

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	NAB1909532167
District RP	2RP-5332
Facility ID	
Application ID	pAB1909531648

Release Notification

6LUEF-190730-C-1410

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) NAB1909532167
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.524429° Longitude -104.215108°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Avalon Delaware Unit #562	Site Type Production Well Facility
Date Release Discovered 3/9/2019	API# (if applicable) 30-015-24377

Unit Letter	Section	Township	Range	County
O	31	20S	28E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 5	Volume Recovered (bbls) 1
	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)
	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A release of fluids to the well pad occurred when a nipple on the pumping tee failed due to corrosion. The well was temporarily shut down to stop the leak and make repairs. A vacuum truck recovered free standing fluid. The nipple and valve were replaced and the well was returned to production. Additional third party resources have been retained to assist with remediation.

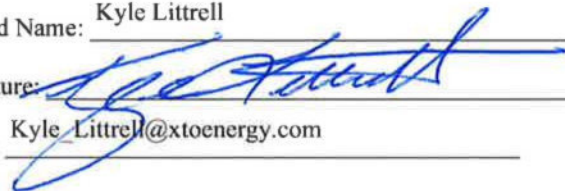
State of New Mexico
Oil Conservation Division

Incident ID	NAB1909532167
District RP	2RP-5332
Facility ID	
Application ID	pAB1909531648

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? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

Initial Response

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

☒ The source of the release has been stopped. ☒ 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: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u> Signature:  email: <u>Kyle.Littrell@xtoenergy.com</u>	Title: <u>SH&E Supervisor</u> Date: <u>3-22-19</u> Telephone: <u>432-221-7331</u>
OCD Only Received by:  Date: <u>4/4/2019</u>	

Incident ID	
District RP	2RP-5332
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

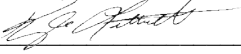
Characterization Report Checklist: <i>Each of the following items must be included in the report.</i> ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. ☒ Field data ☒ Data table of soil contaminant concentration data ☒ Depth to water 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.

Incident ID	
District RP	2RP-5332
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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: 07/30/2019

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-5332
Facility ID	
Application ID	

Closure

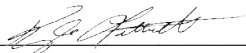
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/30/2019

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

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

District I
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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	NAB1914056348
District RP	2RP-5431
Facility ID	
Application ID	pAB1914056126

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) NAB1914056348
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.5243954 Longitude -104.2150439
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Avalon Delaware Unit #562	Site Type Production Well Facility
Date Release Discovered 5/1/2019	API# (if applicable) 30-015-24377

Unit Letter	Section	Township	Range	County
O	31	20S	28E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 8.9	Volume Recovered (bbls) 7.1
	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

During excavation activities, contractor struck an unmarked buried fiberglass line with a backhoe. Associated wells were shut in. Released fluids remained within the excavated area. A vacuum truck recovered free fluids and line repairs have been scheduled. Additional third party resources have been retained to assist with remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914056348
District RP	2RP-5431
Facility ID	
Application ID	pAB1914056126

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? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

Initial Response

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

☒ The source of the release has been stopped. ☒ 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: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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Printed Name: <u>Kyle Littrell</u> Signature:  email: <u>Kyle_Littrell@xtocenergy.com</u>	Title: <u>SH&E Supervisor</u> Date: <u>5/14/2019</u> Telephone: <u>432-221-7331</u>
<u>OCD Only</u> Received by:  Date: <u>5/20/2019</u>	

Incident ID	
District RP	2RP-5431
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

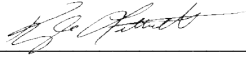
Characterization Report Checklist: <i>Each of the following items must be included in the report.</i> ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. ☒ Field data ☒ Data table of soil contaminant concentration data ☒ Depth to water 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.

Incident ID	
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Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 07/30/2019

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-5431
Facility ID	
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Closure

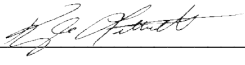
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/30/2019

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

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

July 30, 2019

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

6LUEF-190730-C-1410

**RE: Closure Request
Avalon Delaware Unit #562
Remediation Permit Numbers 2RP-5332 and 2RP-5431
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Deferral Request detailing soil sampling and excavation activities at the Avalon Delaware Unit #562 (Site) in Unit O, Section 31, Township 20 South, Range 28 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following two separate events that caused the release of produced water onto the caliche well pad. Based on the excavation activities and results of the soil sampling events, XTO is submitting this Closure Request, describing remediation that has occurred and requesting no further action for the release events.

RELEASE BACKGROUND

On March 9, 2019, a nipple on the pumping tee failed due to corrosion, which resulted in the release of 5 barrels (bbls) of produced water onto the caliche well pad and access road. A vacuum truck was dispatched to the Site to recover free-standing fluid; approximately 1 bbl of produced water was recovered. The nipple and valve were replaced, and the well was returned to production. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on March 22, 2019, and was assigned Remediation Permit (RP) Number 2RP-5332 (Attachment 1).

On May 1, 2019, a second release occurred southeast of the previous release. During excavation activities, a contractor struck an unmarked buried fiberglass line with a backhoe, which resulted in the release of 8.9 bbls of produced water within the excavated area. A vacuum truck was dispatched to the Site to recover free-standing fluid; approximately 7.1 bbls of produced water were recovered. The associated wells were shut in, and repairs were scheduled. XTO reported the release to the NMOCD on a Form C-141 on May 14, 2019, and was assigned RP Number 2RP-5431.



SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is CP 00851, located approximately 3,631 feet south of the Site. The water well has a depth to groundwater of 115 feet and a total depth of 255 feet. Ground surface elevation at the water well location is 3,246 feet above mean sea level (AMSL), which is approximately 43 feet lower in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is a seasonal stream bed located approximately 4,087 feet north-northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a medium potential karst area.

CLOSURE CRITERIA

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

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

SITE ASSESSMENT, EXCAVATION, AND DELINEATION SOIL SAMPLING ACTIVITIES

On March 21, 2019, LTE personnel inspected the Site to evaluate the release extent. Surficial staining was observed on the caliche well pad and access road. LTE personnel collected four preliminary soil samples (SS01 through SS04) within the release extent from a depth of approximately 0.5 feet bgs to assess the lateral extent of soil impacts. 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 Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0.

Based on laboratory analytical results for the preliminary soil samples, visual observations, and the U.S. Bureau of Land Management (BLM) preferred chloride closure criteria of 600 mg/kg in the top 4 feet of the subsurface, excavation of impacted soil was warranted. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2.

From June 7 to June 21, 2019, LTE personnel were at the Site to oversee soil excavation and delineation activities. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 through SW21 were collected from the sidewalls of the excavation from depths ranging from ground surface to approximately 5 feet bgs. Composite soil samples FS01 through FS24 were collected from the floor of the excavation from depths of 4.5 feet to 5 feet bgs. The excavation soil samples were collected, handled and analyzed as described above and submitted to Xenco in Midland, Texas. The excavation extent and excavation soil sample locations are depicted on Figure 3.

Assessment for further excavation of impacted soil in the areas surrounding the release extent was conducted. Potholes and boreholes were advanced at nine locations in and around the release extent. Potholes PH01, PH02, PH04, and PH05 were advanced via track hoe within the release extent and in the pasture area surrounding the release extent to depths ranging from 4 feet to 20 feet bgs. Boreholes BH01 through BH05 were advanced via hand auger in the pasture area around the release extent to depths of 3 feet or 4 feet bgs. Delineation soil samples were collected from a depth of 8 feet bgs in pothole PH01, 20 bgs feet in pothole PH02, and 1 foot and 4 feet bgs in potholes PH04 and PH05. Delineation soil samples were collected from depths of 1 foot and 4 feet bgs in boreholes BH01, BH04, and BH05, and from depths of 1 foot and 3 feet bgs in boreholes BH02 and BH03. Soil from the nine potholes and boreholes was field screened utilizing a PID and Hach® chloride QuanTab® test strips. Field screening results and observations for each pothole/borehole were logged on lithologic/soil sampling logs, which are included in Attachment 3. The delineation soil sample locations are depicted on Figure 4. The delineation soil samples were collected, handled and analyzed as described above and submitted to Xenco in Midland, Texas.



The excavation extent measured approximately 5,140 square feet in area. A total of approximately 950 cubic yards of impacted soil were removed from the excavations. The impacted soil was transported and properly disposed of at the Lea Land landfill facility located in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results indicated that chloride concentrations in preliminary soil samples SS01 through SS04, collected at approximately 0.5 feet bgs, exceeded the BLM preferred closure criteria of 600 mg/kg in the top 4 feet of the subsurface. Based on the analytical results from the preliminary soil samples and visual observations, the impacted soil was excavated. Following excavation of impacted soil, confirmation soil samples were collected from the sidewalls and floor of the excavation. Laboratory analytical results indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria in excavation soil samples SW01 through SW21 and FS01 through FS24.

Laboratory analytical results for delineation soil samples PH01, PH02, PH04/PH04A, PH05/PH05A and BH01/BH01A through BH05/BH05A indicated that BTEX, TPH, and chloride concentrations in the soil surrounding the release extent was in compliance 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 4.

CLOSURE REQUEST

Laboratory analytical results indicated that chloride concentrations in preliminary soil samples SS01 through SS04 exceeded the BLM preferred closure criteria. As a result, impacted soil was excavated. A total of 950 cubic yards of impacted soil were excavated, and laboratory analytical results for the confirmation soil samples collected from the final excavation extent indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria. Additional delineation soil sampling activities were conducted in the area surrounding the release extent. Laboratory analytical results for the delineation soil samples indicated that BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria and no further excavation was required.

Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for RP Numbers 2RP-5332 and 2RP-5431. Upon approval of this closure request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as Attachment 1.

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





Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads "Carol Ann Whaley".

Carol Ann Whaley
Staff Geologist

A handwritten signature in black ink that reads "Ashley L. Ager".

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Jim Amos, BLM
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Attachments:

Figure 1 Site Location Map
Figure 2 Preliminary Soil Sample Locations
Figure 3 Excavation Soil Sample Locations
Figure 4 Delineation Soil Sample Locations
Table 1 Soil Analytical Reports
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-5332 and 2RP-5431)
Attachment 2 Photographic Log
Attachment 3 Lithologic/Soil Sample Logs
Attachment 4 Laboratory Analytical Reports

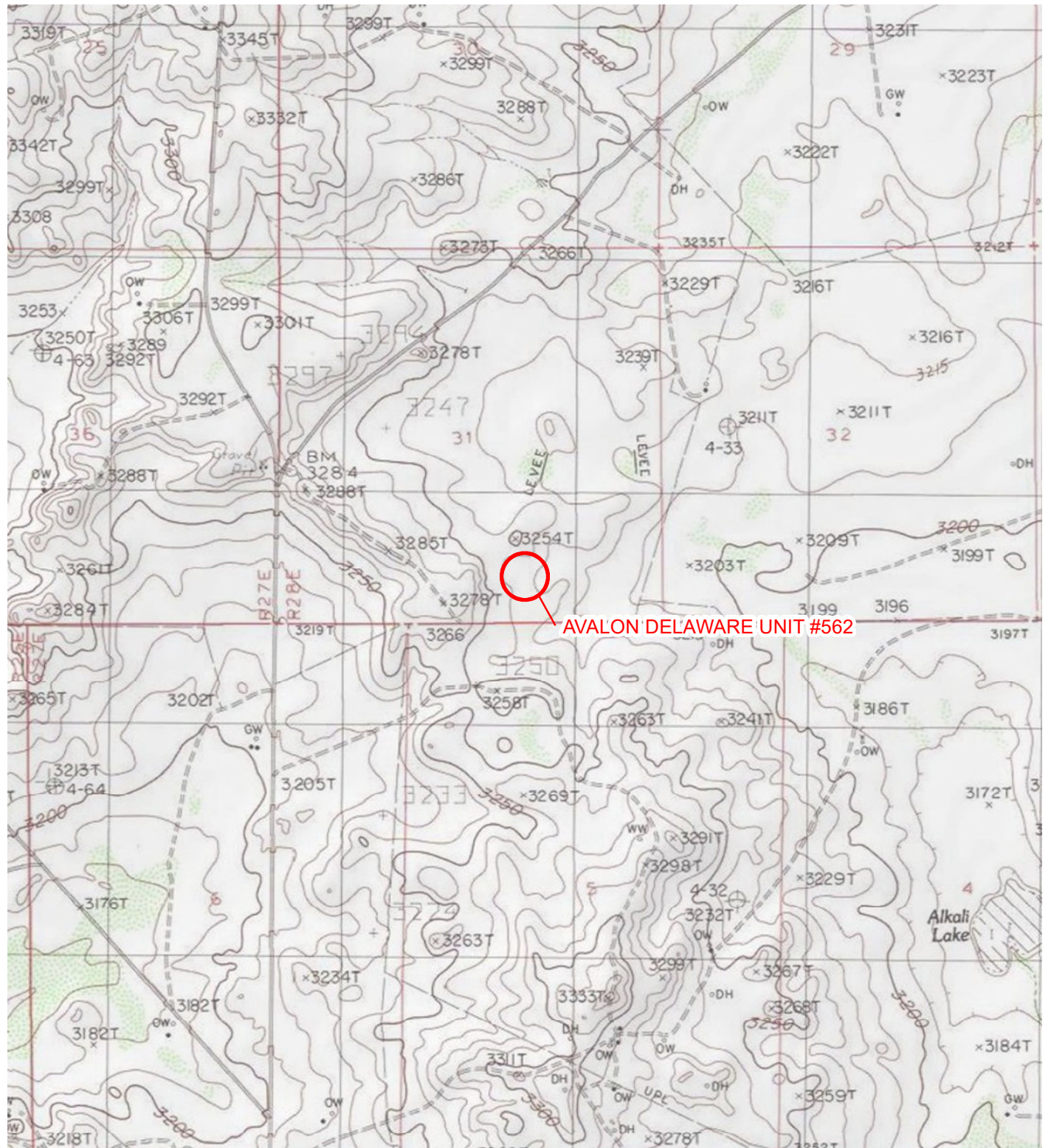
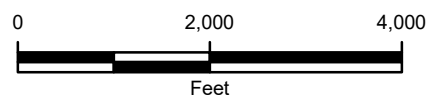


IMAGE COURTESY OF ESRI/USGS

LEGEND

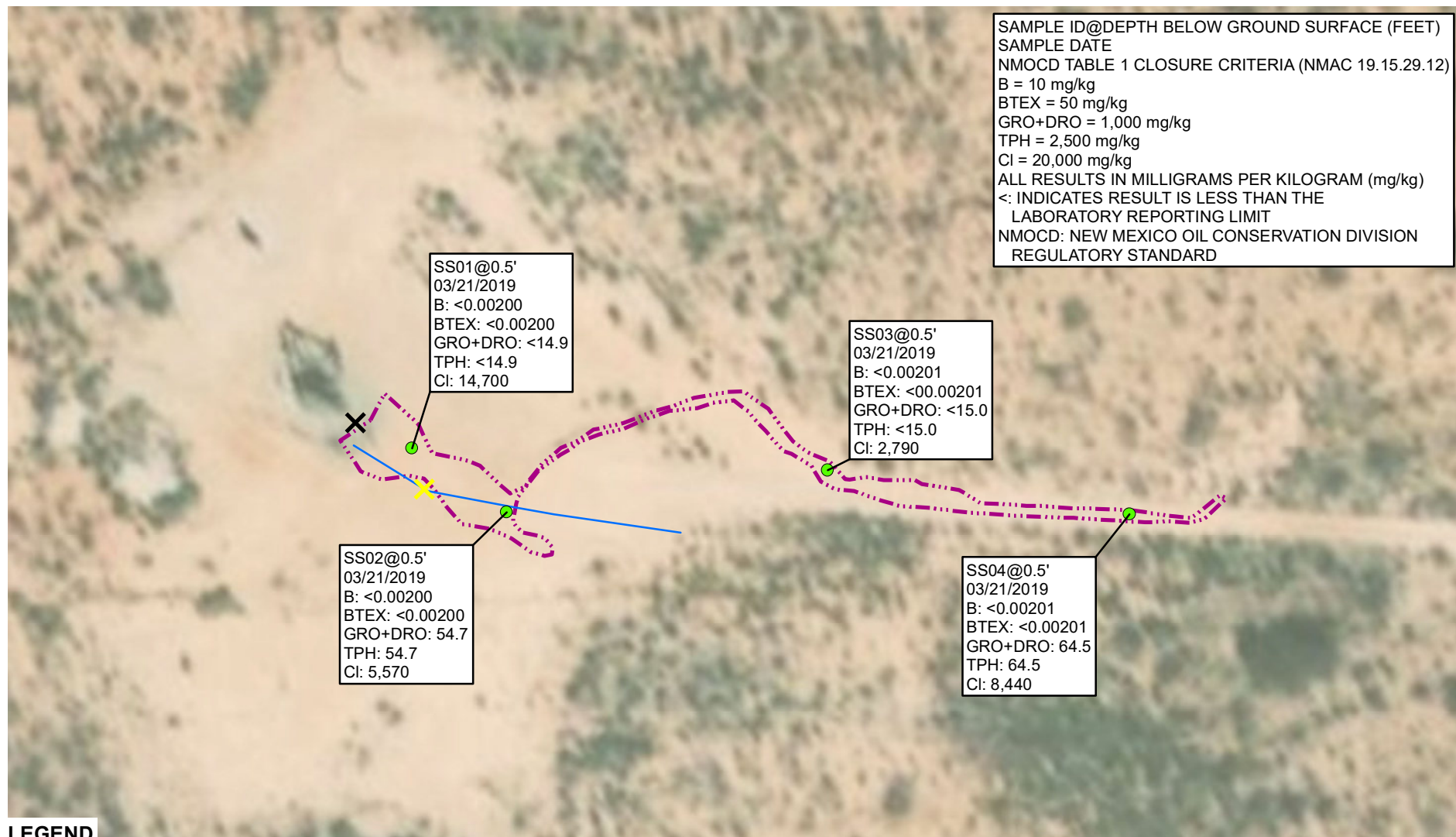
 SITE LOCATION



NOTE: REMEDIATION PERMIT
NUMBER 2RP-5431 AND 2RP-5332

FIGURE 1
SITE LOCATION MAP
AVALON DELAWARE UNIT #562
UNIT O SEC 31 T20S R28E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.





