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.0377 0.0377	<0.0392 0.0392	<0.00400 0.00400	<0.00404 0.00404	<0.00397 0.00397	<0.00399 0.00399
o-Xylene		<0.0189 0.0189	<0.0196 0.0196	<0.00200 0.00200	<0.00202 0.00202	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.0189 0.0189	<0.0196 0.0196	<0.00200 0.00200	<0.00202 0.00202	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.0189 0.0189	<0.0196 0.0196	<0.00200 0.00200	<0.00202 0.00202	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	04.30.2020 17:48	04.30.2020 17:48	04.30.2020 17:48	04.30.2020 17:48	04.30.2020 17:48	04.30.2020 17:48
	<i>Analyzed:</i>	04.30.2020 20:32	04.30.2020 20:49	04.30.2020 20:54	04.30.2020 21:00	04.30.2020 21:06	04.30.2020 21:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		189 49.9	39.7 9.92	64.3 50.1	67.0 50.3	369 50.4	86.5 49.9
TPH by SW8015 Mod	<i>Extracted:</i>	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30
	<i>Analyzed:</i>	04.30.2020 21:41	04.30.2020 22:02	04.30.2020 22:22	04.30.2020 22:42	04.30.2020 23:03	04.30.2020 23:43
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<49.8 49.8	<49.8 49.8	<49.9 49.9	<50.2 50.2	<50.1 50.1
Diesel Range Organics (DRO)		257 50.2	187 49.8	129 49.8	84.1 49.9	214 50.2	52.8 50.1
Motor Oil Range Hydrocarbons (MRO)		84.3 50.2	<49.8 49.8	<49.8 49.8	<49.9 49.9	<50.2 50.2	<50.1 50.1
Total GRO-DRO		257 50.2	187 49.8	129 49.8	84.1 49.9	214 50.2	52.8 50.1
Total TPH		341 50.2	187 49.8	129 49.8	84.1 49.9	214 50.2	52.8 50.1

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 660346

LT Environmental, Inc., Arvada, CO

Project Name: Ross Ranch 6Fed 001 H

Project Id: 012920049

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Thu 04.30.2020 17:27

Report Date: 05.01.2020 12:22

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	660346-007	660346-008	660346-009	660346-010	660346-011	660346-012
	<i>Field Id:</i>	FS13	FS14	FS15	FS16	FS17	FS18
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	04.30.2020 12:14	04.30.2020 12:16	04.30.2020 12:19	04.30.2020 12:21	04.30.2020 13:22	04.30.2020 13:24
BTEX by EPA 8021B	<i>Extracted:</i>	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30
	<i>Analyzed:</i>	04.30.2020 22:32	04.30.2020 22:53	04.30.2020 23:14	04.30.2020 23:36	05.01.2020 00:40	05.01.2020 01:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00229 0.00229	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.0196 0.0196
Toluene		<0.00229 0.00229	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.0196 0.0196
Ethylbenzene		0.0709 0.00917	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.0196 0.0196
m,p-Xylenes		0.0495 0.0183	<0.00402 0.00402	<0.00400 0.00400	<0.00401 0.00401	<0.00404 0.00404	<0.0392 0.0392
o-Xylene		0.0406 0.00917	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.0196 0.0196
Total Xylenes		0.0901 0.00917	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.0196 0.0196
Total BTEX		0.161 0.00229	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.0196 0.0196
Chloride by EPA 300	<i>Extracted:</i>	04.30.2020 17:48	04.30.2020 17:48	04.30.2020 17:48	04.30.2020 17:48	04.30.2020 17:48	04.30.2020 17:48
	<i>Analyzed:</i>	04.30.2020 21:28	04.30.2020 21:34	04.30.2020 21:40	04.30.2020 21:45	04.30.2020 21:51	04.30.2020 22:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		358 49.9	43.5 9.98	93.2 10.1	75.4 9.90	105 9.96	124 9.92
TPH by SW8015 Mod	<i>Extracted:</i>	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30
	<i>Analyzed:</i>	05.01.2020 00:04	05.01.2020 00:24	05.01.2020 00:44	05.01.2020 01:05	05.01.2020 01:25	05.01.2020 01:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		59.3 50.1	<50.3 50.3	<50.1 50.1	<50.1 50.1	<49.9 49.9	<50.0 50.0
Diesel Range Organics (DRO)		837 50.1	<50.3 50.3	69.5 50.1	<50.1 50.1	133 49.9	255 50.0
Motor Oil Range Hydrocarbons (MRO)		64.9 50.1	<50.3 50.3	<50.1 50.1	<50.1 50.1	<49.9 49.9	<50.0 50.0
Total GRO-DRO		896 50.1	<50.3 50.3	69.5 50.1	<50.1 50.1	133 49.9	255 50.0
Total TPH		961 50.1	<50.3 50.3	69.5 50.1	<50.1 50.1	133 49.9	255 50.0

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 660346

LT Environmental, Inc., Arvada, CO

Project Name: Ross Ranch 6Fed 001 H

Project Id: 012920049

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Thu 04.30.2020 17:27

Report Date: 05.01.2020 12:22

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	660346-013	660346-014	660346-015	660346-016		
	<i>Field Id:</i>	FS19	FS20	FS21	FS22		
	<i>Depth:</i>	0.5- ft	1- ft	1.5- ft	1- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	04.30.2020 13:27	04.30.2020 14:20	04.30.2020 13:31	04.30.2020 13:34		
BTEX by EPA 8021B	<i>Extracted:</i>	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30		
	<i>Analyzed:</i>	05.01.2020 01:23	05.01.2020 01:44	05.01.2020 02:05	05.01.2020 02:27		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00200 0.00200	<0.0179 0.0179	<0.00201 0.00201	<0.00200 0.00200		
Toluene		<0.00200 0.00200	<0.0179 0.0179	<0.00201 0.00201	<0.00200 0.00200		
Ethylbenzene		<0.00200 0.00200	<0.0179 0.0179	<0.00201 0.00201	<0.00200 0.00200		
m,p-Xylenes		<0.00399 0.00399	<0.0357 0.0357	<0.00402 0.00402	<0.00401 0.00401		
o-Xylene		<0.00200 0.00200	<0.0179 0.0179	<0.00201 0.00201	<0.00200 0.00200		
Total Xylenes		<0.00200 0.00200	<0.0179 0.0179	<0.00201 0.00201	<0.00200 0.00200		
Total BTEX		<0.00200 0.00200	<0.0179 0.0179	<0.00201 0.00201	<0.00200 0.00200		
Chloride by EPA 300	<i>Extracted:</i>	04.30.2020 17:48	04.30.2020 17:48	04.30.2020 17:48	04.30.2020 17:48		
	<i>Analyzed:</i>	04.30.2020 22:14	04.30.2020 22:31	04.30.2020 22:36	04.30.2020 22:42		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		115 9.94	32.5 9.94	25.6 9.98	162 9.98		
TPH by SW8015 Mod	<i>Extracted:</i>	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30	04.30.2020 17:30		
	<i>Analyzed:</i>	05.01.2020 02:06	05.01.2020 02:26	05.01.2020 02:46	04.30.2020 21:41		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.1 50.1	<49.8 49.8	<50.1 50.1		
Diesel Range Organics (DRO)		344 50.2	190 50.1	87.5 49.8	<50.1 50.1		
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.1 50.1	<49.8 49.8	<50.1 50.1		
Total GRO-DRO		344 50.2	190 50.1	87.5 49.8	<50.1 50.1		
Total TPH		344 50.2	190 50.1	87.5 49.8	<50.1 50.1		

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Jessica Kramer
Project Manager



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS07** Matrix: Soil Date Received: 04.30.2020 17:27
 Lab Sample Id: 660346-001 Date Collected: 04.30.2020 13:57 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.30.2020 17:48 Basis: Wet Weight
 Seq Number: 3124742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	189	49.9	mg/kg	04.30.2020 20:32		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.30.2020 17:30 Basis: Wet Weight
 Seq Number: 3124745