LEGEND

- ✕ RELEASE LOCATION 2RP-5332
- ✕ RELEASE LOCATION 2RP-5431
- PRELIMINARY SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- WATER LINE
- RELEASE EXTENT

B: BENZENE
 BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
 GRO: GASOLINE RANGE ORGANICS
 DRO: DIESEL RANGE ORGANICS
 TPH: TOTAL PETROLEUM HYDROCARBONS
 C: CHLORIDE
 NMAC: NEW MEXICO ADMINISTRATIVE CODE
 NMOC D: NEW MEXICO OIL CONSERVATION DIVISION

NOTE: REMEDIATION PERMIT NUMBER
 2RP-5431 AND 2RP-5332

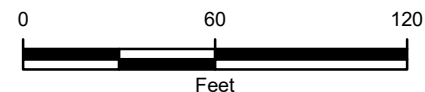


IMAGE COURTESY OF ESRI



FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
AVALON DELAWARE UNIT #562
UNIT O SEC 31 T20S R28E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



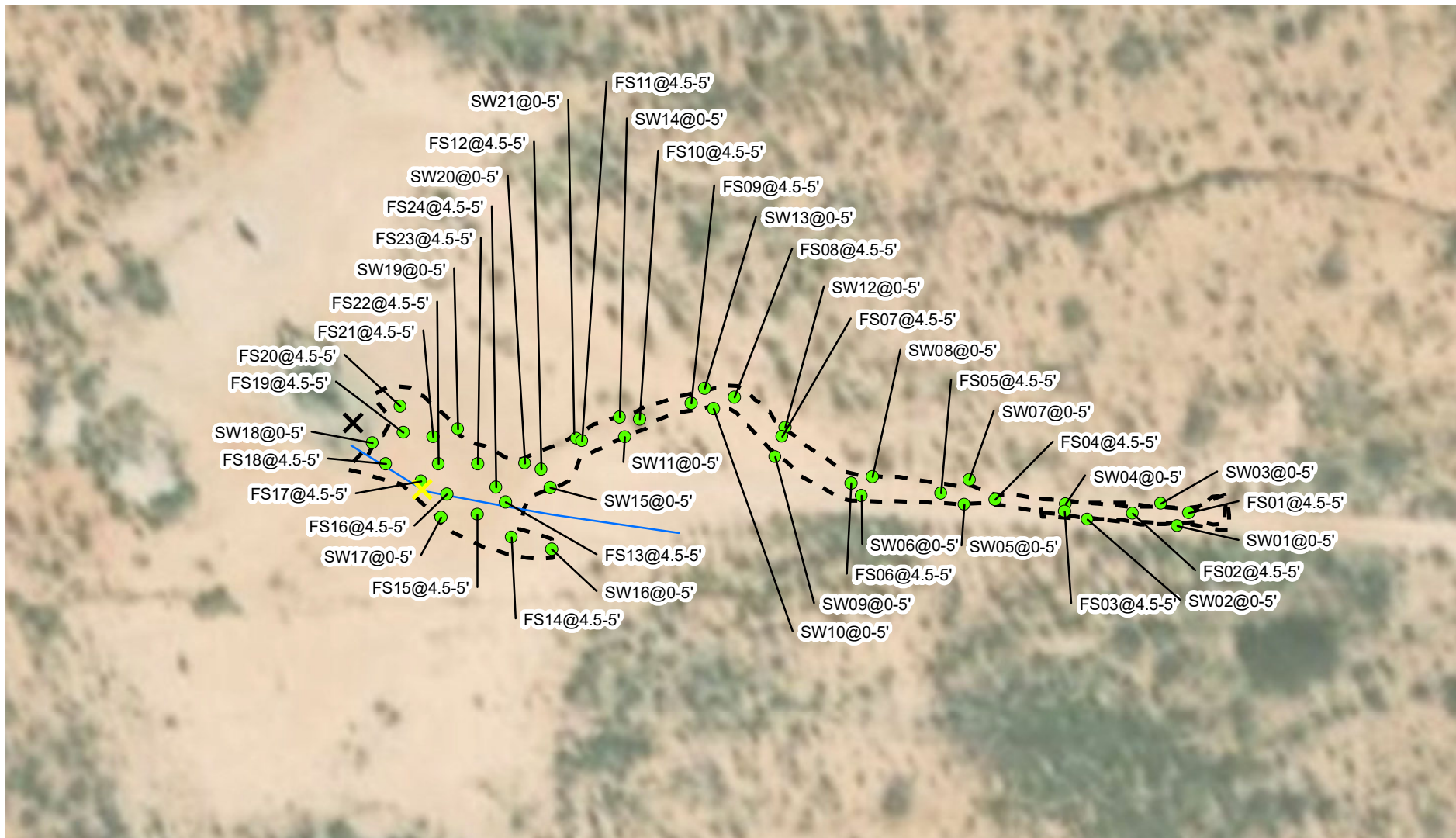


IMAGE COURTESY OF ESRI

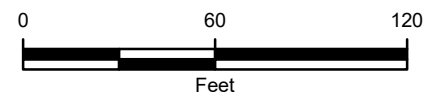
LEGEND

X RELEASE LOCATION 2RP-5332

Y RELEASE LOCATION 2RP-5431

● EXCAVATION SOIL SAMPLE WITH FIELD SCREENING IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

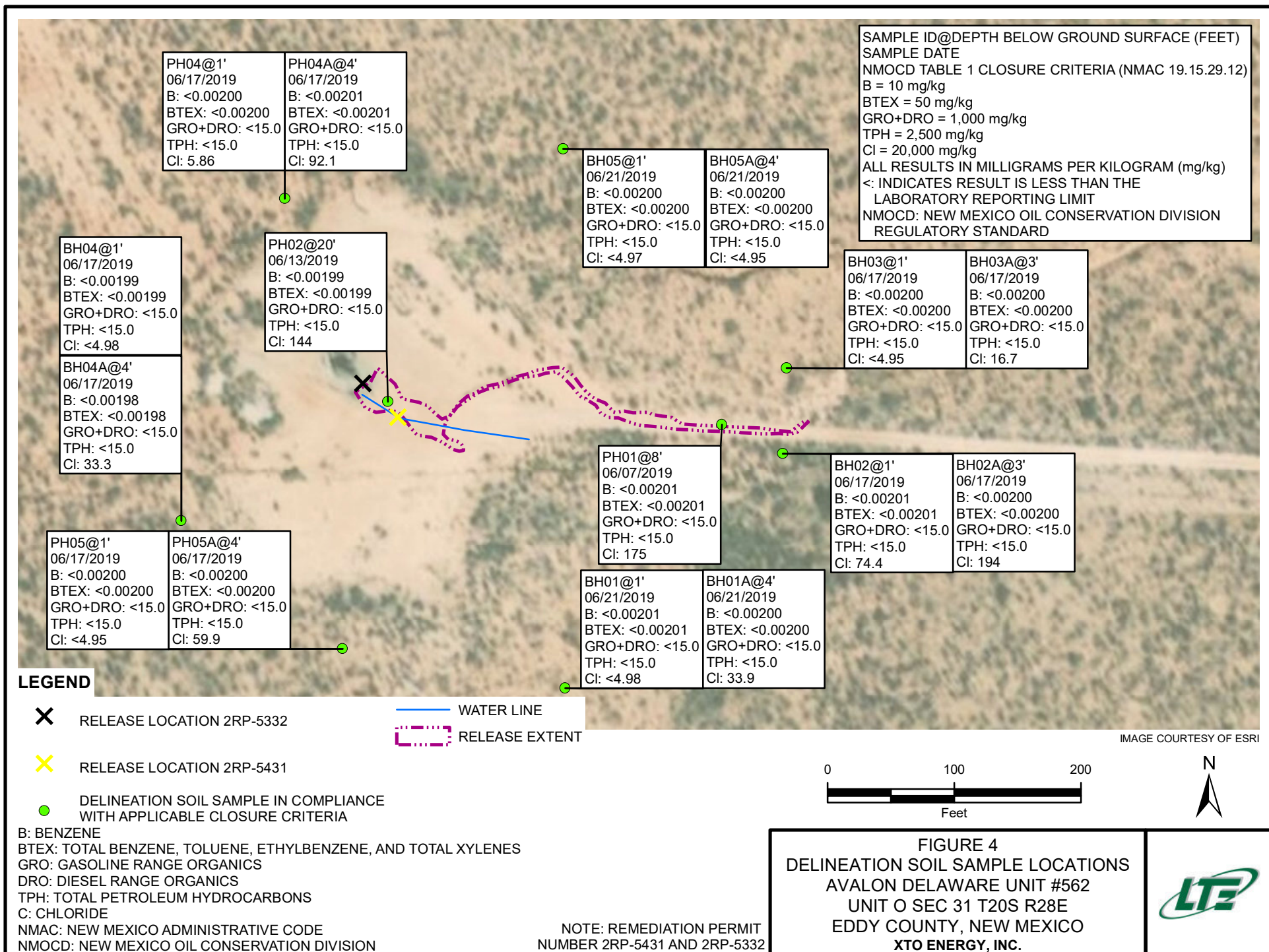
— WATER LINE
- - - EXCAVATION EXTENT



SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
NOTE: REMEDIATION PERMIT NUMBER 2RP-5332 AND 2RP-5431

FIGURE 3
EXCAVATION SOIL SAMPLE LOCATIONS
AVALON DELAWARE UNIT #562
UNIT O SEC 31 T20S R28E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.





**TABLE 1
SOIL ANALYTICAL RESULTS**

**AVALON DELAWARE UNIT #562
REMEDIATION PERMIT NUMBERS 2RP-5332 AND 2RP-5431
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)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	03/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	14,700
SS02	0.5	03/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	54.7	<15.0	54.7	54.7	5,570
SS03	0.5	03/21/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	2,790
SS04	0.5	03/21/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	64.5	<14.9	64.5	64.5	8,440
SW01	0 - 5	06/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	728
SW02	0 - 5	06/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	783
SW03	0 - 5	06/07/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	164
SW04	0 - 5	06/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	242
SW05	0 - 5	06/12/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<15.0	<15.0	<15.0	<15.0	<15.0	511
SW06	0 - 5	06/12/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<15.0	<15.0	<15.0	<15.0	<15.0	503
SW07	0 - 5	06/12/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<15.0	<15.0	<15.0	<15.0	<15.0	837
SW08	0 - 5	06/12/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<15.0	<15.0	<15.0	<15.0	<15.0	1,680
SW09	0 - 5	06/14/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<15.0	18.3	<15.0	18.3	18.3	66.8
SW10	0 - 5	06/14/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<15.0	<15.0	<15.0	<15.0	<15.0	120
SW11	0 - 5	06/14/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<15.0	<15.0	<15.0	<15.0	<15.0	491
SW12	0 - 5	06/14/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<15.0	<15.0	<15.0	<15.0	<15.0	988
SW13	0 - 5	06/14/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<15.0	<15.0	<15.0	<15.0	<15.0	907
SW14	0 - 5	06/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<15.0	23.6	<15.0	23.6	23.6	3,250
SW15	0 - 5	06/18/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,150
SW16	0 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	18.6	<15.0	18.6	18.6	1,560
SW17	0 - 5	06/18/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	2,400
SW18	0 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	54.6	20.1	54.6	74.7	15,200
SW19	0 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	3,950
SW20	0 - 5	06/18/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	35.4	<14.9	35.4	35.4	1,390
SW21	0 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	5,860



**TABLE 1
SOIL ANALYTICAL RESULTS**

**AVALON DELAWARE UNIT #562
REMEDIATION PERMIT NUMBERS 2RP-5332 AND 2RP-5431
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)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
FS01	4.5 - 5	06/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	217
FS02	4.5 - 5	06/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	742
FS03	4.5 - 5	06/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	749
FS04	4.5 - 5	06/12/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<14.9	<14.9	<14.9	<14.9	<14.9	1,050
FS05	4.5 - 5	06/12/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<14.9	<14.9	<14.9	<14.9	<14.9	580
FS06	4.5 - 5	06/12/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<15.0	<15.0	<15.0	<15.0	<15.0	682
FS07	4.5 - 5	06/14/2019	<0.000990	<0.000990	<0.000990	<0.000990	<0.000990	<15.0	18.0	<15.0	18.0	18.0	1,670
FS08	4.5 - 5	06/14/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<14.9	<14.9	<14.9	<14.9	<14.9	1,420
FS09	4.5 - 5	06/14/2019	<0.000992	<0.000992	<0.000992	<0.000992	<0.000992	<15.0	<15.0	<15.0	<15.0	<15.0	1,050
FS10	4.5 - 5	06/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<15.0	<15.0	<15.0	<15.0	<15.0	1,640
FS11	4.5 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	2,780
FS12	4.5 - 5	06/18/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	38.9	<15.0	38.9	38.9	1,260
FS13	4.5 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	43.6	<15.0	43.6	43.6	1,490
FS14	4.5 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	39.9	<14.9	39.9	39.9	628
FS15	4.5 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	3,770
FS16	4.5 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	2,350
FS17	4.5 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,770
FS18	4.5 - 5	06/18/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	23.3	<15.0	23.3	23.3	2,580
FS19	4.5 - 5	06/18/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	632
FS20	4.5 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	777
FS21	4.5 - 5	06/18/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	379
FS22	4.5 - 5	06/18/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	547
FS23	4.5 - 5	06/18/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	440
FS24	4.5 - 5	06/18/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	997
PH01	8	06/07/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	175



**TABLE 1
SOIL ANALYTICAL RESULTS**

**AVALON DELAWARE UNIT #562
REMEDIATION PERMIT NUMBERS 2RP-5332 AND 2RP-5431
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)	GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
PH02	20	06/13/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	144
PH04	1	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	5.86
PH04A	4	06/17/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	92.1
PH05	1	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
PH05A	4	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	59.9
BH01	1	06/21/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
BH01A	4	06/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	33.9
BH02	1	06/17/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	74.4
BH02A	3	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	194
BH03	1	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
BH03A	3	06/17/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	16.7
BH04	1	06/17/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	<4.98
BH04A	4	06/17/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	33.3
BH05	1	06/21/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	<4.97
BH05A	4	06/21/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<4.95
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

ORO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

mg/kg - milligrams per kilogram

NE - not established

< - indicates result is below laboratory reporting limits

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

TPH - total petroleum hydrocarbons



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	NAB1909532167
District RP	22RP-5332
Facility ID	
Application ID	pAB1909531648

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) NAB1909532167
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.524429° Longitude -104.215108°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Avalon Delaware Unit #562	Site Type Production Well Facility
Date Release Discovered 3/9/2019	API# (if applicable) 30-015-24377

Unit Letter	Section	Township	Range	County
O	31	20S	28E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 5	Volume Recovered (bbls) 1
	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

A release of fluids to the well pad occurred when a nipple on the pumping tee failed due to corrosion. The well was temporarily shut down to stop the leak and make repairs. A vacuum truck recovered free standing fluid. The nipple and valve were replaced and the well was returned to production. Additional third party resources have been retained to assist with remediation.

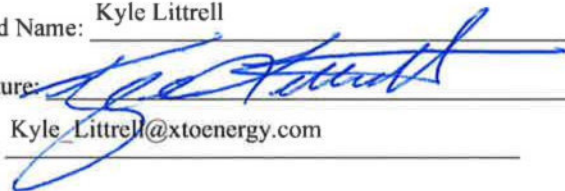
State of New Mexico
Oil Conservation Division

Incident ID	NAB1909532167
District RP	2RP-5332
Facility ID	
Application ID	pAB1909531648

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? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

Initial Response

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

☒ The source of the release has been stopped. ☒ 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: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u> Signature:  email: <u>Kyle.Littrell@xtoenergy.com</u>	Title: <u>SH&E Supervisor</u> Date: <u>3-22-19</u> Telephone: <u>432-221-7331</u>
<u>OCD Only</u> Received by:  Date: <u>4/4/2019</u>	

Incident ID	
District RP	2RP-5332
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

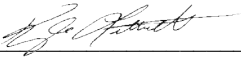
Characterization Report Checklist: <i>Each of the following items must be included in the report.</i> ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. ☒ Field data ☒ Data table of soil contaminant concentration data ☒ Depth to water 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.

Incident ID	
District RP	2RP-5332
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 07/30/2019

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-5332
Facility ID	
Application ID	

Closure

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/30/2019

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

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

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	NAB1914056348
District RP	2RP-5431
Facility ID	
Application ID	pAB1914056126

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) NAB1914056348
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.5243954 Longitude -104.2150439
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Avalon Delaware Unit #562	Site Type Production Well Facility
Date Release Discovered 5/1/2019	API# (if applicable) 30-015-24377

Unit Letter	Section	Township	Range	County
O	31	20S	28E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 8.9	Volume Recovered (bbls) 7.1
	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

During excavation activities, contractor struck an unmarked buried fiberglass line with a backhoe. Associated wells were shut in. Released fluids remained within the excavated area. A vacuum truck recovered free fluids and line repairs have been scheduled. Additional third party resources have been retained to assist with remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914056348
District RP	2RP-5431
Facility ID	
Application ID	pAB1914056126

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? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

Initial Response

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

☒ The source of the release has been stopped. ☒ 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: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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Printed Name: <u>Kyle Littrell</u> Signature:  email: <u>Kyle_Littrell@xtocenergy.com</u>	Title: <u>SH&E Supervisor</u> Date: <u>5/14/2019</u> Telephone: <u>432-221-7331</u>
OCD Only Received by:  Date: <u>5/20/2019</u>	

Incident ID	
District RP	2RP-5431
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

Characterization Report Checklist: <i>Each of the following items must be included in the report.</i> ☒ 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

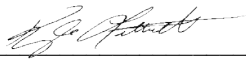
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Incident ID	
District RP	2RP-5431
Facility ID	
Application ID	

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Printed Name: _____ Kyle Littrell _____

Title: _____ SH&E Supervisor _____

Signature: _____  _____

Date: _____ 07/30/2019 _____

email: _____ Kyle_Littrell@xtoenergy.com _____

Telephone: _____ 432-221-7331 _____

OCD Only

Received by: _____

Date: _____

Incident ID	
District RP	2RP-5431
Facility ID	
Application ID	

Closure

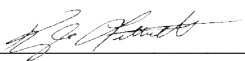
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Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ 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

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Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 7/30/2019

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

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____



Eastern view of release area during site assessment activities.