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.30.2020 21:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	257	50.2	mg/kg	04.30.2020 21:41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	84.3	50.2	mg/kg	04.30.2020 21:41		1
Total GRO-DRO	PHC628	257	50.2	mg/kg	04.30.2020 21:41		1
Total TPH	PHC635	341	50.2	mg/kg	04.30.2020 21:41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	04.30.2020 21:41	
o-Terphenyl	84-15-1	107	%	70-135	04.30.2020 21:41	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS07**
Lab Sample Id: 660346-001

Matrix: Soil
Date Collected: 04.30.2020 13:57

Date Received: 04.30.2020 17:27
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0189	0.0189	mg/kg	04.30.2020 20:45	U	1
Toluene	108-88-3	<0.0189	0.0189	mg/kg	04.30.2020 20:45	U	1
Ethylbenzene	100-41-4	<0.0189	0.0189	mg/kg	04.30.2020 20:45	U	1
m,p-Xylenes	179601-23-1	<0.0377	0.0377	mg/kg	04.30.2020 20:45	U	1
o-Xylene	95-47-6	<0.0189	0.0189	mg/kg	04.30.2020 20:45	U	1
Total Xylenes	1330-20-7	<0.0189	0.0189	mg/kg	04.30.2020 20:45	U	1
Total BTEX		<0.0189	0.0189	mg/kg	04.30.2020 20:45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	04.30.2020 20:45		
1,4-Difluorobenzene	540-36-3	112	%	70-130	04.30.2020 20:45		



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS08**
Lab Sample Id: 660346-002

Matrix: Soil
Date Collected: 04.30.2020 14:00

Date Received: 04.30.2020 17:27
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.7	9.92	mg/kg	04.30.2020 20:49		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124745

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.30.2020 22:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	187	49.8	mg/kg	04.30.2020 22:02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.30.2020 22:02	U	1
Total GRO-DRO	PHC628	187	49.8	mg/kg	04.30.2020 22:02		1
Total TPH	PHC635	187	49.8	mg/kg	04.30.2020 22:02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	04.30.2020 22:02	
o-Terphenyl	84-15-1	113	%	70-135	04.30.2020 22:02	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS08**
Lab Sample Id: 660346-002

Matrix: Soil
Date Collected: 04.30.2020 14:00

Date Received: 04.30.2020 17:27
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0196	0.0196	mg/kg	04.30.2020 21:06	U	1
Toluene	108-88-3	<0.0196	0.0196	mg/kg	04.30.2020 21:06	U	1
Ethylbenzene	100-41-4	<0.0196	0.0196	mg/kg	04.30.2020 21:06	U	1
m,p-Xylenes	179601-23-1	<0.0392	0.0392	mg/kg	04.30.2020 21:06	U	1
o-Xylene	95-47-6	<0.0196	0.0196	mg/kg	04.30.2020 21:06	U	1
Total Xylenes	1330-20-7	<0.0196	0.0196	mg/kg	04.30.2020 21:06	U	1
Total BTEX		<0.0196	0.0196	mg/kg	04.30.2020 21:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.30.2020 21:06	
4-Bromofluorobenzene	460-00-4	104	%	70-130	04.30.2020 21:06	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS09** Matrix: Soil Date Received: 04.30.2020 17:27
 Lab Sample Id: 660346-003 Date Collected: 04.30.2020 09:52 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.30.2020 17:48 Basis: Wet Weight
 Seq Number: 3124742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	64.3	50.1	mg/kg	04.30.2020 20:54		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.30.2020 17:30 Basis: Wet Weight
 Seq Number: 3124745

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.30.2020 22:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	129	49.8	mg/kg	04.30.2020 22:22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.30.2020 22:22	U	1
Total GRO-DRO	PHC628	129	49.8	mg/kg	04.30.2020 22:22		1
Total TPH	PHC635	129	49.8	mg/kg	04.30.2020 22:22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	04.30.2020 22:22	
o-Terphenyl	84-15-1	116	%	70-135	04.30.2020 22:22	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS09**
Lab Sample Id: 660346-003

Matrix: Soil
Date Collected: 04.30.2020 09:52

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.30.2020 20:23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.30.2020 20:23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.30.2020 20:23	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.30.2020 20:23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.30.2020 20:23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.30.2020 20:23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.30.2020 20:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	04.30.2020 20:23	
4-Bromofluorobenzene	460-00-4	105	%	70-130	04.30.2020 20:23	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS10**
Lab Sample Id: 660346-004

Matrix: Soil
Date Collected: 04.30.2020 09:57

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	67.0	50.3	mg/kg	04.30.2020 21:00		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124745

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.30.2020 22:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	84.1	49.9	mg/kg	04.30.2020 22:42		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.30.2020 22:42	U	1
Total GRO-DRO	PHC628	84.1	49.9	mg/kg	04.30.2020 22:42		1
Total TPH	PHC635	84.1	49.9	mg/kg	04.30.2020 22:42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	04.30.2020 22:42	
o-Terphenyl	84-15-1	109	%	70-135	04.30.2020 22:42	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS10**
Lab Sample Id: 660346-004

Matrix: Soil
Date Collected: 04.30.2020 09:57

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.30.2020 21:27	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.30.2020 21:27	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.30.2020 21:27	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.30.2020 21:27	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.30.2020 21:27	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.30.2020 21:27	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.30.2020 21:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.30.2020 21:27	
4-Bromofluorobenzene	460-00-4	108	%	70-130	04.30.2020 21:27	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS11**
Lab Sample Id: 660346-005

Matrix: Soil
Date Collected: 04.30.2020 10:00

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	369	50.4	mg/kg	04.30.2020 21:06		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124745

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.30.2020 23:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	214	50.2	mg/kg	04.30.2020 23:03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.30.2020 23:03	U	1
Total GRO-DRO	PHC628	214	50.2	mg/kg	04.30.2020 23:03		1
Total TPH	PHC635	214	50.2	mg/kg	04.30.2020 23:03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	04.30.2020 23:03	
o-Terphenyl	84-15-1	115	%	70-135	04.30.2020 23:03	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS11**
Lab Sample Id: 660346-005

Matrix: Soil
Date Collected: 04.30.2020 10:00

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.30.2020 21:49	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.30.2020 21:49	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.30.2020 21:49	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.30.2020 21:49	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.30.2020 21:49	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.30.2020 21:49	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.30.2020 21:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.30.2020 21:49		
4-Bromofluorobenzene	460-00-4	101	%	70-130	04.30.2020 21:49		



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS12**
Lab Sample Id: 660346-006

Matrix: Soil
Date Collected: 04.30.2020 10:02

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	86.5	49.9	mg/kg	04.30.2020 21:23		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124745

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.30.2020 23:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	52.8	50.1	mg/kg	04.30.2020 23:43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.30.2020 23:43	U	1
Total GRO-DRO	PHC628	52.8	50.1	mg/kg	04.30.2020 23:43		1
Total TPH	PHC635	52.8	50.1	mg/kg	04.30.2020 23:43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	04.30.2020 23:43	
o-Terphenyl	84-15-1	113	%	70-135	04.30.2020 23:43	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS12**
Lab Sample Id: 660346-006

Matrix: Soil
Date Collected: 04.30.2020 10:02

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.30.2020 22:10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.30.2020 22:10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.30.2020 22:10	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.30.2020 22:10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.30.2020 22:10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.30.2020 22:10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.30.2020 22:10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	128	%	70-130	04.30.2020 22:10		
1,4-Difluorobenzene	540-36-3	116	%	70-130	04.30.2020 22:10		



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS13**
Lab Sample Id: 660346-007

Matrix: Soil
Date Collected: 04.30.2020 12:14

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	358	49.9	mg/kg	04.30.2020 21:28		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124745