Project: 012919045	XTO Energy, Inc. Avalon Delaware Unit #562	 <i>Advancing Opportunity</i>
March 31, 2019	Photographic Log	



Western view of western portion of final excavation extent.

Project: 012919045	XTO Energy, Inc. Avalon Delaware Unit #562	 <i>Advancing Opportunity</i>
June 21, 2019	Photographic Log	





LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH01

Date:

06/07

Project Name:

ADU562

RP Number:

2RP-5332

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: Ex

Lat/Long:

Field Screening:

CTS/PID

Hole Diameter:

Total Depth:

8'

Comments:

vertical deliniation

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
						0			
0900	D	2180		N		1			caliche/silt, brown, low plasticity
0910	D	180		N		2			silt loam, brown, low plasticity
0915	D	1376		N		3			silt loam, brown low plasticity
0920	D	1600		N		4			silt loam, brown, low plasticity
						5			
0930	D	180		N		6			clay loam, reddish brown, low plasticity
						7			
0940	D	2180		N	PH01	8			clay loam, reddish brown, low plasticity
						9			
						10			
						11			
						12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH02

Date:

6/14/19

Project Name:

ADU5CZ

RP Number:

2RP-533Z

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: Ex

Lat/Long:

Field Screening:

CTS/PID

Hole Diameter:

Total Depth:

20'

Comments:

To Lab

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1310	D	10936		N		1			caliche, white-tan, low plasticity
1315	D	3251		N		2			clay loam, brown, low plasticity
1320	D	3251		N		3			clay loam, brown, low plasticity
1325	D	3251		N		4			clay loam, red/brown, med plasticity
1330	D	2924		N		6			clay loam, red brown, med plasticity
1340	D	3603		N		8			clay loam, red brown, med plasticity
1345	D	2924		N		10			clay, red brown
1355	D	3603		N		12			clay, red brown
1405	D	2048		N		14			clay, red brown
1410	D	2048		N		16			clay loam, red brown, med plasticity
1420		2048		N	PH02	18			clay loam, light red brown, med plasticity
						20			
						22			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH04

Date:

6/17/19

Project Name:

ADU562

RP Number:

2RP-5332

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: HA Ex

Lat/Long:

Field Screening:

CTS/APD

Hole Diameter:

Total Depth:

4'

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1300	D	<150	3.0	N	PH04	1			clay loam, brown, low plasticity
1305	D	<180	3.4	N		2			clay loam, brown, low plasticity
1310	D	<180	2.8	N		3			clay loam, light brown, low plasticity
1315	D	<180	2.5	N	PH04A	4			clay loam, w/ caliche, tan, low plasticity
						6			
						8			
						10			
						12			
						14			
						16			
						18			
						20			
						22			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH05

Date:

6/17/19

Project Name:

2RP-5332

RP Number:

ADUS62

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: EX

Lat/Long:

Field Screening:

CTS/PID

Hole Diameter:

Total Depth:

4'

Comments:

1320

D

<180

2.0

N

PH05

1

clayloam, brown, low plasticity

1325

D

<180

1.3

N

2

clayloam, brown, low plasticity

1330

D

<180

1.5

N

3

clayloam, light brown, low plasticity

1335

D

<180

0.8

N

PH05A

4

clayloam light brown, low plasticity

6

8

10

12

14

16

18

20

22



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

BH01

Date:

02/21/2019

Project Name:

ADU562

RP Number:

ZRP-5332

LITHOLOGIC / SOIL SAMPLING LOG

Logged By:

GG

Method: HA

Lat/Long:

Field Screening:

CTS

Hole Diameter:

Total Depth:

4'

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1120	D	<180			BH01A	1			sand/silt, light brown, low plasticity
1125	D	<180				2			sand/silt/gravel, light brown low plasticity
1130	D	<180				3			sand/silt/gravel, light brown low plasticity
1140	D	<180			BH01A	4			silt/caliche, tan-white, low plasticity
						6			
						8			
						10			
						12			
						14			
						16			
						18			
						20			
						22			



LT Environmental, Inc.
 508 West Stevens Street
 Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

BH02

Date:

6/17/19

Project Name:

ADU562

RP Number:

2RP-5332

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: HA

Lat/Long:

Field Screening:

CTS/PID

Hole Diameter:

Total Depth:

3'

Comments:

1135

D

4180

0.8

N

BH02

1

clay loam, brown, med plasticity

1140

D

384

0.8

N

2

clay loam, gravel, light brown
low plasticity

1145

D

384

1.0

N

BH02A

3

clay loam, gravel, light brown
low plasticity

4

Auger refusal

6

8

10

12

14

16

18

20

22



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

BH03

Date:

6/17/19

Project Name:

ADU 562

RP Number:

2RP-5332

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: HA

Lat/Long:

Field Screening:

CTS/PID

Hole Diameter:

Total Depth:

3'

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1150	D	4180	3.1	N	BH03	1			clay loam, Brown, low plasticity
						2			clay loam, Brown, low plasticity
1155	D	4180	3.8	N					
						3			clay loam, light brown, low plasticity w/ gravel
1200	D	4180	2.6	N	BH03A				
						4			Aggr refusal
						6			
						8			
						10			
						12			
						14			
						16			
						18			
						20			
						22			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

BH04

Date:

6/17/19

Project Name:

ADU56Z

RP Number:

ZRP-533Z

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: HA

Lat/Long:

Field Screening:

CTS/PID

Hole Diameter:

Total Depth:

4'

Comments:

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1340	D	180	2.1	N	BH04	1			silty loam, Brown, low plasticity
1345	D	180	2.1	N		2			silty loam, light brown, low plasticity
1350	D	180	0.8	N		3			caliche, tan, low plasticity
1355	D	180	1.0	N	BH04A	4			caliche, tan, low plasticity
						6			
						8			
						10			
						12			
						14			
						16			
						18			
						20			
						22			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

BH05

Date:

06/21/2019

Project Name:

ADU562

RP Number:

2RP-5332

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: GG

Method: HA

Lat/Long:

Field Screening:

CTS

Hole Diameter:

Total Depth:

4'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1155 D	2180		N	BH05A	1			clay/sand, Dark brown, med plasticity
1200 D	2180		N		2			clay/sand, brown, med plasticity
1205 D	2180		N		3			clay loam, light brown, low plasticity
1210 D	2180		N	BH05A	4			gravel
					6			caliche, off white-tan, low plasticity
					8			
					10			
					12			
					14			
					16			
					18			
					20			
					22			



Analytical Report 618904

for
LT Environmental, Inc.

Project Manager: Adrian Baker

ADU 562

04-APR-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)



04-APR-19

Project Manager: **Adrian Baker**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **618904**

ADU 562

Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 618904. 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. 618904 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kalei Stout

Midland Laboratory Director

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 618904



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	03-21-19 15:20	.5 ft	618904-001
SS02	S	03-21-19 15:35	.5 ft	618904-002
SS03	S	03-21-19 15:45	.5 ft	618904-003
SS04	S	03-21-19 16:00	.5 ft	618904-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ADU 562*

Project ID:
Work Order Number(s): 618904

Report Date: 04-APR-19
Date Received: 03/26/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3084064 BTEX by EPA 8021B

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



Certificate of Analysis Summary 618904

LT Environmental, Inc., Arvada, CO

Project Name: ADU 562



Project Id:

Contact: Adrian Baker

Project Location: Delaware Basin

Date Received in Lab: Tue Mar-26-19 11:30 am

Report Date: 04-APR-19

Project Manager: Kalei Stout

Analysis Requested	Lab Id:	618904-001	618904-002	618904-003	618904-004		
	Field Id:	SS01	SS02	SS03	SS04		
	Depth:	.5- ft	.5- ft	.5- ft	.5- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Mar-21-19 15:20	Mar-21-19 15:35	Mar-21-19 15:45	Mar-21-19 16:00		
BTEX by EPA 8021B	Extracted:	Mar-29-19 16:30	Mar-29-19 16:30	Mar-29-19 16:30	Mar-29-19 16:30		
	Analyzed:	Mar-30-19 23:24	Mar-30-19 23:43	Mar-30-19 12:02	Mar-30-19 12:21		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201		
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201		
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201		
m,p-Xylenes		<0.00399 0.00399	<0.00400 0.00400	<0.00402 0.00402	<0.00402 0.00402		
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201		
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201		
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201		
Inorganic Anions by EPA 300	Extracted:	Mar-27-19 16:15	Mar-27-19 16:15	Mar-27-19 16:15	Mar-27-19 16:15		
	Analyzed:	Mar-28-19 05:15	Mar-28-19 05:21	Mar-28-19 05:28	Mar-28-19 05:35		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		14700 248	5570 49.5	2790 25.0	8440 49.6		
TPH by SW8015 Mod	Extracted:	Mar-29-19 10:00	Mar-29-19 10:00	Mar-29-19 10:00	Apr-02-19 08:00		
	Analyzed:	Mar-30-19 01:51	Mar-30-19 02:49	Mar-30-19 03:08	Apr-02-19 17:11		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<14.9 14.9		
Diesel Range Organics (DRO)		<14.9 14.9	54.7 15.0	<15.0 15.0	64.5 14.9		
Motor Oil Range Hydrocarbons (MRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<14.9 14.9		
Total TPH		<14.9 14.9	54.7 15.0	<15.0 15.0	64.5 14.9		
TPH by SW8015 Mod	Extracted:				Apr-02-19 08:00		
	Analyzed:				Apr-02-19 17:11		
	Units/RL:				mg/kg RL		
Total GRO-DRO					64.5 14.9		

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

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

Kalei Stout
Midland Laboratory Director



Certificate of Analytical Results 618904



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SS01**
Lab Sample Id: 618904-001

Matrix: Soil
Date Collected: 03.21.19 15.20

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3083709

Date Prep: 03.27.19 16.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14700	248	mg/kg	03.28.19 05.15		50

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084047

Date Prep: 03.29.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	03.30.19 01.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	03.30.19 01.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	03.30.19 01.51	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	03.30.19 01.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	92	%	70-135	03.30.19 01.51		
o-Terphenyl	84-15-1	95	%	70-135	03.30.19 01.51		



Certificate of Analytical Results 618904



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SS01**
Lab Sample Id: 618904-001

Matrix: Soil
Date Collected: 03.21.19 15.20

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 03.29.19 16.30

Basis: Wet Weight

Seq Number: 3084064

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.30.19 23.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.30.19 23.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.30.19 23.24	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.30.19 23.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.30.19 23.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.30.19 23.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.30.19 23.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.30.19 23.24		
1,4-Difluorobenzene	540-36-3	96	%	70-130	03.30.19 23.24		



Certificate of Analytical Results 618904



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: SS02
Lab Sample Id: 618904-002

Matrix: Soil
Date Collected: 03.21.19 15.35

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3083709

Date Prep: 03.27.19 16.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5570	49.5	mg/kg	03.28.19 05.21		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084047

Date Prep: 03.29.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.30.19 02.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	54.7	15.0	mg/kg	03.30.19 02.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.30.19 02.49	U	1
Total TPH	PHC635	54.7	15.0	mg/kg	03.30.19 02.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	03.30.19 02.49	
o-Terphenyl	84-15-1	98	%	70-135	03.30.19 02.49	



Certificate of Analytical Results 618904



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: SS02
Lab Sample Id: 618904-002

Matrix: Soil
Date Collected: 03.21.19 15.35

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084064

Date Prep: 03.29.19 16.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.30.19 23.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.30.19 23.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.30.19 23.43	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.30.19 23.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.30.19 23.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.30.19 23.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.30.19 23.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	03.30.19 23.43		
4-Bromofluorobenzene	460-00-4	99	%	70-130	03.30.19 23.43		



Certificate of Analytical Results 618904



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: SS03
Lab Sample Id: 618904-003

Matrix: Soil
Date Collected: 03.21.19 15.45

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3083709

Date Prep: 03.27.19 16.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2790	25.0	mg/kg	03.28.19 05.28		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084047

Date Prep: 03.29.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.30.19 03.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.30.19 03.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	03.30.19 03.08	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.30.19 03.08	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	95	%	70-135	03.30.19 03.08	
84-15-1	96	%	70-135	03.30.19 03.08	



Certificate of Analytical Results 618904



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: SS03
Lab Sample Id: 618904-003

Matrix: Soil
Date Collected: 03.21.19 15.45

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084064

Prep Method: SW5030B

% Moisture:

Date Prep: 03.29.19 16.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.30.19 12.02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.30.19 12.02	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.30.19 12.02	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.30.19 12.02	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.30.19 12.02	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.30.19 12.02	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.30.19 12.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	03.30.19 12.02		
1,4-Difluorobenzene	540-36-3	93	%	70-130	03.30.19 12.02		



Certificate of Analytical Results 618904



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SS04**
Lab Sample Id: 618904-004

Matrix: Soil
Date Collected: 03.21.19 16.00

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3083709

Date Prep: 03.27.19 16.15

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8440	49.6	mg/kg	03.28.19 05.35		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084422

Date Prep: 04.02.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	04.02.19 17.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	64.5	14.9	mg/kg	04.02.19 17.11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	04.02.19 17.11	U	1
Total TPH	PHC635	64.5	14.9	mg/kg	04.02.19 17.11		1
Total GRO-DRO	PHC628	64.5	14.9	mg/kg	04.02.19 17.11		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	04.02.19 17.11	
o-Terphenyl	84-15-1	106	%	70-135	04.02.19 17.11	



Certificate of Analytical Results 618904



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SS04**
Lab Sample Id: 618904-004

Matrix: Soil
Date Collected: 03.21.19 16.00

Date Received: 03.26.19 11.30
Sample Depth: .5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084064

Prep Method: SW5030B

% Moisture:

Date Prep: 03.29.19 16.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.30.19 12.21	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.30.19 12.21	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.30.19 12.21	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.30.19 12.21	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.30.19 12.21	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.30.19 12.21	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.30.19 12.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	03.30.19 12.21		
1,4-Difluorobenzene	540-36-3	99	%	70-130	03.30.19 12.21		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 618904

LT Environmental, Inc. ADU 562

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083709

MB Sample Id: 7674516-1-BLK

Matrix: Solid

LCS Sample Id: 7674516-1-BKS

Prep Method: E300P

Date Prep: 03.27.19

LCSD Sample Id: 7674516-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	252	101	259	104	90-110	3	20	mg/kg	03.28.19 02:29	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083709

Parent Sample Id: 618897-007

Matrix: Soil

MS Sample Id: 618897-007 S

Prep Method: E300P

Date Prep: 03.27.19

MSD Sample Id: 618897-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	202	248	448	99	451	100	90-110	1	20	mg/kg	03.28.19 02:49	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3083709

Parent Sample Id: 618903-001

Matrix: Soil

MS Sample Id: 618903-001 S

Prep Method: E300P

Date Prep: 03.27.19

MSD Sample Id: 618903-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	204	250	454	100	472	107	90-110	4	20	mg/kg	03.28.19 04:22	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084047

MB Sample Id: 7674698-1-BLK

Matrix: Solid

LCS Sample Id: 7674698-1-BKS

Prep Method: TX1005P

Date Prep: 03.29.19

LCSD Sample Id: 7674698-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	958	96	924	92	70-135	4	20	mg/kg	03.29.19 21:42	
Diesel Range Organics (DRO)	<8.13	1000	1050	105	1020	102	70-135	3	20	mg/kg	03.29.19 21:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		122		122		70-135	%	03.29.19 21:42
o-Terphenyl	97		117		104		70-135	%	03.29.19 21:42

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

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

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

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



QC Summary 618904

LT Environmental, Inc. ADU 562

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084422

MB Sample Id: 7674880-1-BLK

Matrix: Solid

LCS Sample Id: 7674880-1-BKS

Prep Method: TX1005P

Date Prep: 04.02.19

LCSD Sample Id: 7674880-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1120	112	1150	115	70-135	3	20	mg/kg	04.02.19 11:20	
Diesel Range Organics (DRO)	<8.13	1000	1150	115	1180	118	70-135	3	20	mg/kg	04.02.19 11:20	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	104		128		126		70-135	%	04.02.19 11:20			
o-Terphenyl	106		124		122		70-135	%	04.02.19 11:20			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084047

Parent Sample Id: 618899-001

Matrix: Soil

MS Sample Id: 618899-001 S

Prep Method: TX1005P

Date Prep: 03.29.19

MSD Sample Id: 618899-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	8.95	998	972	96	969	96	70-135	0	20	mg/kg	03.29.19 22:39	
Diesel Range Organics (DRO)	<8.11	998	988	99	982	98	70-135	1	20	mg/kg	03.29.19 22:39	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			125			122			70-135	%	03.29.19 22:39	
o-Terphenyl			100			99			70-135	%	03.29.19 22:39	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084422

Parent Sample Id: 619574-001

Matrix: Soil

MS Sample Id: 619574-001 S

Prep Method: TX1005P

Date Prep: 04.02.19

MSD Sample Id: 619574-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	914	91	906	91	70-135	1	20	mg/kg	04.02.19 12:19	
Diesel Range Organics (DRO)	<8.12	999	1020	102	1010	101	70-135	1	20	mg/kg	04.02.19 12:19	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			105			104			70-135	%	04.02.19 12:19	
o-Terphenyl			94			93			70-135	%	04.02.19 12:19	

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

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

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

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



QC Summary 618904

LT Environmental, Inc.

ADU 562

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084064

MB Sample Id: 7674758-1-BLK

Matrix: Solid

LCS Sample Id: 7674758-1-BKS

Prep Method: SW5030B

Date Prep: 03.29.19

LCSD Sample Id: 7674758-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0927	93	0.0981	99	70-130	6	35	mg/kg	03.30.19 05:07	
Toluene	<0.000455	0.0998	0.0952	95	0.100	101	70-130	5	35	mg/kg	03.30.19 05:07	
Ethylbenzene	<0.000564	0.0998	0.0890	89	0.0935	94	70-130	5	35	mg/kg	03.30.19 05:07	
m,p-Xylenes	<0.00101	0.200	0.179	90	0.189	95	70-130	5	35	mg/kg	03.30.19 05:07	
o-Xylene	<0.000344	0.0998	0.0913	91	0.0977	98	70-130	7	35	mg/kg	03.30.19 05:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		98		99		70-130	%	03.30.19 05:07
4-Bromofluorobenzene	85		94		102		70-130	%	03.30.19 05:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084064

Parent Sample Id: 618899-001

Matrix: Soil

MS Sample Id: 618899-001 S

Prep Method: SW5030B

Date Prep: 03.29.19

MSD Sample Id: 618899-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.0929	93	0.0741	73	70-130	23	35	mg/kg	03.30.19 05:45	
Toluene	<0.000457	0.100	0.0958	96	0.0775	77	70-130	21	35	mg/kg	03.30.19 05:45	
Ethylbenzene	<0.000567	0.100	0.0896	90	0.0730	72	70-130	20	35	mg/kg	03.30.19 05:45	
m,p-Xylenes	<0.00102	0.201	0.180	90	0.148	74	70-130	20	35	mg/kg	03.30.19 05:45	
o-Xylene	<0.000346	0.100	0.0934	93	0.0782	77	70-130	18	35	mg/kg	03.30.19 05:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		70-130	%	03.30.19 05:45
4-Bromofluorobenzene	107		110		70-130	%	03.30.19 05:45

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: 618904

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)794-1236
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

www.xenco.com Page 1 of 1

Project Manager:	Adrian Baker	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTC
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	Abaker@ltenv.com

Project Name:	ABU 562	Turn Around	
Project Number:	3/9/19	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Ganett Green	Due Date:	

Program: UST/PST	☐ RP	☐ Brownfields	☐ C	☐ Iperfund	☐
State of Project:					
Reporting Level II	☐ Level III	☐ ST/UST	☐ RP	☐ Level IV	☐
Deliverables: EDD	☐	ADAPT	☐	Other:	

Project Name:	ABU 562	Turn Around	
Project Number:	3/9/19	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Ganett Green	Due Date:	

Temp Blank:	Yes ☒ No ☐	Thermometer ID	
Temperature (°C):	2112.0	Correction Factor:	0.1
Received Intact:	Yes ☒ No ☐	Total Containers:	
Cooler Custody Seals:	Yes ☒ No ☐		
Sample Custody Seals:	Yes ☒ No ☐		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Work Order Notes
5501	S	3/21/19	1520	.5'	1	X	X	X	32.524275, -104.214930
5502	S		1535		1	X	X	X	
5503	S		1545		1	X	X	X	
5504	S		1600		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 regulated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1. Scott J. ...	2. Kimberly R. ...	3/21/19 - 0700	3. [Signature]	4. [Signature]	3/21/19 1130
5. [Signature]			6. [Signature]		

Analytical Report 627205

for
LT Environmental, Inc.

Project Manager: Dan Moir

ADU 562

19-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



19-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **627205**

ADU 562

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 627205. 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. 627205 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	06-07-19 09:40	8 ft	627205-001
SW01	S	06-07-19 12:10	0 - 5 ft	627205-002
SW02	S	06-07-19 12:15	0 - 5 ft	627205-003
SW03	S	06-07-19 12:20	0 - 5 ft	627205-004
SW04	S	06-07-19 12:25	0 - 5 ft	627205-005
FS01	S	06-07-19 12:40	4.5 - 5 ft	627205-006
FS02	S	06-07-19 12:45	4.5 - 5 ft	627205-007
FS03	S	06-07-19 12:50	4.5 - 5 ft	627205-008



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ADU 562*

Project ID:
Work Order Number(s): 627205

Report Date: 19-JUN-19
Date Received: 06/11/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3092686 BTEX by EPA 8021B

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

Batch: LBA-3092736 BTEX by EPA 8021B

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



Certificate of Analysis Summary 627205

LT Environmental, Inc., Arvada, CO

Project Name: ADU 562



Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Tue Jun-11-19 11:20 am

Report Date: 19-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	627205-001	627205-002	627205-003	627205-004	627205-005	627205-006
	Field Id:	PH01	SW01	SW02	SW03	SW04	FS01
	Depth:	8- ft	0-5 ft	0-5 ft	0-5 ft	0-5 ft	4.5-5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-07-19 09:40	Jun-07-19 12:10	Jun-07-19 12:15	Jun-07-19 12:20	Jun-07-19 12:25	Jun-07-19 12:40
BTEX by EPA 8021B	Extracted:	Jun-14-19 10:00	Jun-14-19 10:00	Jun-14-19 10:00	Jun-14-19 10:00	Jun-14-19 10:00	Jun-14-19 10:00
	Analyzed:	Jun-15-19 10:45	Jun-15-19 11:05	Jun-15-19 11:25	Jun-15-19 11:44	Jun-15-19 12:04	Jun-15-19 12:24
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00402 0.00402	<0.00399 0.00399	<0.00401 0.00401	<0.00403 0.00403	<0.00400 0.00400	<0.00401 0.00401
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	Extracted:	Jun-11-19 17:10	Jun-11-19 17:10	Jun-11-19 17:10	Jun-11-19 17:10	Jun-12-19 08:30	Jun-12-19 08:30
	Analyzed:	Jun-11-19 19:22	Jun-11-19 19:27	Jun-11-19 19:32	Jun-11-19 19:37	Jun-12-19 11:19	Jun-12-19 11:26
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		175 5.02	728 4.99	783 5.00	164 5.00	242 5.00	217 5.05
TPH by SW8015 Mod	Extracted:	Jun-14-19 12:00	Jun-14-19 12:00	Jun-14-19 12:00	Jun-14-19 12:00	Jun-14-19 12:00	Jun-14-19 12:00
	Analyzed:	Jun-15-19 02:29	Jun-15-19 03:43	Jun-15-19 04:07	Jun-15-19 04:32	Jun-15-19 04:56	Jun-15-19 05:21
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627205

LT Environmental, Inc., Arvada, CO

Project Name: ADU 562



Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Tue Jun-11-19 11:20 am

Report Date: 19-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	627205-007	627205-008				
	Field Id:	FS02	FS03				
	Depth:	4.5-5 ft	4.5-5 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jun-07-19 12:45	Jun-07-19 12:50				
BTEX by EPA 8021B	Extracted:	Jun-14-19 14:00	Jun-14-19 14:00				
	Analyzed:	Jun-18-19 07:15	Jun-18-19 07:36				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00200 0.00200	<0.00200 0.00200				
	Toluene	<0.00200 0.00200	<0.00200 0.00200				
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200				
m,p-Xylenes		<0.00399 0.00399	<0.00401 0.00401				
o-Xylene		<0.00200 0.00200	<0.00200 0.00200				
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200				
Total BTEX		<0.00200 0.00200	<0.00200 0.00200				
Chloride by EPA 300	Extracted:	Jun-12-19 08:30	Jun-12-19 08:30				
	Analyzed:	Jun-12-19 11:48	Jun-12-19 11:55				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	742 5.05	749 5.05				
TPH by SW8015 Mod	Extracted:	Jun-14-19 12:00	Jun-14-19 12:00				
	Analyzed:	Jun-15-19 05:45	Jun-15-19 06:09				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0				
	Diesel Range Organics (DRO)	<15.0 15.0	<15.0 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		<15.0 15.0	<15.0 15.0				
Total GRO-DRO		<15.0 15.0	<15.0 15.0				

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH01**
Lab Sample Id: 627205-001

Matrix: Soil
Date Collected: 06.07.19 09.40

Date Received: 06.11.19 11.20
Sample Depth: 8 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091958

Date Prep: 06.11.19 17.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	175	5.02	mg/kg	06.11.19 19.22		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092435

Date Prep: 06.14.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.15.19 02.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.15.19 02.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.15.19 02.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.15.19 02.29	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.15.19 02.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	06.15.19 02.29	
o-Terphenyl	84-15-1	78	%	70-135	06.15.19 02.29	



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH01**
Lab Sample Id: 627205-001

Matrix: Soil
Date Collected: 06.07.19 09.40

Date Received: 06.11.19 11.20
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: DVM

% Moisture:

Analyst: DVM

Date Prep: 06.14.19 10.00

Basis: Wet Weight

Seq Number: 3092686

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.15.19 10.45	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.15.19 10.45	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.15.19 10.45	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.15.19 10.45	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.15.19 10.45	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.15.19 10.45	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.15.19 10.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.15.19 10.45		
4-Bromofluorobenzene	460-00-4	77	%	70-130	06.15.19 10.45		



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW01**
Lab Sample Id: 627205-002

Matrix: Soil
Date Collected: 06.07.19 12.10

Date Received: 06.11.19 11.20
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091958

Date Prep: 06.11.19 17.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	728	4.99	mg/kg	06.11.19 19.27		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092435

Date Prep: 06.14.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.15.19 03.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.15.19 03.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.15.19 03.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.15.19 03.43	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.15.19 03.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	06.15.19 03.43	
o-Terphenyl	84-15-1	81	%	70-135	06.15.19 03.43	



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW01**
Lab Sample Id: 627205-002

Matrix: Soil
Date Collected: 06.07.19 12.10

Date Received: 06.11.19 11.20
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092686

Date Prep: 06.14.19 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.15.19 11.05	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.15.19 11.05	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.15.19 11.05	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.15.19 11.05	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.15.19 11.05	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.15.19 11.05	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.15.19 11.05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.15.19 11.05		
4-Bromofluorobenzene	460-00-4	75	%	70-130	06.15.19 11.05		



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW02**
Lab Sample Id: 627205-003

Matrix: Soil
Date Collected: 06.07.19 12.15

Date Received: 06.11.19 11.20
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091958

Date Prep: 06.11.19 17.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	783	5.00	mg/kg	06.11.19 19.32		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092435

Date Prep: 06.14.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.15.19 04.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.15.19 04.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.15.19 04.07	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.15.19 04.07	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.15.19 04.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	06.15.19 04.07	
o-Terphenyl	84-15-1	90	%	70-135	06.15.19 04.07	



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW02**
Lab Sample Id: 627205-003

Matrix: Soil
Date Collected: 06.07.19 12.15

Date Received: 06.11.19 11.20
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092686

Date Prep: 06.14.19 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.15.19 11.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.15.19 11.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.15.19 11.25	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.15.19 11.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.15.19 11.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.15.19 11.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.15.19 11.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	76	%	70-130	06.15.19 11.25		
1,4-Difluorobenzene	540-36-3	112	%	70-130	06.15.19 11.25		



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW03**
Lab Sample Id: 627205-004

Matrix: Soil
Date Collected: 06.07.19 12.20

Date Received: 06.11.19 11.20
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091958

Date Prep: 06.11.19 17.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	164	5.00	mg/kg	06.11.19 19.37		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092435

Date Prep: 06.14.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.15.19 04.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.15.19 04.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.15.19 04.32	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.15.19 04.32	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.15.19 04.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	06.15.19 04.32	
o-Terphenyl	84-15-1	86	%	70-135	06.15.19 04.32	



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW03**
Lab Sample Id: 627205-004

Matrix: Soil
Date Collected: 06.07.19 12.20

Date Received: 06.11.19 11.20
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092686

Date Prep: 06.14.19 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.15.19 11.44	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.15.19 11.44	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.15.19 11.44	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.15.19 11.44	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.15.19 11.44	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.15.19 11.44	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.15.19 11.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	74	%	70-130	06.15.19 11.44		
1,4-Difluorobenzene	540-36-3	108	%	70-130	06.15.19 11.44		



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW04**
Lab Sample Id: 627205-005

Matrix: Soil
Date Collected: 06.07.19 12.25

Date Received: 06.11.19 11.20
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092072

Date Prep: 06.12.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	242	5.00	mg/kg	06.12.19 11.19		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092435

Date Prep: 06.14.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.15.19 04.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.15.19 04.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.15.19 04.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.15.19 04.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.15.19 04.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	06.15.19 04.56	
o-Terphenyl	84-15-1	80	%	70-135	06.15.19 04.56	



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW04**
Lab Sample Id: 627205-005

Matrix: Soil
Date Collected: 06.07.19 12.25

Date Received: 06.11.19 11.20
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092686

Date Prep: 06.14.19 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.15.19 12.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.15.19 12.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.15.19 12.04	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.15.19 12.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.15.19 12.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.15.19 12.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.15.19 12.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	06.15.19 12.04		
4-Bromofluorobenzene	460-00-4	75	%	70-130	06.15.19 12.04		



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS01**
Lab Sample Id: 627205-006

Matrix: Soil
Date Collected: 06.07.19 12.40

Date Received: 06.11.19 11.20
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092072

Date Prep: 06.12.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	217	5.05	mg/kg	06.12.19 11.26		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092435

Date Prep: 06.14.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.15.19 05.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.15.19 05.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.15.19 05.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.15.19 05.21	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.15.19 05.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	06.15.19 05.21	
o-Terphenyl	84-15-1	83	%	70-135	06.15.19 05.21	



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS01**
Lab Sample Id: 627205-006

Matrix: Soil
Date Collected: 06.07.19 12.40

Date Received: 06.11.19 11.20
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092686

Date Prep: 06.14.19 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.15.19 12.24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.15.19 12.24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.15.19 12.24	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.15.19 12.24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.15.19 12.24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.15.19 12.24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.15.19 12.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	78	%	70-130	06.15.19 12.24		
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.15.19 12.24		



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS02**
Lab Sample Id: 627205-007

Matrix: Soil
Date Collected: 06.07.19 12.45

Date Received: 06.11.19 11.20
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092072

Date Prep: 06.12.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	742	5.05	mg/kg	06.12.19 11.48		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092435

Date Prep: 06.14.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.15.19 05.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.15.19 05.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.15.19 05.45	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.15.19 05.45	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.15.19 05.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	06.15.19 05.45	
o-Terphenyl	84-15-1	89	%	70-135	06.15.19 05.45	



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS02**
Lab Sample Id: 627205-007

Matrix: Soil
Date Collected: 06.07.19 12.45

Date Received: 06.11.19 11.20
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092736

Date Prep: 06.14.19 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.18.19 07.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.18.19 07.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.18.19 07.15	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.18.19 07.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.18.19 07.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.18.19 07.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.18.19 07.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.18.19 07.15		
4-Bromofluorobenzene	460-00-4	111	%	70-130	06.18.19 07.15		



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS03**
Lab Sample Id: 627205-008

Matrix: Soil
Date Collected: 06.07.19 12.50

Date Received: 06.11.19 11.20
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092072

Date Prep: 06.12.19 08.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	749	5.05	mg/kg	06.12.19 11.55		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092435

Date Prep: 06.14.19 12.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.15.19 06.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.15.19 06.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.15.19 06.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.15.19 06.09	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.15.19 06.09	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	83	%	70-135	06.15.19 06.09	
84-15-1	78	%	70-135	06.15.19 06.09	



Certificate of Analytical Results 627205



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS03**
Lab Sample Id: 627205-008

Matrix: Soil
Date Collected: 06.07.19 12.50

Date Received: 06.11.19 11.20
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092736

Date Prep: 06.14.19 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.18.19 07.36	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.18.19 07.36	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.18.19 07.36	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.18.19 07.36	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.18.19 07.36	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.18.19 07.36	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.18.19 07.36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.18.19 07.36		
4-Bromofluorobenzene	460-00-4	113	%	70-130	06.18.19 07.36		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 627205

LT Environmental, Inc. ADU 562

Analytical Method: Chloride by EPA 300

Seq Number: 3091958

MB Sample Id: 7679672-1-BLK

Matrix: Solid

LCS Sample Id: 7679672-1-BKS

Prep Method: E300P

Date Prep: 06.11.19

LCSD Sample Id: 7679672-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	244	98	248	99	90-110	2	20	mg/kg	06.11.19 17:16	

Analytical Method: Chloride by EPA 300

Seq Number: 3092072

MB Sample Id: 7679680-1-BLK

Matrix: Solid

LCS Sample Id: 7679680-1-BKS

Prep Method: E300P

Date Prep: 06.12.19

LCSD Sample Id: 7679680-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	242	97	243	97	90-110	0	20	mg/kg	06.12.19 09:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3091958

Parent Sample Id: 627196-004

Matrix: Soil

MS Sample Id: 627196-004 S

Prep Method: E300P

Date Prep: 06.11.19

MSD Sample Id: 627196-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.05	253	274	106	274	106	90-110	0	20	mg/kg	06.11.19 17:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3091958

Parent Sample Id: 627273-002

Matrix: Soil

MS Sample Id: 627273-002 S

Prep Method: E300P

Date Prep: 06.11.19

MSD Sample Id: 627273-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.54	252	271	104	271	104	90-110	0	20	mg/kg	06.11.19 18:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3092072

Parent Sample Id: 627091-008

Matrix: Soil

MS Sample Id: 627091-008 S

Prep Method: E300P

Date Prep: 06.12.19

MSD Sample Id: 627091-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.36	249	271	108	271	108	90-110	0	20	mg/kg	06.12.19 09:23	

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

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

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

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



QC Summary 627205

LT Environmental, Inc. ADU 562

Analytical Method: Chloride by EPA 300

Seq Number: 3092072

Parent Sample Id: 627091-016

Matrix: Soil

MS Sample Id: 627091-016 S

Prep Method: E300P

Date Prep: 06.12.19

MSD Sample Id: 627091-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.855	249	242	97	242	97	90-110	0	20	mg/kg	06.12.19 11:04	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092435

MB Sample Id: 7680003-1-BLK

Matrix: Solid

LCS Sample Id: 7680003-1-BKS

Prep Method: TX1005P

Date Prep: 06.14.19

LCSD Sample Id: 7680003-1-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)	14.8	1000	862	86	841	84	70-135	2	20	mg/kg	06.15.19 01:41	
Diesel Range Organics (DRO)	<8.13	1000	899	90	876	88	70-135	3	20	mg/kg	06.15.19 01:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		86		83		70-135	%	06.15.19 01:41
o-Terphenyl	92		99		94		70-135	%	06.15.19 01:41

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092435

Parent Sample Id: 627205-001

Matrix: Soil

MS Sample Id: 627205-001 S

Prep Method: TX1005P

Date Prep: 06.14.19

MSD Sample Id: 627205-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	14.8	1000	789	77	800	79	70-135	1	20	mg/kg	06.15.19 02:54	
Diesel Range Organics (DRO)	8.75	1000	828	82	845	84	70-135	2	20	mg/kg	06.15.19 02:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	73		77		70-135	%	06.15.19 02:54
o-Terphenyl	90		86		70-135	%	06.15.19 02:54

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

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

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

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



QC Summary 627205

LT Environmental, Inc.