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	59.3	50.1	mg/kg	05.01.2020 00:04		1
Diesel Range Organics (DRO)	C10C28DRO	837	50.1	mg/kg	05.01.2020 00:04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	64.9	50.1	mg/kg	05.01.2020 00:04		1
Total GRO-DRO	PHC628	896	50.1	mg/kg	05.01.2020 00:04		1
Total TPH	PHC635	961	50.1	mg/kg	05.01.2020 00:04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	05.01.2020 00:04	
o-Terphenyl	84-15-1	114	%	70-135	05.01.2020 00:04	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS13**
Lab Sample Id: 660346-007

Matrix: Soil
Date Collected: 04.30.2020 12:14

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00229	0.00229	mg/kg	04.30.2020 22:32	U	1
Toluene	108-88-3	<0.00229	0.00229	mg/kg	04.30.2020 22:32	U	1
Ethylbenzene	100-41-4	0.0709	0.00917	mg/kg	04.30.2020 22:32		1
m,p-Xylenes	179601-23-1	0.0495	0.0183	mg/kg	04.30.2020 22:32		1
o-Xylene	95-47-6	0.0406	0.00917	mg/kg	04.30.2020 22:32		1
Total Xylenes	1330-20-7	0.0901	0.00917	mg/kg	04.30.2020 22:32		1
Total BTEX		0.161	0.00229	mg/kg	04.30.2020 22:32		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	04.30.2020 22:32		
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.30.2020 22:32		



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS14** Matrix: Soil Date Received: 04.30.2020 17:27
 Lab Sample Id: 660346-008 Date Collected: 04.30.2020 12:16 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.30.2020 17:48 Basis: Wet Weight
 Seq Number: 3124742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	43.5	9.98	mg/kg	04.30.2020 21:34		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.30.2020 17:30 Basis: Wet Weight
 Seq Number: 3124745

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	05.01.2020 00:24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	05.01.2020 00:24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	05.01.2020 00:24	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	05.01.2020 00:24	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	05.01.2020 00:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	05.01.2020 00:24	
o-Terphenyl	84-15-1	112	%	70-135	05.01.2020 00:24	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS14**
Lab Sample Id: 660346-008

Matrix: Soil
Date Collected: 04.30.2020 12:16

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.30.2020 22:53	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.30.2020 22:53	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.30.2020 22:53	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.30.2020 22:53	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.30.2020 22:53	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.30.2020 22:53	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.30.2020 22:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116	%	70-130	04.30.2020 22:53	
4-Bromofluorobenzene	460-00-4	129	%	70-130	04.30.2020 22:53	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS15**
Lab Sample Id: 660346-009

Matrix: Soil
Date Collected: 04.30.2020 12:19

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	93.2	10.1	mg/kg	04.30.2020 21:40		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124745

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.01.2020 00:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	69.5	50.1	mg/kg	05.01.2020 00:44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.01.2020 00:44	U	1
Total GRO-DRO	PHC628	69.5	50.1	mg/kg	05.01.2020 00:44		1
Total TPH	PHC635	69.5	50.1	mg/kg	05.01.2020 00:44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	05.01.2020 00:44	
o-Terphenyl	84-15-1	101	%	70-135	05.01.2020 00:44	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS15**
Lab Sample Id: 660346-009

Matrix: Soil
Date Collected: 04.30.2020 12:19

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.30.2020 23:14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.30.2020 23:14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.30.2020 23:14	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.30.2020 23:14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.30.2020 23:14	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.30.2020 23:14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.30.2020 23:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.30.2020 23:14	
4-Bromofluorobenzene	460-00-4	110	%	70-130	04.30.2020 23:14	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS16**
Lab Sample Id: 660346-010

Matrix: Soil
Date Collected: 04.30.2020 12:21

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	75.4	9.90	mg/kg	04.30.2020 21:45		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124745

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.01.2020 01:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	05.01.2020 01:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.01.2020 01:05	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	05.01.2020 01:05	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	05.01.2020 01:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	05.01.2020 01:05	
o-Terphenyl	84-15-1	105	%	70-135	05.01.2020 01:05	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS16**
Lab Sample Id: 660346-010

Matrix: Soil
Date Collected: 04.30.2020 12:21

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.30.2020 23:36	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.30.2020 23:36	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.30.2020 23:36	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.30.2020 23:36	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.30.2020 23:36	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.30.2020 23:36	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.30.2020 23:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115	%	70-130	04.30.2020 23:36	
4-Bromofluorobenzene	460-00-4	111	%	70-130	04.30.2020 23:36	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS17**
Lab Sample Id: 660346-011

Matrix: Soil
Date Collected: 04.30.2020 13:22

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	105	9.96	mg/kg	04.30.2020 21:51		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124745

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.01.2020 01:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	133	49.9	mg/kg	05.01.2020 01:25		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.01.2020 01:25	U	1
Total GRO-DRO	PHC628	133	49.9	mg/kg	05.01.2020 01:25		1
Total TPH	PHC635	133	49.9	mg/kg	05.01.2020 01:25		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	05.01.2020 01:25	
o-Terphenyl	84-15-1	113	%	70-135	05.01.2020 01:25	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS17**
Lab Sample Id: 660346-011

Matrix: Soil
Date Collected: 04.30.2020 13:22

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.01.2020 00:40	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.01.2020 00:40	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.01.2020 00:40	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	05.01.2020 00:40	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.01.2020 00:40	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.01.2020 00:40	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.01.2020 00:40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	114	%	70-130	05.01.2020 00:40		
4-Bromofluorobenzene	460-00-4	106	%	70-130	05.01.2020 00:40		



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS18**
Lab Sample Id: 660346-012

Matrix: Soil
Date Collected: 04.30.2020 13:24

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	124	9.92	mg/kg	04.30.2020 22:08		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124745

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.01.2020 01:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	255	50.0	mg/kg	05.01.2020 01:46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.01.2020 01:46	U	1
Total GRO-DRO	PHC628	255	50.0	mg/kg	05.01.2020 01:46		1
Total TPH	PHC635	255	50.0	mg/kg	05.01.2020 01:46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	05.01.2020 01:46	
o-Terphenyl	84-15-1	109	%	70-135	05.01.2020 01:46	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS18**
Lab Sample Id: 660346-012

Matrix: Soil
Date Collected: 04.30.2020 13:24

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0196	0.0196	mg/kg	05.01.2020 01:01	U	1
Toluene	108-88-3	<0.0196	0.0196	mg/kg	05.01.2020 01:01	U	1
Ethylbenzene	100-41-4	<0.0196	0.0196	mg/kg	05.01.2020 01:01	U	1
m,p-Xylenes	179601-23-1	<0.0392	0.0392	mg/kg	05.01.2020 01:01	U	1
o-Xylene	95-47-6	<0.0196	0.0196	mg/kg	05.01.2020 01:01	U	1
Total Xylenes	1330-20-7	<0.0196	0.0196	mg/kg	05.01.2020 01:01	U	1
Total BTEX		<0.0196	0.0196	mg/kg	05.01.2020 01:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	05.01.2020 01:01	
1,4-Difluorobenzene	540-36-3	113	%	70-130	05.01.2020 01:01	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS19** Matrix: Soil Date Received: 04.30.2020 17:27
 Lab Sample Id: 660346-013 Date Collected: 04.30.2020 13:27 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.30.2020 17:48 Basis: Wet Weight
 Seq Number: 3124742

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	115	9.94	mg/kg	04.30.2020 22:14		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.30.2020 17:30 Basis: Wet Weight
 Seq Number: 3124745

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.01.2020 02:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	344	50.2	mg/kg	05.01.2020 02:06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.01.2020 02:06	U	1
Total GRO-DRO	PHC628	344	50.2	mg/kg	05.01.2020 02:06		1
Total TPH	PHC635	344	50.2	mg/kg	05.01.2020 02:06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	05.01.2020 02:06	
o-Terphenyl	84-15-1	108	%	70-135	05.01.2020 02:06	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS19**
Lab Sample Id: 660346-013

Matrix: Soil
Date Collected: 04.30.2020 13:27

Date Received: 04.30.2020 17:27
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.01.2020 01:23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.01.2020 01:23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.01.2020 01:23	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.01.2020 01:23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.01.2020 01:23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.01.2020 01:23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.01.2020 01:23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	05.01.2020 01:23		
1,4-Difluorobenzene	540-36-3	107	%	70-130	05.01.2020 01:23		



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS20**
Lab Sample Id: 660346-014

Matrix: Soil
Date Collected: 04.30.2020 14:20

Date Received: 04.30.2020 17:27
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.5	9.94	mg/kg	04.30.2020 22:31		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124745

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.01.2020 02:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	190	50.1	mg/kg	05.01.2020 02:26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.01.2020 02:26	U	1
Total GRO-DRO	PHC628	190	50.1	mg/kg	05.01.2020 02:26		1
Total TPH	PHC635	190	50.1	mg/kg	05.01.2020 02:26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	05.01.2020 02:26	
o-Terphenyl	84-15-1	107	%	70-135	05.01.2020 02:26	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS20**
Lab Sample Id: 660346-014

Matrix: Soil
Date Collected: 04.30.2020 14:20

Date Received: 04.30.2020 17:27
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0179	0.0179	mg/kg	05.01.2020 01:44	U	1
Toluene	108-88-3	<0.0179	0.0179	mg/kg	05.01.2020 01:44	U	1
Ethylbenzene	100-41-4	<0.0179	0.0179	mg/kg	05.01.2020 01:44	U	1
m,p-Xylenes	179601-23-1	<0.0357	0.0357	mg/kg	05.01.2020 01:44	U	1
o-Xylene	95-47-6	<0.0179	0.0179	mg/kg	05.01.2020 01:44	U	1
Total Xylenes	1330-20-7	<0.0179	0.0179	mg/kg	05.01.2020 01:44	U	1
Total BTEX		<0.0179	0.0179	mg/kg	05.01.2020 01:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	05.01.2020 01:44		
1,4-Difluorobenzene	540-36-3	113	%	70-130	05.01.2020 01:44		



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS21**
Lab Sample Id: 660346-015

Matrix: Soil
Date Collected: 04.30.2020 13:31

Date Received: 04.30.2020 17:27
Sample Depth: 1.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25.6	9.98	mg/kg	04.30.2020 22:36		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124745

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	05.01.2020 02:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	87.5	49.8	mg/kg	05.01.2020 02:46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	05.01.2020 02:46	U	1
Total GRO-DRO	PHC628	87.5	49.8	mg/kg	05.01.2020 02:46		1
Total TPH	PHC635	87.5	49.8	mg/kg	05.01.2020 02:46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	05.01.2020 02:46	
o-Terphenyl	84-15-1	114	%	70-135	05.01.2020 02:46	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS21**
Lab Sample Id: 660346-015

Matrix: Soil
Date Collected: 04.30.2020 13:31

Date Received: 04.30.2020 17:27
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.01.2020 02:05	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.01.2020 02:05	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.01.2020 02:05	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.01.2020 02:05	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.01.2020 02:05	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.01.2020 02:05	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.01.2020 02:05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	05.01.2020 02:05		
4-Bromofluorobenzene	460-00-4	113	%	70-130	05.01.2020 02:05		



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS22**
Lab Sample Id: 660346-016

Matrix: Soil
Date Collected: 04.30.2020 13:34

Date Received: 04.30.2020 17:27
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124742

Date Prep: 04.30.2020 17:48

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	162	9.98	mg/kg	04.30.2020 22:42		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124749

Date Prep: 04.30.2020 17:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.30.2020 21:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.30.2020 21:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.30.2020 21:41	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.30.2020 21:41	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.30.2020 21:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	04.30.2020 21:41	
o-Terphenyl	84-15-1	112	%	70-135	04.30.2020 21:41	



Certificate of Analytical Results 660346

LT Environmental, Inc., Arvada, CO

Ross Ranch 6Fed 001 H

Sample Id: **FS22**
Lab Sample Id: 660346-016

Matrix: Soil
Date Collected: 04.30.2020 13:34

Date Received: 04.30.2020 17:27
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.30.2020 17:30

Basis: Wet Weight

Seq Number: 3124718

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.01.2020 02:27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.01.2020 02:27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.01.2020 02:27	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.01.2020 02:27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.01.2020 02:27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.01.2020 02:27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.01.2020 02:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	05.01.2020 02:27		
1,4-Difluorobenzene	540-36-3	114	%	70-130	05.01.2020 02:27		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Ross Ranch 6Fed 001 H

Analytical Method: Chloride by EPA 300

Seq Number: 3124742

MB Sample Id: 7702475-1-BLK

Matrix: Solid

LCS Sample Id: 7702475-1-BKS

Prep Method: E300P

Date Prep: 04.30.2020

LCSD Sample Id: 7702475-1-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	257	103	257	103	90-110	0	20	mg/kg	04.30.2020 20:20	

Analytical Method: Chloride by EPA 300

Seq Number: 3124742

Parent Sample Id: 660346-001

Matrix: Soil

MS Sample Id: 660346-001 S

Prep Method: E300P

Date Prep: 04.30.2020

MSD Sample Id: 660346-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	189	200	393	102	391	101	90-110	1	20	mg/kg	04.30.2020 20:37	

Analytical Method: Chloride by EPA 300

Seq Number: 3124742

Parent Sample Id: 660346-011

Matrix: Soil

MS Sample Id: 660346-011 S

Prep Method: E300P

Date Prep: 04.30.2020

MSD Sample Id: 660346-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	105	200	317	106	308	102	90-110	3	20	mg/kg	04.30.2020 21:57	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124745

MB Sample Id: 7702485-1-BLK

Matrix: Solid

LCS Sample Id: 7702485-1-BKS

Prep Method: SW8015P

Date Prep: 04.30.2020

LCSD Sample Id: 7702485-1-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	1090	109	857	86	70-135	24	35	mg/kg	04.30.2020 12:30	
Diesel Range Organics (DRO)	<50.0	1000	1120	112	961	96	70-135	15	35	mg/kg	04.30.2020 12:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		127		111		70-135	%	04.30.2020 12:30
o-Terphenyl	101		120		108		70-135	%	04.30.2020 12:30

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124749

MB Sample Id: 7702481-1-BLK

Matrix: Solid

LCS Sample Id: 7702481-1-BKS

Prep Method: SW8015P

Date Prep: 04.30.2020

LCSD Sample Id: 7702481-1-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	951	95	839	84	70-135	13	35	mg/kg	04.30.2020 12:30	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	921	92	70-135	15	35	mg/kg	04.30.2020 12:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		123		120		70-135	%	04.30.2020 12:30
o-Terphenyl	109		122		106		70-135	%	04.30.2020 12:30

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

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

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

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



LT Environmental, Inc.

Ross Ranch 6Fed 001 H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124745

Matrix: Solid

Prep Method: SW8015P

Date Prep: 04.30.2020

MB Sample Id: 7702485-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

MB
Result

<50.0

Units

mg/kg

Analysis
Date

04.30.2020 12:10

Flag

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124749

Matrix: Solid

Prep Method: SW8015P

Date Prep: 04.30.2020

MB Sample Id: 7702481-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

MB
Result

<50.0

Units

mg/kg

Analysis
Date

04.30.2020 12:10

Flag

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124745

Matrix: Soil

Prep Method: SW8015P

Date Prep: 04.30.2020

Parent Sample Id: 660344-001

MS Sample Id: 660344-001 S

MSD Sample Id: 660344-001 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

Parent
Result

<50.3

Spike
Amount

1010

MS
Result

916

MS
%Rec

91

MSD
Result

928

MSD
%Rec

93

Limits

70-135

%RPD

1

RPD
Limit

35

Units

mg/kg

Analysis
Date

04.30.2020 19:38

Flag

Diesel Range Organics (DRO)

<50.3

1010

1020

101

1040

104

70-135

2

35

mg/kg

04.30.2020 19:38

Surrogate

1-Chlorooctane

MS
%Rec

116

MS
FlagMSD
%Rec

118

MSD
Flag

Limits

70-135

Units

%

Analysis
Date

04.30.2020 19:38

o-Terphenyl

115

118

70-135

%

04.30.2020 19:38

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124749

Matrix: Soil

Prep Method: SW8015P

Date Prep: 04.30.2020

Parent Sample Id: 660344-002

MS Sample Id: 660344-002 S

MSD Sample Id: 660344-002 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

Parent
Result

<49.8

Spike
Amount

995

MS
Result

888

MS
%Rec

89

MSD
Result

888

MSD
%Rec

89

Limits

70-135

%RPD

0

RPD
Limit

35

Units

mg/kg

Analysis
Date

04.30.2020 19:38

Flag

Diesel Range Organics (DRO)

<49.8

995

1000

101

1000

100

70-135

0

35

mg/kg

04.30.2020 19:38

Surrogate

1-Chlorooctane

MS
%Rec

116

MS
FlagMSD
%Rec

109

MSD
Flag

Limits

70-135

Units

%

Analysis
Date

04.30.2020 19:38

o-Terphenyl

115

114

70-135

%

04.30.2020 19:38

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

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

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

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



LT Environmental, Inc.