ADU 562

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092686

MB Sample Id: 7680032-1-BLK

Matrix: Solid

LCS Sample Id: 7680032-1-BKS

Prep Method: SW5030B

Date Prep: 06.14.19

LCSD Sample Id: 7680032-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0880	88	0.0894	90	70-130	2	35	mg/kg	06.15.19 04:26	
Toluene	<0.00201	0.100	0.0798	80	0.0808	81	70-130	1	35	mg/kg	06.15.19 04:26	
Ethylbenzene	<0.00201	0.100	0.0900	90	0.0913	92	70-130	1	35	mg/kg	06.15.19 04:26	
m,p-Xylenes	<0.00402	0.201	0.181	90	0.183	92	70-130	1	35	mg/kg	06.15.19 04:26	
o-Xylene	<0.00201	0.100	0.0867	87	0.0878	88	70-130	1	35	mg/kg	06.15.19 04:26	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	110		109		109		70-130			%	06.15.19 04:26	
4-Bromofluorobenzene	73		86		86		70-130			%	06.15.19 04:26	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092736

MB Sample Id: 7680039-1-BLK

Matrix: Solid

LCS Sample Id: 7680039-1-BKS

Prep Method: SW5030B

Date Prep: 06.14.19

LCSD Sample Id: 7680039-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0743	74	0.0838	84	70-130	12	35	mg/kg	06.18.19 05:06	
Toluene	<0.000455	0.0998	0.0765	77	0.0843	84	70-130	10	35	mg/kg	06.18.19 05:06	
Ethylbenzene	<0.000564	0.0998	0.0883	88	0.0964	96	70-130	9	35	mg/kg	06.18.19 05:06	
m,p-Xylenes	<0.00101	0.200	0.177	89	0.192	96	70-130	8	35	mg/kg	06.18.19 05:06	
o-Xylene	<0.00200	0.0998	0.0850	85	0.0924	92	70-130	8	35	mg/kg	06.18.19 05:06	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	97		95		96		70-130			%	06.18.19 05:06	
4-Bromofluorobenzene	110		106		103		70-130			%	06.18.19 05:06	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092686

Parent Sample Id: 627201-001

Matrix: Soil

MS Sample Id: 627201-001 S

Prep Method: SW5030B

Date Prep: 06.14.19

MSD Sample Id: 627201-001 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	0.0923	91	0.0869	87	70-130	6	35	mg/kg	06.15.19 05:00	
Toluene	<0.00201	0.101	0.0835	83	0.0781	78	70-130	7	35	mg/kg	06.15.19 05:00	
Ethylbenzene	<0.00201	0.101	0.0943	93	0.0886	89	70-130	6	35	mg/kg	06.15.19 05:00	
m,p-Xylenes	<0.00402	0.201	0.190	95	0.179	90	70-130	6	35	mg/kg	06.15.19 05:00	
o-Xylene	<0.00201	0.101	0.0911	90	0.0863	86	70-130	5	35	mg/kg	06.15.19 05:00	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits		Units	Analysis Date		
1,4-Difluorobenzene			111		109		70-130		%	06.15.19 05:00		
4-Bromofluorobenzene			89		88		70-130		%	06.15.19 05:00		

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

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

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

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



QC Summary 627205

LT Environmental, Inc. ADU 562

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092736

Parent Sample Id: 627205-007

Matrix: Soil

MS Sample Id: 627205-007 S

Prep Method: SW5030B

Date Prep: 06.14.19

MSD Sample Id: 627205-007 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	0.0813	80	0.0862	86	70-130	6	35	mg/kg	06.18.19 05:46	
Toluene	<0.00201	0.101	0.0826	82	0.0840	84	70-130	2	35	mg/kg	06.18.19 05:46	
Ethylbenzene	<0.00201	0.101	0.0942	93	0.0944	94	70-130	0	35	mg/kg	06.18.19 05:46	
m,p-Xylenes	<0.00102	0.201	0.189	94	0.188	94	70-130	1	35	mg/kg	06.18.19 05:46	
o-Xylene	<0.00201	0.101	0.0921	91	0.0911	91	70-130	1	35	mg/kg	06.18.19 05:46	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		98		70-130	%	06.18.19 05:46
4-Bromofluorobenzene	110		104		70-130	%	06.18.19 05:46

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

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Page 2

Project Manager:		Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:		LT Environmental, Inc., Permian office	Company Name:	XTO
Address:		3300 North A Street	Address:	
City, State ZIP:		Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:		432.704.5178	Email:	Ggreen@ltenv.com

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

Project Name:	ADU562	Turn Around
Project Number:		Routine ☒
P.O. Number:	2AP-5332	Rush:
Sampler's Name:	Garrett Green	Due Date:

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	0.8/0.9				Thermometer		
Received intact:	Yes	No					
Cooler Custody Seals:	Yes	No			Correction Factor:		
Sample Custody Seals:	Yes	No			Total Containers:		

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (E)	Chloride
PA01	S	8/6/14	0940	8'	1	X	X	X
SW01	S		1210	0'-5'	1	X		
SW01	S		1215	0'-5'	1			
SW03	S		1220	0'-5'	1			
SW04	S		1225	0'-5'	1			
F501 SW04	S		1240	4'5"-5'	1			
E502	S		1245	4'5"-5'	1			
E503	S		1250	4'5"-5'	1	X	X	X

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 / 2451 / 7470 / 74

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>			2 <i>[Signature]</i>		
3 <i>[Signature]</i>		6/7/19 - 1640	4		
5			6		



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/11/2019 11:20:00 AM

Work Order #: 627205

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/11/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/11/2019

Analytical Report 627808

for
LT Environmental, Inc.

Project Manager: Dan Moir

ADU 562

26-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



26-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **627808**

ADU 562

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 627808. 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. 627808 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW05	S	06-12-19 12:15	0 - 5 ft	627808-001
SW06	S	06-12-19 12:20	0 - 5 ft	627808-002
SW07	S	06-12-19 12:25	0 - 5 ft	627808-003
SW08	S	06-12-19 12:30	0 - 5 ft	627808-004
FS04	S	06-12-19 12:45	9.5 - 5 ft	627808-005
FS05	S	06-12-19 12:50	9.5 - 5 ft	627808-006
FS06	S	06-12-19 12:55	9.5 - 5 ft	627808-007



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ADU 562*

Project ID:
Work Order Number(s): 627808

Report Date: 26-JUN-19
Date Received: 06/14/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3092979 Chloride by EPA 300

Lab Sample ID 627808-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 627808-003, -004, -005, -006, -007.

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



Certificate of Analysis Summary 627808

LT Environmental, Inc., Arvada, CO

Project Name: ADU 562



Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Fri Jun-14-19 12:15 pm

Report Date: 26-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627808-001	627808-002	627808-003	627808-004	627808-005	627808-006
	<i>Field Id:</i>	SW05	SW06	SW07	SW08	FS04	FS05
	<i>Depth:</i>	0-5 ft	0-5 ft	0-5 ft	0-5 ft	9.5-5 ft	9.5-5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-12-19 12:15	Jun-12-19 12:20	Jun-12-19 12:25	Jun-12-19 12:30	Jun-12-19 12:45	Jun-12-19 12:50
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>	Jun-25-19 12:45	Jun-25-19 12:45	Jun-25-19 12:45	Jun-25-19 12:45	Jun-25-19 12:45	Jun-25-19 12:45
	<i>Analyzed:</i>	Jun-25-19 13:18	Jun-25-19 13:38	Jun-25-19 13:57	Jun-25-19 14:17	Jun-25-19 14:37	Jun-25-19 14:56
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100
Toluene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100
Ethylbenzene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100
m,p-Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
o-Xylene		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100
Total Xylenes		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100
Total BTEX		<0.000994 0.000994	<0.00100 0.00100	<0.00100 0.00100	<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100
Chloride by EPA 300	<i>Extracted:</i>	Jun-19-19 09:10	Jun-19-19 09:10	Jun-19-19 10:32	Jun-19-19 10:32	Jun-19-19 10:32	Jun-19-19 10:32
	<i>Analyzed:</i>	Jun-19-19 16:49	Jun-19-19 16:57	Jun-19-19 14:14	Jun-19-19 14:29	Jun-19-19 14:33	Jun-19-19 15:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		511 5.01	503 5.00	837 5.02	1680 25.1	1050 5.00	580 4.97
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-15-19 16:00	Jun-15-19 16:00	Jun-15-19 16:00	Jun-15-19 16:00	Jun-15-19 16:00	Jun-15-19 16:00
	<i>Analyzed:</i>	Jun-16-19 20:57	Jun-16-19 21:21	Jun-16-19 21:46	Jun-16-19 22:11	Jun-16-19 22:36	Jun-16-19 23:01
	<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)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<14.9 14.9

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

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627808

LT Environmental, Inc., Arvada, CO

Project Name: ADU 562



Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Fri Jun-14-19 12:15 pm

Report Date: 26-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	627808-007					
	Field Id:	FS06					
	Depth:	9.5-5 ft					
	Matrix:	SOIL					
	Sampled:	Jun-12-19 12:55					
BTEX by SW 8260C SUB: T104704215-19-29	Extracted:	Jun-25-19 12:45					
	Analyzed:	Jun-25-19 15:16					
	Units/RL:	mg/kg RL					
	Benzene	<0.00100 0.00100					
	Toluene	<0.00100 0.00100					
	Ethylbenzene	<0.00100 0.00100					
	m,p-Xylenes	<0.00200 0.00200					
	o-Xylene	<0.00100 0.00100					
	Total Xylenes	<0.00100 0.00100					
	Total BTEX	<0.00100 0.00100					
Chloride by EPA 300	Extracted:	Jun-19-19 10:32					
	Analyzed:	Jun-19-19 14:38					
	Units/RL:	mg/kg RL					
	Chloride	682 5.04					
TPH by SW8015 Mod	Extracted:	Jun-15-19 16:00					
	Analyzed:	Jun-16-19 23:26					
	Units/RL:	mg/kg RL					
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0					
	Diesel Range Organics (DRO)	<15.0 15.0					
	Motor Oil Range Hydrocarbons (MRO)	<15.0 15.0					
	Total TPH	<15.0 15.0					
	Total GRO-DRO	<15.0 15.0					

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW05**
Lab Sample Id: 627808-001

Matrix: Soil
Date Collected: 06.12.19 12.15

Date Received: 06.14.19 12.15
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092967

Date Prep: 06.19.19 09.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	511	5.01	mg/kg	06.19.19 16.49		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092643

Date Prep: 06.15.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.16.19 20.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.16.19 20.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.16.19 20.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.16.19 20.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.16.19 20.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	06.16.19 20.57	
o-Terphenyl	84-15-1	85	%	70-135	06.16.19 20.57	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW05**
Lab Sample Id: 627808-001

Matrix: Soil
Date Collected: 06.12.19 12.15

Date Received: 06.14.19 12.15
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093418

Prep Method: SW5035A

% Moisture:

Date Prep: 06.25.19 12.45

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	06.25.19 13.18	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	06.25.19 13.18	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	06.25.19 13.18	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	06.25.19 13.18	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	06.25.19 13.18	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	06.25.19 13.18	U	1
Total BTEX		<0.000994	0.000994	mg/kg	06.25.19 13.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	93	%	74-126	06.25.19 13.18	
1,2-Dichloroethane-D4	17060-07-0	103	%	80-120	06.25.19 13.18	
Toluene-D8	2037-26-5	99	%	73-132	06.25.19 13.18	
4-Bromofluorobenzene	460-00-4	92	%	58-152	06.25.19 13.18	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW06**
Lab Sample Id: 627808-002

Matrix: Soil
Date Collected: 06.12.19 12.20

Date Received: 06.14.19 12.15
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092967

Date Prep: 06.19.19 09.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	503	5.00	mg/kg	06.19.19 16.57		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092643

Date Prep: 06.15.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.16.19 21.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.16.19 21.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.16.19 21.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.16.19 21.21	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.16.19 21.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.16.19 21.21	
o-Terphenyl	84-15-1	85	%	70-135	06.16.19 21.21	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW06**
Lab Sample Id: 627808-002

Matrix: Soil
Date Collected: 06.12.19 12.20

Date Received: 06.14.19 12.15
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093418

Prep Method: SW5035A

% Moisture:

Date Prep: 06.25.19 12.45

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	06.25.19 13.38	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	06.25.19 13.38	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	06.25.19 13.38	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	06.25.19 13.38	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	06.25.19 13.38	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	06.25.19 13.38	U	1
Total BTEX		<0.00100	0.00100	mg/kg	06.25.19 13.38	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7		97	%	74-126	06.25.19 13.38	
1,2-Dichloroethane-D4	17060-07-0		110	%	80-120	06.25.19 13.38	
Toluene-D8	2037-26-5		97	%	73-132	06.25.19 13.38	
4-Bromofluorobenzene	460-00-4		88	%	58-152	06.25.19 13.38	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW07**
Lab Sample Id: 627808-003

Matrix: Soil
Date Collected: 06.12.19 12.25

Date Received: 06.14.19 12.15
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092979

Date Prep: 06.19.19 10.32

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	837	5.02	mg/kg	06.19.19 14.14		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092643

Date Prep: 06.15.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.16.19 21.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.16.19 21.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.16.19 21.46	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.16.19 21.46	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.16.19 21.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	06.16.19 21.46	
o-Terphenyl	84-15-1	111	%	70-135	06.16.19 21.46	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW07**
Lab Sample Id: 627808-003

Matrix: Soil
Date Collected: 06.12.19 12.25

Date Received: 06.14.19 12.15
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093418

Date Prep: 06.25.19 12.45

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	06.25.19 13.57	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	06.25.19 13.57	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	06.25.19 13.57	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	06.25.19 13.57	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	06.25.19 13.57	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	06.25.19 13.57	U	1
Total BTEX		<0.00100	0.00100	mg/kg	06.25.19 13.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	102	%	74-126	06.25.19 13.57	
1,2-Dichloroethane-D4	17060-07-0	105	%	80-120	06.25.19 13.57	
Toluene-D8	2037-26-5	96	%	73-132	06.25.19 13.57	
4-Bromofluorobenzene	460-00-4	89	%	58-152	06.25.19 13.57	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW08**
Lab Sample Id: 627808-004

Matrix: Soil
Date Collected: 06.12.19 12.30

Date Received: 06.14.19 12.15
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092979

Date Prep: 06.19.19 10.32

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1680	25.1	mg/kg	06.19.19 14.29		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092643

Date Prep: 06.15.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.16.19 22.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.16.19 22.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.16.19 22.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.16.19 22.11	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.16.19 22.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	06.16.19 22.11	
o-Terphenyl	84-15-1	91	%	70-135	06.16.19 22.11	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW08**
Lab Sample Id: 627808-004

Matrix: Soil
Date Collected: 06.12.19 12.30

Date Received: 06.14.19 12.15
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093418

Prep Method: SW5035A

% Moisture:

Date Prep: 06.25.19 12.45

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	06.25.19 14.17	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	06.25.19 14.17	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	06.25.19 14.17	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	06.25.19 14.17	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	06.25.19 14.17	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	06.25.19 14.17	U	1
Total BTEX		<0.000998	0.000998	mg/kg	06.25.19 14.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	99	%	74-126	06.25.19 14.17	
1,2-Dichloroethane-D4	17060-07-0	112	%	80-120	06.25.19 14.17	
Toluene-D8	2037-26-5	96	%	73-132	06.25.19 14.17	
4-Bromofluorobenzene	460-00-4	92	%	58-152	06.25.19 14.17	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS04**
Lab Sample Id: 627808-005

Matrix: Soil
Date Collected: 06.12.19 12.45

Date Received: 06.14.19 12.15
Sample Depth: 9.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092979

Date Prep: 06.19.19 10.32

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1050	5.00	mg/kg	06.19.19 14.33		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092643

Date Prep: 06.15.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.16.19 22.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.16.19 22.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.16.19 22.36	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.16.19 22.36	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.16.19 22.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	06.16.19 22.36	
o-Terphenyl	84-15-1	105	%	70-135	06.16.19 22.36	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS04**
Lab Sample Id: 627808-005

Matrix: Soil
Date Collected: 06.12.19 12.45

Date Received: 06.14.19 12.15
Sample Depth: 9.5 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093418

Prep Method: SW5035A

% Moisture:

Date Prep: 06.25.19 12.45

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	06.25.19 14.37	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	06.25.19 14.37	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	06.25.19 14.37	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	06.25.19 14.37	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	06.25.19 14.37	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	06.25.19 14.37	U	1
Total BTEX		<0.000998	0.000998	mg/kg	06.25.19 14.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	100	%	74-126	06.25.19 14.37	
1,2-Dichloroethane-D4	17060-07-0	109	%	80-120	06.25.19 14.37	
Toluene-D8	2037-26-5	96	%	73-132	06.25.19 14.37	
4-Bromofluorobenzene	460-00-4	88	%	58-152	06.25.19 14.37	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS05**
Lab Sample Id: 627808-006

Matrix: Soil
Date Collected: 06.12.19 12.50

Date Received: 06.14.19 12.15
Sample Depth: 9.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092979

Date Prep: 06.19.19 10.32

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	580	4.97	mg/kg	06.19.19 15.22		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092643

Date Prep: 06.15.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.16.19 23.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.16.19 23.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.16.19 23.01	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.16.19 23.01	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.16.19 23.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.16.19 23.01	
o-Terphenyl	84-15-1	70	%	70-135	06.16.19 23.01	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS05**
Lab Sample Id: 627808-006

Matrix: Soil
Date Collected: 06.12.19 12.50

Date Received: 06.14.19 12.15
Sample Depth: 9.5 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093418

Prep Method: SW5035A

% Moisture:

Date Prep: 06.25.19 12.45

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	06.25.19 14.56	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	06.25.19 14.56	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	06.25.19 14.56	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	06.25.19 14.56	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	06.25.19 14.56	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	06.25.19 14.56	U	1
Total BTEX		<0.00100	0.00100	mg/kg	06.25.19 14.56	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7		101	%	74-126	06.25.19 14.56	
1,2-Dichloroethane-D4	17060-07-0		107	%	80-120	06.25.19 14.56	
Toluene-D8	2037-26-5		100	%	73-132	06.25.19 14.56	
4-Bromofluorobenzene	460-00-4		89	%	58-152	06.25.19 14.56	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS06**
Lab Sample Id: 627808-007

Matrix: Soil
Date Collected: 06.12.19 12.55

Date Received: 06.14.19 12.15
Sample Depth: 9.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092979

Date Prep: 06.19.19 10.32

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	682	5.04	mg/kg	06.19.19 14.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092643

Date Prep: 06.15.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.16.19 23.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.16.19 23.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.16.19 23.26	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.16.19 23.26	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.16.19 23.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.16.19 23.26	
o-Terphenyl	84-15-1	83	%	70-135	06.16.19 23.26	



Certificate of Analytical Results 627808



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS06**
Lab Sample Id: 627808-007

Matrix: Soil
Date Collected: 06.12.19 12.55

Date Received: 06.14.19 12.15
Sample Depth: 9.5 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093418

Prep Method: SW5035A

% Moisture:

Date Prep: 06.25.19 12.45

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	06.25.19 15.16	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	06.25.19 15.16	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	06.25.19 15.16	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	06.25.19 15.16	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	06.25.19 15.16	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	06.25.19 15.16	U	1
Total BTEX		<0.00100	0.00100	mg/kg	06.25.19 15.16	U	1
		% Recovery					
Surrogate	Cas Number			Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7		102	%	74-126	06.25.19 15.16	
1,2-Dichloroethane-D4	17060-07-0		108	%	80-120	06.25.19 15.16	
Toluene-D8	2037-26-5		101	%	73-132	06.25.19 15.16	
4-Bromofluorobenzene	460-00-4		88	%	58-152	06.25.19 15.16	

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 627808

LT Environmental, Inc. ADU 562

Analytical Method: Chloride by EPA 300

Seq Number: 3092967

MB Sample Id: 7680203-1-BLK

Matrix: Solid

LCS Sample Id: 7680203-1-BKS

Prep Method: E300P

Date Prep: 06.19.19

LCSD Sample Id: 7680203-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	243	97	243	97	90-110	0	20	mg/kg	06.19.19 09:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3092979

MB Sample Id: 7680210-1-BLK

Matrix: Solid

LCS Sample Id: 7680210-1-BKS

Prep Method: E300P

Date Prep: 06.19.19

LCSD Sample Id: 7680210-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	247	99	248	99	90-110	0	20	mg/kg	06.19.19 14:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3092967

Parent Sample Id: 627896-018

Matrix: Soil

MS Sample Id: 627896-018 S

Prep Method: E300P

Date Prep: 06.19.19

MSD Sample Id: 627896-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	181	251	422	96	422	96	90-110	0	20	mg/kg	06.19.19 09:47	

Analytical Method: Chloride by EPA 300

Seq Number: 3092967

Parent Sample Id: 627901-001

Matrix: Soil

MS Sample Id: 627901-001 S

Prep Method: E300P

Date Prep: 06.19.19

MSD Sample Id: 627901-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	30.7	251	292	104	293	105	90-110	0	20	mg/kg	06.19.19 15:30	

Analytical Method: Chloride by EPA 300

Seq Number: 3092979

Parent Sample Id: 627808-003

Matrix: Soil

MS Sample Id: 627808-003 S

Prep Method: E300P

Date Prep: 06.19.19

MSD Sample Id: 627808-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	837	251	992	62	995	63	90-110	0	20	mg/kg	06.19.19 14:19	X

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

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

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

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



QC Summary 627808

LT Environmental, Inc. ADU 562

Analytical Method: Chloride by EPA 300

Seq Number: 3092979

Parent Sample Id: 627808-006

Matrix: Soil

MS Sample Id: 627808-006 S

Prep Method: E300P

Date Prep: 06.19.19

MSD Sample Id: 627808-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	580	249	776	79	767	75	90-110	1	20	mg/kg	06.19.19 15:27	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092643

MB Sample Id: 7680011-1-BLK

Matrix: Solid

LCS Sample Id: 7680011-1-BKS

Prep Method: TX1005P

Date Prep: 06.15.19

LCSD Sample Id: 7680011-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	973	97	883	88	70-135	10	20	mg/kg	06.16.19 14:56	
Diesel Range Organics (DRO)	<8.13	1000	987	99	869	87	70-135	13	20	mg/kg	06.16.19 14:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		110		98		70-135	%	06.16.19 14:56
o-Terphenyl	103		115		99		70-135	%	06.16.19 14:56

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092643

Parent Sample Id: 627512-001

Matrix: Soil

MS Sample Id: 627512-001 S

Prep Method: TX1005P

Date Prep: 06.15.19

MSD Sample Id: 627512-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.98	997	871	87	833	84	70-135	4	20	mg/kg	06.16.19 16:09	
Diesel Range Organics (DRO)	36.9	997	886	85	822	79	70-135	7	20	mg/kg	06.16.19 16:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		92		70-135	%	06.16.19 16:09
o-Terphenyl	96		89		70-135	%	06.16.19 16:09

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

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

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.
ADU 562

Analytical Method: BTEX by SW 8260C

Seq Number: 3093418

MB Sample Id: 7680681-1-BLK

Matrix: Solid

LCS Sample Id: 7680681-1-BKS

Prep Method: SW5030B

Date Prep: 06.25.19

LCSD Sample Id: 7680681-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0500	0.0497	99	0.0502	100	62-132	1	25	mg/kg	06.25.19 08:53	
Toluene	<0.00100	0.0500	0.0528	106	0.0534	107	66-124	1	25	mg/kg	06.25.19 08:53	
Ethylbenzene	<0.00100	0.0500	0.0527	105	0.0537	107	71-134	2	25	mg/kg	06.25.19 08:53	
m,p-Xylenes	<0.00200	0.100	0.106	106	0.107	107	69-128	1	25	mg/kg	06.25.19 08:53	
o-Xylene	<0.00100	0.0500	0.0504	101	0.0509	102	72-131	1	25	mg/kg	06.25.19 08:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	98		97		92		74-126	%	06.25.19 08:53
1,2-Dichloroethane-D4	107		99		94		80-120	%	06.25.19 08:53
Toluene-D8	102		97		95		73-132	%	06.25.19 08:53
4-Bromofluorobenzene	88		107		108		58-152	%	06.25.19 08:53

Analytical Method: BTEX by SW 8260C

Seq Number: 3093418

Parent Sample Id: 628719-002

Matrix: Soil

MS Sample Id: 628719-002 S

Prep Method: SW5030B

Date Prep: 06.25.19

MSD Sample Id: 628719-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00119	0.0593	0.0385	65	0.0433	73	62-132	12	25	mg/kg	06.25.19 10:34	
Toluene	<0.00119	0.0593	0.0400	67	0.0445	75	66-124	11	25	mg/kg	06.25.19 10:34	
Ethylbenzene	<0.00119	0.0593	0.0414	70	0.0449	76	71-134	8	25	mg/kg	06.25.19 10:34	X
m,p-Xylenes	<0.00237	0.119	0.0801	67	0.0906	77	69-128	12	25	mg/kg	06.25.19 10:34	X
o-Xylene	<0.00119	0.0593	0.0365	62	0.0406	69	72-131	11	25	mg/kg	06.25.19 10:34	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	102		99		74-126	%	06.25.19 10:34
1,2-Dichloroethane-D4	115		107		80-120	%	06.25.19 10:34
Toluene-D8	93		92		73-132	%	06.25.19 10:34
4-Bromofluorobenzene	100		105		58-152	%	06.25.19 10:34

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



Chain of Custody

Work Order No:

1027808

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

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

www.xenco.com

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, TX 79705
Phone:	432.704.5178	Email:	Green@ltenv.com

Project Name:	ADV 562	Turn Around	☒ Routine
Project Number:	2RP-5332	Rush:	
P.O. Number:		Due Date:	
Sampler's Name:	Garrett Green		

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

Project Name:	ADV 562	Turn Around	☒ Routine
Project Number:	2RP-5332	Rush:	
P.O. Number:		Due Date:	
Sampler's Name:	Garrett Green		

Temp Blank:	Yes ☐ No ☒	Wet Ice:	☒ No ☐
Temperature (°C):	0.0/0.4	Thermometer:	122
Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2
Cooler Custody Seals:	Yes ☐ No ☒ N/A	Total Containers:	
Sample Custody Seals:	Yes ☐ No ☒ N/A		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	Work Order Notes
SW05	S	06/12/19	1215	0'-5'	1	X	X	X	
SW06	S		1220		1	X	X	X	
SW07	S		1225		1	X	X	X	
SW08	S		1236		1	X	X	X	
FS04	F		1245	4.5'-5'	1	X	X	X	
FS05	F		1250		1	X	X	X	
FS06	F		1255		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
		06/12/19 16:45			

ORIGIN D:CAOA (281) 240-4200
 SAMPLE CUSTODY
 XENCO LABORATORIES NM
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 13JUN19
 ACTWGT: 48.00 LB
 CAD: 114488676/NINET4100
 DIMS: 24x13x13 IN
 BILL SENDER

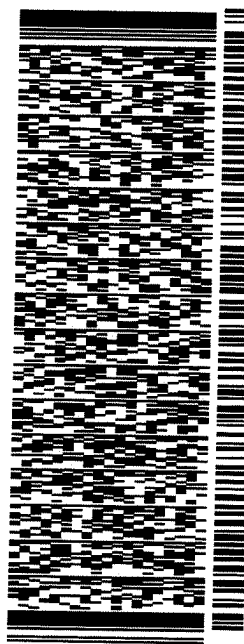
TO SAMPLE RECEIVING

3600 S COUNTY ROAD 1276

MIDLAND TX 79706

REF: (432) 704-5440

PO: NV: DEPT:



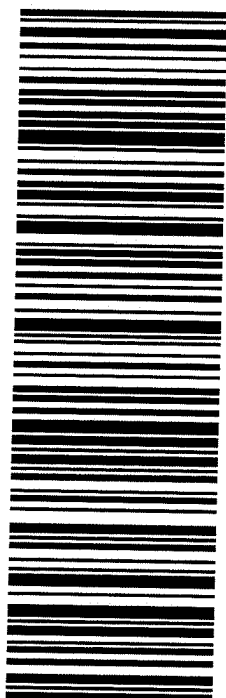
565J1/D210/23AD

TRK# 7754 6954 8179
 0201

FRI - 14 JUN HOLD
 PRIORITY OVERNIGHT

41 MAFA

HLD 79706
 TX-US LBB



After printing this label:

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

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Inter-Office Shipment

IOS Number : **42126**

Date/Time: 06.24.2019 14:23 Created by: Jessica Kramer
 Lab# From: **Midland** Delivery Priority:
 Lab# To: **Houston** Air Bill No.: 775553778262

Please send report to: Jessica Kramer
 Address: 1211 W. Florida Ave
 E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
627808-001	S	SW05	06.12.2019 12:15	SW8260CBTEX	BTEX by SW 8260C	06.20.2019	06.26.2019 12:15	JKR	BZ BZME EBZ XYLENE	
627808-002	S	SW06	06.12.2019 12:20	SW8260CBTEX	BTEX by SW 8260C	06.20.2019	06.26.2019 12:20	JKR	BZ BZME EBZ XYLENE	
627808-003	S	SW07	06.12.2019 12:25	SW8260CBTEX	BTEX by SW 8260C	06.20.2019	06.26.2019 12:25	JKR	BZ BZME EBZ XYLENE	
627808-004	S	SW08	06.12.2019 12:30	SW8260CBTEX	BTEX by SW 8260C	06.20.2019	06.26.2019 12:30	JKR	BZ BZME EBZ XYLENE	
627808-005	S	FS04	06.12.2019 12:45	SW8260CBTEX	BTEX by SW 8260C	06.20.2019	06.26.2019 12:45	JKR	BZ BZME EBZ XYLENE	
627808-006	S	FS05	06.12.2019 12:50	SW8260CBTEX	BTEX by SW 8260C	06.20.2019	06.26.2019 12:50	JKR	BZ BZME EBZ XYLENE	
627808-007	S	FS06	06.12.2019 12:55	SW8260CBTEX	BTEX by SW 8260C	06.20.2019	06.26.2019 12:55	JKR	BZ BZME EBZ XYLENE	

Inter Office Shipment or Sample Comments:

SAMPLES BREAK HOLD 06/26

Relinquished By: Jessica Kramer
 Jessica Kramer

Date Relinquished: 06.24.2019

Received By: Ashly Kowalski
 Ashly Kowalski

Date Received: 06.25.2019 09:40

Cooler Temperature: 0.6



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 42126

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Jessica Kramer

Date Sent: 06.24.2019 02.23 PM

Received By: Ashly Kowalski

Date Received: 06.25.2019 09.40 AM

Sample Receipt Checklist

Comments

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

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

NonConformance:

SAMPLES BREAK HOLD 06/26

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Ashly Kowalski

Date: 06.25.2019



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/14/2019 12:15:00 PM

Work Order #: 627808

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/14/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/14/2019

Analytical Report 627895

for
LT Environmental, Inc.

Project Manager: Dan Moir

ADU 562

19-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



19-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **627895**

ADU 562

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 627895. 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. 627895 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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



Sample Cross Reference 627895



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH02	S	06-13-19 14:20	20 ft	627895-001



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ADU 562*

Project ID:
Work Order Number(s): 627895

Report Date: 19-JUN-19
Date Received: 06/17/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3092646 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 627897-001 S, 627897-001 SD.

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 627897-001 SD.

Batch: LBA-3092723 BTEX by EPA 8021B

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



Certificate of Analysis Summary 627895

LT Environmental, Inc., Arvada, CO

Project Name: ADU 562



Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Mon Jun-17-19 07:25 am

Report Date: 19-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	627895-001					
	Field Id:	PH02					
	Depth:	20- ft					
	Matrix:	SOIL					
	Sampled:	Jun-13-19 14:20					
BTEX by EPA 8021B	Extracted:	Jun-17-19 12:00					
	Analyzed:	Jun-18-19 01:45					
	Units/RL:	mg/kg RL					
Benzene		<0.00199 0.00199					
Toluene		<0.00199 0.00199					
Ethylbenzene		<0.00199 0.00199					
m,p-Xylenes		<0.00398 0.00398					
o-Xylene		<0.00199 0.00199					
Total Xylenes		<0.00199 0.00199					
Total BTEX		<0.00199 0.00199					
Chloride by EPA 300	Extracted:	Jun-17-19 14:02					
	Analyzed:	Jun-18-19 13:30					
	Units/RL:	mg/kg RL					
Chloride		144 5.04					
TPH by SW8015 Mod	Extracted:	Jun-17-19 12:00					
	Analyzed:	Jun-17-19 22:06					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0					
Diesel Range Organics (DRO)		<15.0 15.0					
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0					
Total TPH		<15.0 15.0					
Total GRO-DRO		<15.0 15.0					

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

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

Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 627895



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH02**
Lab Sample Id: 627895-001

Matrix: Soil
Date Collected: 06.13.19 14.20

Date Received: 06.17.19 07.25
Sample Depth: 20 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3092682

Date Prep: 06.17.19 14.02

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	144	5.04	mg/kg	06.18.19 13.30		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3092646

Date Prep: 06.17.19 12.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.17.19 22.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.17.19 22.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.17.19 22.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.17.19 22.06	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.17.19 22.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	134	%	70-135	06.17.19 22.06	
o-Terphenyl	84-15-1	114	%	70-135	06.17.19 22.06	



Certificate of Analytical Results 627895



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH02**
Lab Sample Id: 627895-001

Matrix: Soil
Date Collected: 06.13.19 14.20

Date Received: 06.17.19 07.25
Sample Depth: 20 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3092723

Date Prep: 06.17.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.18.19 01.45	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.18.19 01.45	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.18.19 01.45	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.18.19 01.45	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.18.19 01.45	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.18.19 01.45	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.18.19 01.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	06.18.19 01.45		
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.18.19 01.45		

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 627895

LT Environmental, Inc. ADU 562

Analytical Method: Chloride by EPA 300

Seq Number: 3092682

MB Sample Id: 7680070-1-BLK

Matrix: Solid

LCS Sample Id: 7680070-1-BKS

Prep Method: E300P

Date Prep: 06.17.19

LCSD Sample Id: 7680070-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	253	101	254	102	90-110	0	20	mg/kg	06.18.19 13:19	

Analytical Method: Chloride by EPA 300

Seq Number: 3092682

Parent Sample Id: 627895-001

Matrix: Soil

MS Sample Id: 627895-001 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627895-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	144	252	416	108	421	110	90-110	1	20	mg/kg	06.18.19 13:36	

Analytical Method: Chloride by EPA 300

Seq Number: 3092682

Parent Sample Id: 627897-010

Matrix: Soil

MS Sample Id: 627897-010 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627897-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	18.8	250	285	106	285	106	90-110	0	20	mg/kg	06.18.19 14:54	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092646

MB Sample Id: 7680153-1-BLK

Matrix: Solid

LCS Sample Id: 7680153-1-BKS

Prep Method: TX1005P

Date Prep: 06.17.19

LCSD Sample Id: 7680153-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1020	102	1030	103	70-135	1	20	mg/kg	06.17.19 15:17	
Diesel Range Organics (DRO)	<8.13	1000	988	99	1050	105	70-135	6	20	mg/kg	06.17.19 15:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		116		118		70-135	%	06.17.19 15:17
o-Terphenyl	108		94		105		70-135	%	06.17.19 15:17

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



QC Summary 627895

LT Environmental, Inc.