Ross Ranch 6Fed 001 H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3124718

MB Sample Id: 7702473-1-BLK

Matrix: Solid

LCS Sample Id: 7702473-1-BKS

Prep Method: SW5035A

Date Prep: 04.30.2020

LCSD Sample Id: 7702473-1-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	0.0978	98	0.106	106	70-130	8	35	mg/kg	04.30.2020 18:36	
Toluene	<0.00200	0.100	0.0899	90	0.0974	97	70-130	8	35	mg/kg	04.30.2020 18:36	
Ethylbenzene	<0.00200	0.100	0.0829	83	0.0909	91	71-129	9	35	mg/kg	04.30.2020 18:36	
m,p-Xylenes	<0.00400	0.200	0.164	82	0.178	89	70-135	8	35	mg/kg	04.30.2020 18:36	
o-Xylene	<0.00200	0.100	0.0880	88	0.0951	95	71-133	8	35	mg/kg	04.30.2020 18:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		110		108		70-130	%	04.30.2020 18:36
4-Bromofluorobenzene	102		101		97		70-130	%	04.30.2020 18:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3124718

Parent Sample Id: 660346-003

Matrix: Soil

MS Sample Id: 660346-003 S

Prep Method: SW5035A

Date Prep: 04.30.2020

MSD Sample Id: 660346-003 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	0.105	104	0.104	104	70-130	1	35	mg/kg	04.30.2020 19:19	
Toluene	<0.00202	0.101	0.0947	94	0.0956	96	70-130	1	35	mg/kg	04.30.2020 19:19	
Ethylbenzene	<0.00202	0.101	0.0865	86	0.0868	87	71-129	0	35	mg/kg	04.30.2020 19:19	
m,p-Xylenes	<0.00403	0.202	0.166	82	0.168	84	70-135	1	35	mg/kg	04.30.2020 19:19	
o-Xylene	<0.00202	0.101	0.0836	83	0.0843	84	71-133	1	35	mg/kg	04.30.2020 19:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		107		70-130	%	04.30.2020 19:19
4-Bromofluorobenzene	100		107		70-130	%	04.30.2020 19:19

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: 16603410

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

www.xenco.com Page 1 of 2

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:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	emoreno@ltenv.com

Program: UST/PST	☐ PRP	☐ Brownfields	☐ RC	☐ Unperfund
State of Project:				
Reporting Level II	☐	Level III	☐	PST/UST
Reporting Level IV	☐	RRP	☐	Level IV
Deliverables: EDD	☐	ADAPT	☐	Other:

ANALYSIS REQUEST

Work Order Notes

Project Name:	Ross Ranch 6 Fed 001H	Turn Around	☒
Project Number:	012920019	Routine	☐
P.O. Number:	Eddy County	Rush:	
Sampler's Name:	Ezequiel Moreno	Due Date:	

SAMPLE RECEIPT	Temp Blank:	☒ Yes	☒ No	Wet Ice:	☒ Yes	☒ No
Temperature (°C):	2.8	Thermometer ID				
Received In tact:	☒ Yes	☒ No	Correction Factor:			
Cooler Custody Seals:	☒ Yes	☒ No	Total Containers:			
Sample Custody Seals:	☒ Yes	☒ No	16			

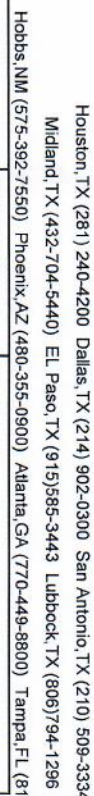
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (%)	BTEX	Chloride											Sample Comments	
FS07	S	4/30/20	1357	1.5'	1	X	X	X												Rush: 24 hrs
FS08			1400	1'																
FS09			0952	0.5																
FS10			0957																	
FS11			1000																	
FS12			1002																	
FS13			1214																	
FS14			1216																	
FS15			1219																	
FS16			1221																	

Total 200.7 / 6010 200.8 / 6020:
 Circle Method(s) and Metal(s) to be analyzed

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 Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti 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 <i>[Signature]</i>	<i>[Signature]</i>	4/30/20 17:23	2		
3			4		
5			6		



Chain of Custody

Work Order No:

10003410

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:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	emoreno@ltenv.com

Work Order Comments	
Program: UST/PST	☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:	
Reporting Level II	☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD	☐ ADAPT ☐ Other:

Project Name:	Ross Ranch & Fed 001H	Turn Around	ANALYSIS REQUEST	Work Order Notes
Project Number:	0129200 Hq	Routine ☒		
P.O. Number:	Eddy County	Rush:		
Sampler's Name:	Ezequiel Moreno	Due Date:		
SAMPLE RECEIPT				
Temperature (°C):		Temp Blank: Yes No Wet Ice: Yes No		
Received intact:	Yes No	Thermometer ID		
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Total Containers:		
Number of Containers				
(EPA 8015)				
(EPA 8021)				
(EPA 300.0)				
TAT starts the day received by the lab, if received by 4:30pm				

[illegible]

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 Ti Sn U V Zn
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U			
			1631 / 245.1 / 7470 / 7471 : Hg

of service. Xencro 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 Xencro. A minimum charge of \$75.00 will be applied to each project and a charge of \$3 for each sample submitted to Xencro, but not analyzed. These terms will be enforced unless previously negotiated. Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xencro, its affiliates and subcontractors. It assigns standard terms and conditions.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 		6/30/20 17:27			
3					
5					



Certificate of Analysis Summary 660708

LT Environmental, Inc., Arvada, CO

Project Name: Ross Ranch 6 Fed 001H

Project Id: 012920049

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 05.05.2020 17:02

Report Date: 05.07.2020 15:34

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	660708-001	660708-002	660708-003	660708-004	660708-005	660708-006
	<i>Field Id:</i>	FS23	FS24	FS25	FS26	FS27	SW01
	<i>Depth:</i>	1- ft	1- ft	0.5- ft	1- ft	0.5- ft	0-0.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	05.04.2020 10:17	05.04.2020 10:29	05.04.2020 10:45	05.04.2020 11:06	05.04.2020 11:30	05.04.2020 13:50
BTEX by EPA 8021B	<i>Extracted:</i>	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00
	<i>Analyzed:</i>	05.07.2020 02:19	05.07.2020 02:40	05.07.2020 03:02	05.07.2020 03:23	05.07.2020 03:44	05.07.2020 04:06
	<i>Units/RL:</i>	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	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	0.00751 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	0.0104 0.00397	<0.00399 0.00399	<0.00402 0.00402	<0.00400 0.00400	<0.00400 0.00400
o-Xylene		<0.00200 0.00200	0.00939 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	0.0198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	0.0273 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	05.06.2020 10:00	05.06.2020 10:00	05.06.2020 10:00	05.06.2020 10:00	05.06.2020 10:00	05.06.2020 10:00
	<i>Analyzed:</i>	05.06.2020 12:34	05.06.2020 12:40	05.06.2020 12:46	05.06.2020 12:51	05.06.2020 13:09	05.06.2020 13:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		198 10.1	42.8 9.94	4140 100	2190 99.8	6570 99.8	653 99.6
TPH by SW8015 Mod	<i>Extracted:</i>	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00
	<i>Analyzed:</i>	05.06.2020 17:53	05.06.2020 18:14	05.06.2020 18:34	05.06.2020 18:54	05.06.2020 19:15	05.06.2020 19:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<49.8 49.8	<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.1 50.1
Diesel Range Organics (DRO)		185 50.1	231 49.8	<50.2 50.2	<50.2 50.2	<50.1 50.1	412 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<49.8 49.8	<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.1 50.1
Total GRO-DRO		185 50.1	231 49.8	<50.2 50.2	<50.2 50.2	<50.1 50.1	412 50.1
Total TPH		185 50.1	231 49.8	<50.2 50.2	<50.2 50.2	<50.1 50.1	412 50.1

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

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

Jessica Kramer
Project Manager



Certificate of Analysis Summary 660708

LT Environmental, Inc., Arvada, CO

Project Name: Ross Ranch 6 Fed 001H

Project Id: 012920049

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 05.05.2020 17:02

Report Date: 05.07.2020 15:34

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	660708-007	660708-008	660708-009	660708-010	660708-011	660708-012
	Field Id:	SW03	SW04	SW05	SW06	SW07	SW08
	Depth:	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-0.5 ft	0-0.5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	05.04.2020 14:10	05.04.2020 14:20	05.04.2020 14:25	05.04.2020 14:35	05.04.2020 14:40	05.04.2020 14:50
BTEX by EPA 8021B	Extracted:	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00
	Analyzed:	05.07.2020 04:27	05.07.2020 04:49	05.07.2020 05:10	05.07.2020 05:31	05.07.2020 06:36	05.07.2020 06:57
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00401 0.00401	<0.00400 0.00400	<0.00401 0.00401	<0.00402 0.00402	<0.00399 0.00399	<0.00400 0.00400
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	Extracted:	05.06.2020 10:00	05.06.2020 10:00	05.06.2020 10:00	05.06.2020 10:00	05.06.2020 10:00	05.06.2020 10:00
	Analyzed:	05.06.2020 15:10	05.06.2020 13:26	05.06.2020 13:32	05.06.2020 13:37	05.06.2020 13:55	05.06.2020 14:01
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		61.7 9.94	288 99.8	146 10.0	36.4 9.96	65.5 9.94	358 10.0
TPH by SW8015 Mod	Extracted:	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00	05.06.2020 17:00
	Analyzed:	05.06.2020 19:55	05.06.2020 20:15	05.06.2020 20:36	05.06.2020 21:16	05.06.2020 21:36	05.06.2020 21:57
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<49.9 49.9	<50.2 50.2	<50.3 50.3	<50.0 50.0	<50.1 50.1
Diesel Range Organics (DRO)		465 50.2	170 49.9	658 50.2	<50.3 50.3	96.5 50.0	525 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<49.9 49.9	71.7 50.2	<50.3 50.3	<50.0 50.0	<50.1 50.1
Total GRO-DRO		465 50.2	170 49.9	658 50.2	<50.3 50.3	96.5 50.0	525 50.1
Total TPH		465 50.2	170 49.9	730 50.2	<50.3 50.3	96.5 50.0	525 50.1

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

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

Jessica Kramer
Project Manager



Analytical Report 660708

for

LT Environmental, Inc.

Project Manager: Dan Moir

Ross Ranch 6 Fed 001H

012920049

05.07.2020

Collected By: Client

**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-23), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



05.07.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **660708**

Ross Ranch 6 Fed 001H

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) 660708. 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. 660708 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,

A handwritten signature in black ink that reads 'Jessica Kramer'.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 660708****LT Environmental, Inc., Arvada, CO**

Ross Ranch 6 Fed 001H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS23	S	05.04.2020 10:17	1 ft	660708-001
FS24	S	05.04.2020 10:29	1 ft	660708-002
FS25	S	05.04.2020 10:45	0.5 ft	660708-003
FS26	S	05.04.2020 11:06	1 ft	660708-004
FS27	S	05.04.2020 11:30	0.5 ft	660708-005
SW01	S	05.04.2020 13:50	0 - 0.5 ft	660708-006
SW03	S	05.04.2020 14:10	0 - 1 ft	660708-007
SW04	S	05.04.2020 14:20	0 - 1 ft	660708-008
SW05	S	05.04.2020 14:25	0 - 1 ft	660708-009
SW06	S	05.04.2020 14:35	0 - 1 ft	660708-010
SW07	S	05.04.2020 14:40	0 - 0.5 ft	660708-011
SW08	S	05.04.2020 14:50	0 - 0.5 ft	660708-012



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Ross Ranch 6 Fed 001H*

Project ID: 012920049
Work Order Number(s): 660708

Report Date: 05.07.2020
Date Received: 05.05.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS23**
Lab Sample Id: 660708-001

Matrix: Soil
Date Collected: 05.04.2020 10:17

Date Received: 05.05.2020 17:02
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	198	10.1	mg/kg	05.06.2020 12:34		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.06.2020 17:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	185	50.1	mg/kg	05.06.2020 17:53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.06.2020 17:53	U	1
Total GRO-DRO	PHC628	185	50.1	mg/kg	05.06.2020 17:53		1
Total TPH	PHC635	185	50.1	mg/kg	05.06.2020 17:53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	05.06.2020 17:53	
o-Terphenyl	84-15-1	127	%	70-135	05.06.2020 17:53	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS23**
Lab Sample Id: 660708-001

Matrix: Soil
Date Collected: 05.04.2020 10:17

Date Received: 05.05.2020 17:02
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Seq Number: 3125297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.07.2020 02:19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.07.2020 02:19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.07.2020 02:19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.07.2020 02:19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.07.2020 02:19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.07.2020 02:19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.07.2020 02:19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	05.07.2020 02:19		
4-Bromofluorobenzene	460-00-4	101	%	70-130	05.07.2020 02:19		



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS24**
Lab Sample Id: 660708-002

Matrix: Soil
Date Collected: 05.04.2020 10:29

Date Received: 05.05.2020 17:02
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	42.8	9.94	mg/kg	05.06.2020 12:40		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	05.06.2020 18:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	231	49.8	mg/kg	05.06.2020 18:14		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	05.06.2020 18:14	U	1
Total GRO-DRO	PHC628	231	49.8	mg/kg	05.06.2020 18:14		1
Total TPH	PHC635	231	49.8	mg/kg	05.06.2020 18:14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	05.06.2020 18:14	
o-Terphenyl	84-15-1	128	%	70-135	05.06.2020 18:14	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS24**
Lab Sample Id: 660708-002

Matrix: Soil
Date Collected: 05.04.2020 10:29

Date Received: 05.05.2020 17:02
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Seq Number: 3125297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.07.2020 02:40	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.07.2020 02:40	U	1
Ethylbenzene	100-41-4	0.00751	0.00198	mg/kg	05.07.2020 02:40		1
m,p-Xylenes	179601-23-1	0.0104	0.00397	mg/kg	05.07.2020 02:40		1
o-Xylene	95-47-6	0.00939	0.00198	mg/kg	05.07.2020 02:40		1
Total Xylenes	1330-20-7	0.0198	0.00198	mg/kg	05.07.2020 02:40		1
Total BTEX		0.0273	0.00198	mg/kg	05.07.2020 02:40		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	106	%	70-130	05.07.2020 02:40		
1,4-Difluorobenzene	540-36-3	103	%	70-130	05.07.2020 02:40		



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: FS25
Lab Sample Id: 660708-003

Matrix: Soil
Date Collected: 05.04.2020 10:45

Date Received: 05.05.2020 17:02
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4140	100	mg/kg	05.06.2020 12:46		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.06.2020 18:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.06.2020 18:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.06.2020 18:34	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	05.06.2020 18:34	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.06.2020 18:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	05.06.2020 18:34	
o-Terphenyl	84-15-1	129	%	70-135	05.06.2020 18:34	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS25**
Lab Sample Id: 660708-003

Matrix: Soil
Date Collected: 05.04.2020 10:45

Date Received: 05.05.2020 17:02
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Seq Number: 3125297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.07.2020 03:02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.07.2020 03:02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.07.2020 03:02	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.07.2020 03:02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.07.2020 03:02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.07.2020 03:02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.07.2020 03:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	05.07.2020 03:02		
1,4-Difluorobenzene	540-36-3	113	%	70-130	05.07.2020 03:02		



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LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS26**
Lab Sample Id: 660708-004

Matrix: Soil
Date Collected: 05.04.2020 11:06

Date Received: 05.05.2020 17:02
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2190	99.8	mg/kg	05.06.2020 12:51		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.06.2020 18:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.06.2020 18:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.06.2020 18:54	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	05.06.2020 18:54	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.06.2020 18:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	05.06.2020 18:54	
o-Terphenyl	84-15-1	118	%	70-135	05.06.2020 18:54	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS26**
Lab Sample Id: 660708-004

Matrix: Soil
Date Collected: 05.04.2020 11:06

Date Received: 05.05.2020 17:02
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Seq Number: 3125297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.07.2020 03:23	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.07.2020 03:23	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.07.2020 03:23	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.07.2020 03:23	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.07.2020 03:23	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.07.2020 03:23	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.07.2020 03:23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	05.07.2020 03:23		
1,4-Difluorobenzene	540-36-3	112	%	70-130	05.07.2020 03:23		



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: FS27
Lab Sample Id: 660708-005

Matrix: Soil
Date Collected: 05.04.2020 11:30

Date Received: 05.05.2020 17:02
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6570	99.8	mg/kg	05.06.2020 13:09		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.06.2020 19:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	05.06.2020 19:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.06.2020 19:15	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	05.06.2020 19:15	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	05.06.2020 19:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	05.06.2020 19:15	
o-Terphenyl	84-15-1	119	%	70-135	05.06.2020 19:15	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **FS27**
Lab Sample Id: 660708-005

Matrix: Soil
Date Collected: 05.04.2020 11:30

Date Received: 05.05.2020 17:02
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Seq Number: 3125297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.07.2020 03:44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.07.2020 03:44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.07.2020 03:44	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.07.2020 03:44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.07.2020 03:44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.07.2020 03:44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.07.2020 03:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	05.07.2020 03:44		
1,4-Difluorobenzene	540-36-3	115	%	70-130	05.07.2020 03:44		



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LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW01**
Lab Sample Id: 660708-006

Matrix: Soil
Date Collected: 05.04.2020 13:50

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	653	99.6	mg/kg	05.06.2020 13:14		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.06.2020 19:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	412	50.1	mg/kg	05.06.2020 19:35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.06.2020 19:35	U	1
Total GRO-DRO	PHC628	412	50.1	mg/kg	05.06.2020 19:35		1
Total TPH	PHC635	412	50.1	mg/kg	05.06.2020 19:35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	05.06.2020 19:35	
o-Terphenyl	84-15-1	122	%	70-135	05.06.2020 19:35	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW01**
Lab Sample Id: 660708-006

Matrix: Soil
Date Collected: 05.04.2020 13:50

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Seq Number: 3125297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.07.2020 04:06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.07.2020 04:06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.07.2020 04:06	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.07.2020 04:06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.07.2020 04:06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.07.2020 04:06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.07.2020 04:06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	115	%	70-130	05.07.2020 04:06		
4-Bromofluorobenzene	460-00-4	106	%	70-130	05.07.2020 04:06		



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW03**
Lab Sample Id: 660708-007

Matrix: Soil
Date Collected: 05.04.2020 14:10

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	61.7	9.94	mg/kg	05.06.2020 15:10		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.06.2020 19:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	465	50.2	mg/kg	05.06.2020 19:55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.06.2020 19:55	U	1
Total GRO-DRO	PHC628	465	50.2	mg/kg	05.06.2020 19:55		1
Total TPH	PHC635	465	50.2	mg/kg	05.06.2020 19:55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	05.06.2020 19:55	
o-Terphenyl	84-15-1	131	%	70-135	05.06.2020 19:55	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW03**
Lab Sample Id: 660708-007

Matrix: Soil
Date Collected: 05.04.2020 14:10

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Seq Number: 3125297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.07.2020 04:27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.07.2020 04:27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.07.2020 04:27	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.07.2020 04:27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.07.2020 04:27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.07.2020 04:27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.07.2020 04:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	05.07.2020 04:27		
4-Bromofluorobenzene	460-00-4	111	%	70-130	05.07.2020 04:27		



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW04**
Lab Sample Id: 660708-008

Matrix: Soil
Date Collected: 05.04.2020 14:20

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	288	99.8	mg/kg	05.06.2020 13:26		10

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.06.2020 20:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	170	49.9	mg/kg	05.06.2020 20:15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.06.2020 20:15	U	1
Total GRO-DRO	PHC628	170	49.9	mg/kg	05.06.2020 20:15		1
Total TPH	PHC635	170	49.9	mg/kg	05.06.2020 20:15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	05.06.2020 20:15	
o-Terphenyl	84-15-1	123	%	70-135	05.06.2020 20:15	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW04**
Lab Sample Id: 660708-008

Matrix: Soil
Date Collected: 05.04.2020 14:20

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Seq Number: 3125297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.07.2020 04:49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.07.2020 04:49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.07.2020 04:49	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.07.2020 04:49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.07.2020 04:49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.07.2020 04:49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.07.2020 04:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	115	%	70-130	05.07.2020 04:49		
4-Bromofluorobenzene	460-00-4	119	%	70-130	05.07.2020 04:49		



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW05**
Lab Sample Id: 660708-009

Matrix: Soil
Date Collected: 05.04.2020 14:25

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	146	10.0	mg/kg	05.06.2020 13:32		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.06.2020 20:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	658	50.2	mg/kg	05.06.2020 20:36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	71.7	50.2	mg/kg	05.06.2020 20:36		1
Total GRO-DRO	PHC628	658	50.2	mg/kg	05.06.2020 20:36		1
Total TPH	PHC635	730	50.2	mg/kg	05.06.2020 20:36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	05.06.2020 20:36	
o-Terphenyl	84-15-1	123	%	70-135	05.06.2020 20:36	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW05**
Lab Sample Id: 660708-009

Matrix: Soil
Date Collected: 05.04.2020 14:25

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Seq Number: 3125297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.07.2020 05:10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.07.2020 05:10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.07.2020 05:10	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.07.2020 05:10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.07.2020 05:10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.07.2020 05:10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.07.2020 05:10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	05.07.2020 05:10		
1,4-Difluorobenzene	540-36-3	106	%	70-130	05.07.2020 05:10		



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW06**
Lab Sample Id: 660708-010

Matrix: Soil
Date Collected: 05.04.2020 14:35

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	36.4	9.96	mg/kg	05.06.2020 13:37		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	05.06.2020 21:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	05.06.2020 21:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	05.06.2020 21:16	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	05.06.2020 21:16	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	05.06.2020 21:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	05.06.2020 21:16	
o-Terphenyl	84-15-1	122	%	70-135	05.06.2020 21:16	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW06**
Lab Sample Id: 660708-010

Matrix: Soil
Date Collected: 05.04.2020 14:35

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Seq Number: 3125297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.07.2020 05:31	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.07.2020 05:31	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.07.2020 05:31	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.07.2020 05:31	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.07.2020 05:31	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.07.2020 05:31	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.07.2020 05:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	05.07.2020 05:31	
1,4-Difluorobenzene	540-36-3	116	%	70-130	05.07.2020 05:31	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW07**
Lab Sample Id: 660708-011

Matrix: Soil
Date Collected: 05.04.2020 14:40

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	65.5	9.94	mg/kg	05.06.2020 13:55		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.06.2020 21:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	96.5	50.0	mg/kg	05.06.2020 21:36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.06.2020 21:36	U	1
Total GRO-DRO	PHC628	96.5	50.0	mg/kg	05.06.2020 21:36		1
Total TPH	PHC635	96.5	50.0	mg/kg	05.06.2020 21:36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	05.06.2020 21:36	
o-Terphenyl	84-15-1	123	%	70-135	05.06.2020 21:36	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW07**
Lab Sample Id: 660708-011

Matrix: Soil
Date Collected: 05.04.2020 14:40

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Seq Number: 3125297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.07.2020 06:36	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.07.2020 06:36	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.07.2020 06:36	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.07.2020 06:36	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.07.2020 06:36	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.07.2020 06:36	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.07.2020 06:36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	84	%	70-130	05.07.2020 06:36		
4-Bromofluorobenzene	460-00-4	92	%	70-130	05.07.2020 06:36		



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW08**
Lab Sample Id: 660708-012

Matrix: Soil
Date Collected: 05.04.2020 14:50

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3125245

Date Prep: 05.06.2020 10:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	358	10.0	mg/kg	05.06.2020 14:01		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3125293

Date Prep: 05.06.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.06.2020 21:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	525	50.1	mg/kg	05.06.2020 21:57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.06.2020 21:57	U	1
Total GRO-DRO	PHC628	525	50.1	mg/kg	05.06.2020 21:57		1
Total TPH	PHC635	525	50.1	mg/kg	05.06.2020 21:57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	05.06.2020 21:57	
o-Terphenyl	84-15-1	125	%	70-135	05.06.2020 21:57	



Certificate of Analytical Results 660708

LT Environmental, Inc., Arvada, CO

Ross Ranch 6 Fed 001H

Sample Id: **SW08**
Lab Sample Id: 660708-012

Matrix: Soil
Date Collected: 05.04.2020 14:50

Date Received: 05.05.2020 17:02
Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3125297

Prep Method: SW5035A

% Moisture:

Date Prep: 05.06.2020 17:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.07.2020 06:57	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.07.2020 06:57	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.07.2020 06:57	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.07.2020 06:57	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.07.2020 06:57	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.07.2020 06:57	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.07.2020 06:57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	05.07.2020 06:57		
1,4-Difluorobenzene	540-36-3	107	%	70-130	05.07.2020 06:57		



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. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Ross Ranch 6 Fed 001H

Analytical Method: Chloride by EPA 300

Seq Number: 3125245

MB Sample Id: 7702826-1-BLK

Matrix: Solid

LCS Sample Id: 7702826-1-BKS

Prep Method: E300P

Date Prep: 05.06.2020

LCSD Sample Id: 7702826-1-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	252	101	250	100	90-110	1	20	mg/kg	05.06.2020 12:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3125245

Parent Sample Id: 660685-004

Matrix: Soil

MS Sample Id: 660685-004 S

Prep Method: E300P

Date Prep: 05.06.2020

MSD Sample Id: 660685-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	464	200	658	97	655	96	90-110	0	20	mg/kg	05.06.2020 12:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3125245

Parent Sample Id: 660708-010

Matrix: Soil

MS Sample Id: 660708-010 S

Prep Method: E300P

Date Prep: 05.06.2020

MSD Sample Id: 660708-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	36.4	200	234	99	234	99	90-110	0	20	mg/kg	05.06.2020 13:43	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3125293

MB Sample Id: 7702869-1-BLK

Matrix: Solid

LCS Sample Id: 7702869-1-BKS

Prep Method: SW8015P

Date Prep: 05.06.2020

LCSD Sample Id: 7702869-1-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	1160	116	1120	112	70-135	4	35	mg/kg	05.06.2020 16:11	
Diesel Range Organics (DRO)	<50.0	1000	1250	125	1210	121	70-135	3	35	mg/kg	05.06.2020 16:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		135		132		70-135	%	05.06.2020 16:11
o-Terphenyl	119		120		118		70-135	%	05.06.2020 16:11

Analytical Method: TPH by SW8015 Mod

Seq Number: 3125293

Matrix: Solid

MB Sample Id: 7702869-1-BLK

Prep Method: SW8015P

Date Prep: 05.06.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	05.06.2020 15:51	

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

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

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

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



LT Environmental, Inc.

Ross Ranch 6 Fed 001H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3125293

Parent Sample Id: 660732-001

Matrix: Soil

MS Sample Id: 660732-001 S

Prep Method: SW8015P

Date Prep: 05.06.2020

MSD Sample Id: 660732-001 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	1000	1150	115	1130	114	70-135	2	35	mg/kg	05.06.2020 17:12	
Diesel Range Organics (DRO)	<50.0	1000	1160	116	1170	118	70-135	1	35	mg/kg	05.06.2020 17:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	135		133		70-135	%	05.06.2020 17:12
o-Terphenyl	117		117		70-135	%	05.06.2020 17:12

Analytical Method: BTEX by EPA 8021B

Seq Number: 3125297

MB Sample Id: 7702857-1-BLK

Matrix: Solid

LCS Sample Id: 7702857-1-BKS

Prep Method: SW5035A

Date Prep: 05.06.2020

LCSD Sample Id: 7702857-1-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	0.118	118	0.117	117	70-130	1	35	mg/kg	05.07.2020 00:32	
Toluene	<0.00200	0.100	0.107	107	0.105	105	70-130	2	35	mg/kg	05.07.2020 00:32	
Ethylbenzene	<0.00200	0.100	0.0994	99	0.0983	98	71-129	1	35	mg/kg	05.07.2020 00:32	
m,p-Xylenes	<0.00400	0.200	0.193	97	0.191	96	70-135	1	35	mg/kg	05.07.2020 00:32	
o-Xylene	<0.00200	0.100	0.101	101	0.0988	99	71-133	2	35	mg/kg	05.07.2020 00:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		109		109		70-130	%	05.07.2020 00:32
4-Bromofluorobenzene	106		100		99		70-130	%	05.07.2020 00:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3125297

Parent Sample Id: 660708-001

Matrix: Soil

MS Sample Id: 660708-001 S

Prep Method: SW5035A

Date Prep: 05.06.2020

MSD Sample Id: 660708-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.120	121	0.117	118	70-130	3	35	mg/kg	05.07.2020 10:10	
Toluene	<0.00199	0.0994	0.108	109	0.106	107	70-130	2	35	mg/kg	05.07.2020 10:10	
Ethylbenzene	<0.00199	0.0994	0.101	102	0.0984	99	71-129	3	35	mg/kg	05.07.2020 10:10	
m,p-Xylenes	<0.00398	0.199	0.195	98	0.191	96	70-135	2	35	mg/kg	05.07.2020 10:10	
o-Xylene	<0.00199	0.0994	0.100	101	0.0984	99	71-133	2	35	mg/kg	05.07.2020 10:10	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		108		70-130	%	05.07.2020 10:10
4-Bromofluorobenzene	98		100		70-130	%	05.07.2020 10:10

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

Revised Date 051418 Rev. 2018.



Work Order No: 1060708

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
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 233-3927
Hobbs, NM (575-392-7550)

Page 6 of 6

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	emoreno@ltenv.com, dmoir@ltenv.com

Work Order Comments	
Program: UST/ST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐ State of Project: Reporting Level: I ☐ Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐ Deliverables: EDD ☐ ADAPT ☐ Other: _____	

Project Name:	Boss Ranch 6 Fed 001H										Turn Around	ANALYSIS REQUEST	Work Order Notes
Project Number:	012920049												
P.O. Number:													
Project Name:	Ezequiel Moreno												
Due Date:													

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):							
Received Intact:	Yes	No					
Cooler Custody Seals:	Yes	No	N/A		Correction Factor:		
Sample Custody Seals:	Yes	No	N/A		Total Containers:		

Number of Containers

PA 8015)

EPA 0=8021)

le (EPA 300.0)

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

[illegible]

Circle Method(s) and Metal(s) to be analyzed	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 Ti Sn U V Zn		
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti 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
		5/5/20 17:02			

Download Date: 05/24/20 17:02:02