ADU 562

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092646

Parent Sample Id: 627897-001

Matrix: Soil

MS Sample Id: 627897-001 S

Prep Method: TX1005P

Date Prep: 06.17.19

MSD Sample Id: 627897-001 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)	12.9	1000	1200	119	1170	116	70-135	3	20	mg/kg	06.17.19 16:41	
Diesel Range Organics (DRO)	18.3	1000	1190	117	1150	113	70-135	3	20	mg/kg	06.17.19 16:41	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	147	**	151	**	70-135	%	06.17.19 16:41
o-Terphenyl	126		145	**	70-135	%	06.17.19 16:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092723

MB Sample Id: 7680199-1-BLK

Matrix: Solid

LCS Sample Id: 7680199-1-BKS

Prep Method: SW5030B

Date Prep: 06.17.19

LCSD Sample Id: 7680199-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0789	78	0.0923	92	70-130	16	35	mg/kg	06.17.19 17:27	
Toluene	<0.00202	0.101	0.0746	74	0.0849	85	70-130	13	35	mg/kg	06.17.19 17:27	
Ethylbenzene	<0.00202	0.101	0.0815	81	0.0920	92	70-130	12	35	mg/kg	06.17.19 17:27	
m,p-Xylenes	<0.00102	0.202	0.165	82	0.184	92	70-130	11	35	mg/kg	06.17.19 17:27	
o-Xylene	<0.00202	0.101	0.0799	79	0.0895	90	70-130	11	35	mg/kg	06.17.19 17:27	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		101		103		70-130	%	06.17.19 17:27
4-Bromofluorobenzene	109		100		95		70-130	%	06.17.19 17:27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3092723

Parent Sample Id: 627897-001

Matrix: Soil

MS Sample Id: 627897-001 S

Prep Method: SW5030B

Date Prep: 06.17.19

MSD Sample Id: 627897-001 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	0.0996	0.0773	78	0.0926	93	70-130	18	35	mg/kg	06.17.19 18:08	
Toluene	<0.00199	0.0996	0.0988	99	0.0858	86	70-130	14	35	mg/kg	06.17.19 18:08	
Ethylbenzene	<0.00199	0.0996	0.118	118	0.0937	94	70-130	23	35	mg/kg	06.17.19 18:08	
m,p-Xylenes	<0.00101	0.199	0.238	120	0.186	93	70-130	25	35	mg/kg	06.17.19 18:08	
o-Xylene	<0.00199	0.0996	0.114	114	0.0901	90	70-130	23	35	mg/kg	06.17.19 18:08	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		101		70-130	%	06.17.19 18:08
4-Bromofluorobenzene	116		94		70-130	%	06.17.19 18:08

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

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

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: 1027895

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

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432-704-5178	Email:	Ggreen@ltenv.com

Project Name:	ADU 562	Turn Around	
Project Number:	2RP-5332	Routine	☐
P.O. Number:		Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

Program:	UST/PT	PRP	Brownfields	RC	Superfund
State of Project:					
Reporting Level:	Level II	Level III	ST/UST	RRP	Level IV
Deliverables:	EDD	ADAPT	Other:		

Project Name:	ADU 562	Turn Around	
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P.O. Number:		Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

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Project Number:	2RP-5332	Routine	☐
P.O. Number:		Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

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Project Number:	2RP-5332	Routine	☐
P.O. Number:		Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

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Project Number:	2RP-5332	Routine	☐
P.O. Number:		Rush:	Yes
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Project Number:	2RP-5332	Routine	☐
P.O. Number:		Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

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Project Number:	2RP-5332	Routine	☐
P.O. Number:		Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

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Project Number:	2RP-5332	Routine	☐
P.O. Number:		Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

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Project Number:	2RP-5332	Routine	☐
P.O. Number:		Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

Project Name:	ADU 562	Turn Around	
Project Number:	2RP-5332	Routine	☐
P.O. Number:		Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

Project Name:	ADU 562	Turn Around	
Project Number:	2RP-5332	Routine	☐
P.O. Number:		Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

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Project Number:	2RP-5332	Routine	☐
P.O. Number:		Rush:	Yes
Sampler's Name:	Garrett Green	Due Date:	6/13/19

ORIGIN ID: CAOA (281) 240-4200
 SAMPLE CUSTODY
 SAMPLE CUSTODY
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 14JUN19
 ACTWGT: 56.00 LB
 CAD: 114488676/INET4100
 DIMS: 21x14x14 IN
 BILL SENDER

TO SAMPLE RECEIVING MIDLAND

FEDEx OFFICE PRINT & SHIP CENTER
 FEDEX OFFICE PRINT & SHIP CENTER
 200 W INTERSTATE 20

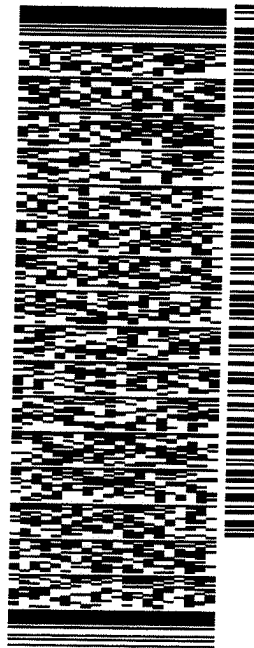
MIDLAND TX 79701

(432) 704-5440

REF:

PO:

DEPT:

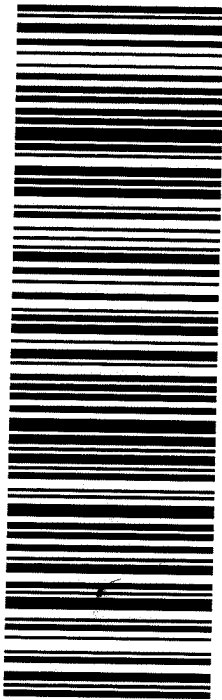


TRK# 7754 8000 4696
 0201

SATURDAY HOLD
 PRIORITY OVERNIGHT

41 MAFA

HLD
 MAFKI
 LBB
 TX-US



565J1/D210/23AD

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/17/2019 07:25:00 AM

Work Order #: 627895

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/17/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/17/2019

Analytical Report 627894

for
LT Environmental, Inc.

Project Manager: Dan Moir

ADU 562

12919114

27-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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

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

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



27-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **627894**

ADU 562

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 627894. 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. 627894 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW09	S	06-14-19 10:55	0 - 5 ft	627894-001
SW10	S	06-14-19 11:00	0 - 5 ft	627894-002
SW11	S	06-14-19 11:05	0 - 5 ft	627894-003
SW12	S	06-14-19 11:10	0 - 5 ft	627894-004
SW13	S	06-14-19 11:20	0 - 5 ft	627894-005
SW14	S	06-14-19 11:25	0 - 5 ft	627894-006
FS07	S	06-14-19 11:30	4.5 - 5 ft	627894-007
FS08	S	06-14-19 11:35	4.5 - 5 ft	627894-008
FS09	S	06-14-19 11:40	4.5 - 5 ft	627894-009
FS10	S	06-14-19 11:50	4.5 - 5 ft	627894-010



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ADU 562*

Project ID: 12919114
Work Order Number(s): 627894

Report Date: 27-JUN-19
Date Received: 06/17/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3092761 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Samples affected are: 7680234-1-BKS, 7680234-1-BLK, 627894-004, 627894-005, 627894-001.

Batch: LBA-3093702 BTEX by SW 8260C

Surrogate 1,2-Dichloroethane-D4 recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 627894-008.



Certificate of Analysis Summary 627894

LT Environmental, Inc., Arvada, CO

Project Name: ADU 562



Project Id: 12919114
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jun-17-19 07:25 am
Report Date: 27-JUN-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627894-001	627894-002	627894-003	627894-004	627894-005	627894-006
	<i>Field Id:</i>	SW09	SW10	SW11	SW12	SW13	SW14
	<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>	Jun-14-19 10:55	Jun-14-19 11:00	Jun-14-19 11:05	Jun-14-19 11:10	Jun-14-19 11:20	Jun-14-19 11:25
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>	Jun-26-19 11:10	Jun-26-19 11:10	Jun-26-19 11:10	Jun-26-19 11:10	Jun-26-19 11:10	Jun-26-19 11:10
	<i>Analyzed:</i>	Jun-26-19 17:11	Jun-26-19 17:31	Jun-26-19 11:54	Jun-26-19 12:14	Jun-26-19 17:50	Jun-26-19 18:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000990 0.000990	<0.00101 0.00101
Toluene		<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000990 0.000990	<0.00101 0.00101
Ethylbenzene		<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000990 0.000990	<0.00101 0.00101
m,p-Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201
o-Xylene		<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000990 0.000990	<0.00101 0.00101
Total Xylenes		<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000990 0.000990	<0.00101 0.00101
Total BTEX		<0.000994 0.000994	<0.000996 0.000996	<0.000998 0.000998	<0.000998 0.000998	<0.000990 0.000990	<0.00101 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 17:40	Jun-19-19 08:40	Jun-19-19 08:40	Jun-19-19 08:40	Jun-19-19 08:40	Jun-19-19 08:40
	<i>Analyzed:</i>	Jun-18-19 12:56	Jun-19-19 09:14	Jun-19-19 09:28	Jun-19-19 09:33	Jun-19-19 09:38	Jun-19-19 09:43
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		66.8 5.05	120 5.04	491 4.99	988 5.02	907 5.05	3250 25.3
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-18-19 07:00	Jun-18-19 07:00	Jun-18-19 07:00	Jun-18-19 07:00	Jun-18-19 07:00	Jun-18-19 07:00
	<i>Analyzed:</i>	Jun-18-19 12:46	Jun-18-19 14:00	Jun-18-19 14:25	Jun-18-19 14:50	Jun-18-19 15:15	Jun-18-19 15:39
	<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)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		18.3 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	23.6 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		18.3 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	23.6 15.0
Total GRO-DRO		18.3 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	23.6 15.0

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627894

LT Environmental, Inc., Arvada, CO

Project Name: ADU 562



Project Id: 12919114
Contact: Dan Moir
Project Location: Delaware Basin

Date Received in Lab: Mon Jun-17-19 07:25 am
Report Date: 27-JUN-19
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627894-007	627894-008	627894-009	627894-010		
	<i>Field Id:</i>	FS07	FS08	FS09	FS10		
	<i>Depth:</i>	4.5-5 ft	4.5-5 ft	4.5-5 ft	4.5-5 ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Jun-14-19 11:30	Jun-14-19 11:35	Jun-14-19 11:40	Jun-14-19 11:50		
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>	Jun-26-19 12:00	Jun-26-19 12:00	Jun-26-19 12:00	Jun-26-19 12:00		
	<i>Analyzed:</i>	Jun-26-19 16:06	Jun-26-19 16:30	Jun-26-19 16:54	Jun-26-19 17:18		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101		
Toluene		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101		
Ethylbenzene		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101		
m,p-Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201		
o-Xylene		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101		
Total Xylenes		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101		
Total BTEX		<0.000990 0.000990	<0.000998 0.000998	<0.000992 0.000992	<0.00101 0.00101		
Chloride by EPA 300	<i>Extracted:</i>	Jun-19-19 08:40	Jun-19-19 08:40	Jun-19-19 08:40	Jun-19-19 08:40		
	<i>Analyzed:</i>	Jun-19-19 09:57	Jun-19-19 10:02	Jun-19-19 10:07	Jun-19-19 10:12		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		1670 24.8	1420 4.96	1050 4.95	1640 25.2		
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-18-19 07:00	Jun-18-19 07:00	Jun-18-19 07:00	Jun-18-19 07:00		
	<i>Analyzed:</i>	Jun-18-19 16:04	Jun-18-19 16:30	Jun-18-19 16:55	Jun-18-19 17:20		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		18.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
Total TPH		18.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		
Total GRO-DRO		18.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0		

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

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW09**
Lab Sample Id: 627894-001

Matrix: Soil
Date Collected: 06.14.19 10.55

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3092652

Date Prep: 06.17.19 17.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	66.8	5.05	mg/kg	06.18.19 12.56		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092761

Date Prep: 06.18.19 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.18.19 12.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	18.3	15.0	mg/kg	06.18.19 12.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.18.19 12.46	U	1
Total TPH	PHC635	18.3	15.0	mg/kg	06.18.19 12.46		1
Total GRO-DRO	PHC628	18.3	15.0	mg/kg	06.18.19 12.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	137	%	70-135	06.18.19 12.46	**
o-Terphenyl	84-15-1	121	%	70-135	06.18.19 12.46	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW09**
Lab Sample Id: 627894-001

Matrix: Soil
Date Collected: 06.14.19 10.55

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093590

Prep Method: SW5035A

% Moisture:

Date Prep: 06.26.19 11.10

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	06.26.19 17.11	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	06.26.19 17.11	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	06.26.19 17.11	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	06.26.19 17.11	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	06.26.19 17.11	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	06.26.19 17.11	U	1
Total BTEX		<0.000994	0.000994	mg/kg	06.26.19 17.11	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	97		%	74-126	06.26.19 17.11	
1,2-Dichloroethane-D4	17060-07-0	110		%	80-120	06.26.19 17.11	
Toluene-D8	2037-26-5	104		%	73-132	06.26.19 17.11	
4-Bromofluorobenzene	460-00-4	87		%	58-152	06.26.19 17.11	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW10**
Lab Sample Id: 627894-002

Matrix: Soil
Date Collected: 06.14.19 11.00

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3092776

Date Prep: 06.19.19 08.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	120	5.04	mg/kg	06.19.19 09.14		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092761

Date Prep: 06.18.19 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.18.19 14.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.18.19 14.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.18.19 14.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.18.19 14.00	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.18.19 14.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	06.18.19 14.00	
o-Terphenyl	84-15-1	114	%	70-135	06.18.19 14.00	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW10**
Lab Sample Id: 627894-002

Matrix: Soil
Date Collected: 06.14.19 11.00

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093590

Prep Method: SW5035A

% Moisture:

Date Prep: 06.26.19 11.10

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	06.26.19 17.31	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	06.26.19 17.31	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	06.26.19 17.31	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	06.26.19 17.31	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	06.26.19 17.31	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	06.26.19 17.31	U	1
Total BTEX		<0.000996	0.000996	mg/kg	06.26.19 17.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	98	%	74-126	06.26.19 17.31	
1,2-Dichloroethane-D4	17060-07-0	110	%	80-120	06.26.19 17.31	
Toluene-D8	2037-26-5	101	%	73-132	06.26.19 17.31	
4-Bromofluorobenzene	460-00-4	90	%	58-152	06.26.19 17.31	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW11**
Lab Sample Id: 627894-003

Matrix: Soil
Date Collected: 06.14.19 11.05

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3092776

Date Prep: 06.19.19 08.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	491	4.99	mg/kg	06.19.19 09.28		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092761

Date Prep: 06.18.19 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.18.19 14.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.18.19 14.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.18.19 14.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.18.19 14.25	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.18.19 14.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	135	%	70-135	06.18.19 14.25	
o-Terphenyl	84-15-1	120	%	70-135	06.18.19 14.25	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW11**
Lab Sample Id: 627894-003

Matrix: Soil
Date Collected: 06.14.19 11.05

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093590

Prep Method: SW5035A

% Moisture:

Date Prep: 06.26.19 11.10

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	06.26.19 11.54	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	06.26.19 11.54	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	06.26.19 11.54	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	06.26.19 11.54	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	06.26.19 11.54	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	06.26.19 11.54	U	1
Total BTEX		<0.000998	0.000998	mg/kg	06.26.19 11.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	101	%	74-126	06.26.19 11.54	
1,2-Dichloroethane-D4	17060-07-0	109	%	80-120	06.26.19 11.54	
Toluene-D8	2037-26-5	101	%	73-132	06.26.19 11.54	
4-Bromofluorobenzene	460-00-4	91	%	58-152	06.26.19 11.54	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW12**
Lab Sample Id: 627894-004

Matrix: Soil
Date Collected: 06.14.19 11.10

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3092776

Date Prep: 06.19.19 08.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	988	5.02	mg/kg	06.19.19 09.33		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092761

Date Prep: 06.18.19 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.18.19 14.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.18.19 14.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.18.19 14.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.18.19 14.50	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.18.19 14.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	138	%	70-135	06.18.19 14.50	**
o-Terphenyl	84-15-1	128	%	70-135	06.18.19 14.50	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW12**
Lab Sample Id: 627894-004

Matrix: Soil
Date Collected: 06.14.19 11.10

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093590

Prep Method: SW5035A

% Moisture:

Date Prep: 06.26.19 11.10

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	06.26.19 12.14	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	06.26.19 12.14	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	06.26.19 12.14	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	06.26.19 12.14	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	06.26.19 12.14	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	06.26.19 12.14	U	1
Total BTEX		<0.000998	0.000998	mg/kg	06.26.19 12.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	99	%	74-126	06.26.19 12.14	
1,2-Dichloroethane-D4	17060-07-0	106	%	80-120	06.26.19 12.14	
Toluene-D8	2037-26-5	97	%	73-132	06.26.19 12.14	
4-Bromofluorobenzene	460-00-4	87	%	58-152	06.26.19 12.14	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW13**
Lab Sample Id: 627894-005

Matrix: Soil
Date Collected: 06.14.19 11.20

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3092776

Date Prep: 06.19.19 08.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	907	5.05	mg/kg	06.19.19 09.38		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092761

Date Prep: 06.18.19 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.18.19 15.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.18.19 15.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.18.19 15.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.18.19 15.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.18.19 15.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	136	%	70-135	06.18.19 15.15	**
o-Terphenyl	84-15-1	116	%	70-135	06.18.19 15.15	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW13**
Lab Sample Id: 627894-005

Matrix: Soil
Date Collected: 06.14.19 11.20

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093590

Prep Method: SW5035A

% Moisture:

Date Prep: 06.26.19 11.10

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	06.26.19 17.50	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	06.26.19 17.50	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	06.26.19 17.50	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	06.26.19 17.50	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	06.26.19 17.50	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	06.26.19 17.50	U	1
Total BTEX		<0.000990	0.000990	mg/kg	06.26.19 17.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	97	%	74-126	06.26.19 17.50	
1,2-Dichloroethane-D4	17060-07-0	103	%	80-120	06.26.19 17.50	
Toluene-D8	2037-26-5	105	%	73-132	06.26.19 17.50	
4-Bromofluorobenzene	460-00-4	87	%	58-152	06.26.19 17.50	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW14**
Lab Sample Id: 627894-006

Matrix: Soil
Date Collected: 06.14.19 11.25

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3092776

Date Prep: 06.19.19 08.40

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3250	25.3	mg/kg	06.19.19 09.43		5

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3092761

Date Prep: 06.18.19 07.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.18.19 15.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	23.6	15.0	mg/kg	06.18.19 15.39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.18.19 15.39	U	1
Total TPH	PHC635	23.6	15.0	mg/kg	06.18.19 15.39		1
Total GRO-DRO	PHC628	23.6	15.0	mg/kg	06.18.19 15.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	134	%	70-135	06.18.19 15.39	
o-Terphenyl	84-15-1	126	%	70-135	06.18.19 15.39	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **SW14**
Lab Sample Id: 627894-006

Matrix: Soil
Date Collected: 06.14.19 11.25

Date Received: 06.17.19 07.25
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: HOP

Analyst: HOP

Seq Number: 3093590

Prep Method: SW5035A

% Moisture:

Date Prep: 06.26.19 11.10

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	06.26.19 18.10	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	06.26.19 18.10	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	06.26.19 18.10	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	06.26.19 18.10	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	06.26.19 18.10	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	06.26.19 18.10	U	1
Total BTEX		<0.00101	0.00101	mg/kg	06.26.19 18.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	103	%	74-126	06.26.19 18.10	
1,2-Dichloroethane-D4	17060-07-0	102	%	80-120	06.26.19 18.10	
Toluene-D8	2037-26-5	105	%	73-132	06.26.19 18.10	
4-Bromofluorobenzene	460-00-4	86	%	58-152	06.26.19 18.10	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS07**
Lab Sample Id: 627894-007

Matrix: Soil
Date Collected: 06.14.19 11.30

Date Received: 06.17.19 07.25
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3092776

Date Prep: 06.19.19 08.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1670	24.8	mg/kg	06.19.19 09.57		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092761

Date Prep: 06.18.19 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.18.19 16.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	18.0	15.0	mg/kg	06.18.19 16.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.18.19 16.04	U	1
Total TPH	PHC635	18.0	15.0	mg/kg	06.18.19 16.04		1
Total GRO-DRO	PHC628	18.0	15.0	mg/kg	06.18.19 16.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	06.18.19 16.04	
o-Terphenyl	84-15-1	113	%	70-135	06.18.19 16.04	



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LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS07**
Lab Sample Id: 627894-007

Matrix: Soil
Date Collected: 06.14.19 11.30

Date Received: 06.17.19 07.25
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: SAD

Analyst: SAD

Seq Number: 3093702

Prep Method: SW5035A

% Moisture:

Date Prep: 06.26.19 12.00

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000990	0.000990	mg/kg	06.26.19 16.06	U	1
Toluene	108-88-3	<0.000990	0.000990	mg/kg	06.26.19 16.06	U	1
Ethylbenzene	100-41-4	<0.000990	0.000990	mg/kg	06.26.19 16.06	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	06.26.19 16.06	U	1
o-Xylene	95-47-6	<0.000990	0.000990	mg/kg	06.26.19 16.06	U	1
Total Xylenes	1330-20-7	<0.000990	0.000990	mg/kg	06.26.19 16.06	U	1
Total BTEX		<0.000990	0.000990	mg/kg	06.26.19 16.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	93	%	73-132	06.26.19 16.06		
1,2-Dichloroethane-D4	17060-07-0	102	%	73-124	06.26.19 16.06		
Toluene-D8	2037-26-5	98	%	69-124	06.26.19 16.06		
4-Bromofluorobenzene	460-00-4	93	%	58-152	06.26.19 16.06		



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LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS08**
Lab Sample Id: 627894-008

Matrix: Soil
Date Collected: 06.14.19 11.35

Date Received: 06.17.19 07.25
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300
Tech: SPC
Analyst: SPC
Seq Number: 3092776

Prep Method: E300P
% Moisture:
Date Prep: 06.19.19 08.40
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1420	4.96	mg/kg	06.19.19 10.02		1

Analytical Method: TPH by SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3092761

Prep Method: TX1005P
% Moisture:
Date Prep: 06.18.19 07.00
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.18.19 16.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.18.19 16.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.18.19 16.30	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.18.19 16.30	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.18.19 16.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	06.18.19 16.30	
o-Terphenyl	84-15-1	98	%	70-135	06.18.19 16.30	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS08**
Lab Sample Id: 627894-008

Matrix: Soil
Date Collected: 06.14.19 11.35

Date Received: 06.17.19 07.25
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: SAD

Analyst: SAD

Seq Number: 3093702

Date Prep: 06.26.19 12.00

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	06.26.19 16.30	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	06.26.19 16.30	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	06.26.19 16.30	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	06.26.19 16.30	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	06.26.19 16.30	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	06.26.19 16.30	U	1
Total BTEX		<0.000998	0.000998	mg/kg	06.26.19 16.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	105	%	73-132	06.26.19 16.30		
1,2-Dichloroethane-D4	17060-07-0	130	%	73-124	06.26.19 16.30	**	
Toluene-D8	2037-26-5	93	%	69-124	06.26.19 16.30		
4-Bromofluorobenzene	460-00-4	90	%	58-152	06.26.19 16.30		



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS09**
Lab Sample Id: 627894-009

Matrix: Soil
Date Collected: 06.14.19 11.40

Date Received: 06.17.19 07.25
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3092776

Date Prep: 06.19.19 08.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1050	4.95	mg/kg	06.19.19 10.07		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092761

Date Prep: 06.18.19 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.18.19 16.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.18.19 16.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.18.19 16.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.18.19 16.55	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.18.19 16.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	06.18.19 16.55	
o-Terphenyl	84-15-1	108	%	70-135	06.18.19 16.55	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS09**
Lab Sample Id: 627894-009

Matrix: Soil
Date Collected: 06.14.19 11.40

Date Received: 06.17.19 07.25
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: SAD

Analyst: SAD

Seq Number: 3093702

Date Prep: 06.26.19 12.00

Prep Method: SW5035A

% Moisture:

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000992	0.000992	mg/kg	06.26.19 16.54	U	1
Toluene	108-88-3	<0.000992	0.000992	mg/kg	06.26.19 16.54	U	1
Ethylbenzene	100-41-4	<0.000992	0.000992	mg/kg	06.26.19 16.54	U	1
m,p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	06.26.19 16.54	U	1
o-Xylene	95-47-6	<0.000992	0.000992	mg/kg	06.26.19 16.54	U	1
Total Xylenes	1330-20-7	<0.000992	0.000992	mg/kg	06.26.19 16.54	U	1
Total BTEX		<0.000992	0.000992	mg/kg	06.26.19 16.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	99	%	73-132	06.26.19 16.54	
1,2-Dichloroethane-D4	17060-07-0	110	%	73-124	06.26.19 16.54	
Toluene-D8	2037-26-5	95	%	69-124	06.26.19 16.54	
4-Bromofluorobenzene	460-00-4	94	%	58-152	06.26.19 16.54	



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LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS10**
Lab Sample Id: 627894-010

Matrix: Soil
Date Collected: 06.14.19 11.50

Date Received: 06.17.19 07.25
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: SPC

Analyst: SPC

Seq Number: 3092776

Date Prep: 06.19.19 08.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1640	25.2	mg/kg	06.19.19 10.12		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3092761

Date Prep: 06.18.19 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.18.19 17.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.18.19 17.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.18.19 17.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.18.19 17.20	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.18.19 17.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	06.18.19 17.20	
o-Terphenyl	84-15-1	103	%	70-135	06.18.19 17.20	



Certificate of Analytical Results 627894



LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **FS10**
Lab Sample Id: 627894-010

Matrix: Soil
Date Collected: 06.14.19 11.50

Date Received: 06.17.19 07.25
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by SW 8260C

Tech: SAD

Analyst: SAD

Seq Number: 3093702

Prep Method: SW5035A

% Moisture:

Date Prep: 06.26.19 12.00

Basis: Wet Weight

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	06.26.19 17.18	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	06.26.19 17.18	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	06.26.19 17.18	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	06.26.19 17.18	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	06.26.19 17.18	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	06.26.19 17.18	U	1
Total BTEX		<0.00101	0.00101	mg/kg	06.26.19 17.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	106	%	73-132	06.26.19 17.18	
1,2-Dichloroethane-D4	17060-07-0	106	%	73-124	06.26.19 17.18	
Toluene-D8	2037-26-5	97	%	69-124	06.26.19 17.18	
4-Bromofluorobenzene	460-00-4	96	%	58-152	06.26.19 17.18	

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 627894

LT Environmental, Inc. ADU 562

Analytical Method: Chloride by EPA 300

Seq Number: 3092652

MB Sample Id: 7680130-1-BLK

Matrix: Solid

LCS Sample Id: 7680130-1-BKS

Prep Method: E300P

Date Prep: 06.17.19

LCSD Sample Id: 7680130-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	252	101	253	101	90-110	0	20	mg/kg	06.18.19 10:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3092776

MB Sample Id: 7680201-1-BLK

Matrix: Solid

LCS Sample Id: 7680201-1-BKS

Prep Method: E300P

Date Prep: 06.19.19

LCSD Sample Id: 7680201-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	246	98	246	98	90-110	0	20	mg/kg	06.19.19 09:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3092652

Parent Sample Id: 627724-135

Matrix: Soil

MS Sample Id: 627724-135 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-135 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.03	252	245	97	247	98	90-110	1	20	mg/kg	06.18.19 10:30	

Analytical Method: Chloride by EPA 300

Seq Number: 3092652

Parent Sample Id: 627896-006

Matrix: Soil

MS Sample Id: 627896-006 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627896-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	30.5	248	274	98	273	98	90-110	0	20	mg/kg	06.18.19 11:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3092776

Parent Sample Id: 627894-002

Matrix: Soil

MS Sample Id: 627894-002 S

Prep Method: E300P

Date Prep: 06.19.19

MSD Sample Id: 627894-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	120	252	362	96	362	96	90-110	0	20	mg/kg	06.19.19 09:18	

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

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

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

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



QC Summary 627894

LT Environmental, Inc. ADU 562

Analytical Method: Chloride by EPA 300

Seq Number: 3092776

Parent Sample Id: 627896-002

Matrix: Soil

MS Sample Id: 627896-002 S

Prep Method: E300P

Date Prep: 06.19.19

MSD Sample Id: 627896-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	65.2	251	311	98	311	98	90-110	0	20	mg/kg	06.19.19 10:26	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092761

MB Sample Id: 7680234-1-BLK

Matrix: Solid

LCS Sample Id: 7680234-1-BKS

Prep Method: TX1005P

Date Prep: 06.18.19

LCSD Sample Id: 7680234-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1190	119	1110	111	70-135	7	20	mg/kg	06.18.19 11:31	
Diesel Range Organics (DRO)	<8.13	1000	1170	117	1090	109	70-135	7	20	mg/kg	06.18.19 11:31	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	145	**	140	**	128		70-135	%	06.18.19 11:31
o-Terphenyl	117		123		104		70-135	%	06.18.19 11:31

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092761

Parent Sample Id: 627894-001

Matrix: Soil

MS Sample Id: 627894-001 S

Prep Method: TX1005P

Date Prep: 06.18.19

MSD Sample Id: 627894-001 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)	11.0	1000	1130	112	1150	114	70-135	2	20	mg/kg	06.18.19 13:10	
Diesel Range Organics (DRO)	18.3	1000	1190	117	1140	112	70-135	4	20	mg/kg	06.18.19 13:10	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		127		70-135	%	06.18.19 13:10
o-Terphenyl	120		125		70-135	%	06.18.19 13:10

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

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

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.
ADU 562

Analytical Method: BTEX by SW 8260C

Seq Number: 3093590

MB Sample Id: 7680777-1-BLK

Matrix: Solid

LCS Sample Id: 7680777-1-BKS

Prep Method: SW5035A

Date Prep: 06.26.19

LCSD Sample Id: 7680777-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0500	0.0562	112	0.0515	103	62-132	9	25	mg/kg	06.26.19 09:11	
Toluene	<0.00100	0.0500	0.0585	117	0.0550	110	66-124	6	25	mg/kg	06.26.19 09:11	
Ethylbenzene	<0.00100	0.0500	0.0596	119	0.0542	108	71-134	9	25	mg/kg	06.26.19 09:11	
m,p-Xylenes	<0.00200	0.100	0.120	120	0.110	110	69-128	9	25	mg/kg	06.26.19 09:11	
o-Xylene	<0.00100	0.0500	0.0587	117	0.0527	105	72-131	11	25	mg/kg	06.26.19 09:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	95		98		97		74-126	%	06.26.19 09:11
1,2-Dichloroethane-D4	100		104		98		80-120	%	06.26.19 09:11
Toluene-D8	97		98		94		73-132	%	06.26.19 09:11
4-Bromofluorobenzene	86		111		106		58-152	%	06.26.19 09:11

Analytical Method: BTEX by SW 8260C

Seq Number: 3093702

MB Sample Id: 7680828-1-BLK

Matrix: Solid

LCS Sample Id: 7680828-1-BKS

Prep Method: SW5035A

Date Prep: 06.26.19

LCSD Sample Id: 7680828-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0500	0.0538	108	0.0428	86	62-132	23	25	mg/kg	06.26.19 10:50	
Toluene	<0.00100	0.0500	0.0512	102	0.0423	85	66-124	19	25	mg/kg	06.26.19 10:50	
Ethylbenzene	<0.00100	0.0500	0.0526	105	0.0415	83	71-134	24	25	mg/kg	06.26.19 10:50	
m,p-Xylenes	<0.000362	0.100	0.106	106	0.0847	85	69-128	22	25	mg/kg	06.26.19 10:50	
o-Xylene	<0.00100	0.0500	0.0520	104	0.0435	87	72-131	18	25	mg/kg	06.26.19 10:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	89		92		94		73-132	%	06.26.19 10:50
1,2-Dichloroethane-D4	100		97		97		73-124	%	06.26.19 10:50
Toluene-D8	95		97		98		69-124	%	06.26.19 10:50
4-Bromofluorobenzene	91		92		94		58-152	%	06.26.19 10:50

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



QC Summary 627894

LT Environmental, Inc. ADU 562

Analytical Method: BTEX by SW 8260C

Seq Number: 3093590

Parent Sample Id: 627894-003

Matrix: Soil

MS Sample Id: 627894-003 S

Prep Method: SW5035A

Date Prep: 06.26.19

MSD Sample Id: 627894-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0501	0.0417	83	0.0383	77	62-132	9	25	mg/kg	06.26.19 10:15	
Toluene	<0.00100	0.0501	0.0426	85	0.0394	79	66-124	8	25	mg/kg	06.26.19 10:15	
Ethylbenzene	<0.00100	0.0501	0.0446	89	0.0393	79	71-134	13	25	mg/kg	06.26.19 10:15	
m,p-Xylenes	<0.00200	0.100	0.0888	89	0.0785	79	69-128	12	25	mg/kg	06.26.19 10:15	
o-Xylene	<0.00100	0.0501	0.0413	82	0.0374	75	72-131	10	25	mg/kg	06.26.19 10:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	101		98		74-126	%	06.26.19 10:15
1,2-Dichloroethane-D4	101		103		80-120	%	06.26.19 10:15
Toluene-D8	94		95		73-132	%	06.26.19 10:15
4-Bromofluorobenzene	102		100		58-152	%	06.26.19 10:15

Analytical Method: BTEX by SW 8260C

Seq Number: 3093702

Parent Sample Id: 627901-001

Matrix: Soil

MS Sample Id: 627901-001 S

Prep Method: SW5035A

Date Prep: 06.26.19

MSD Sample Id: 627901-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0501	0.0452	90	0.0405	81	62-132	11	25	mg/kg	06.26.19 11:39	
Toluene	<0.00100	0.0501	0.0416	83	0.0387	78	66-124	7	25	mg/kg	06.26.19 11:39	
Ethylbenzene	0.000100	0.0501	0.0435	87	0.0378	76	71-134	14	25	mg/kg	06.26.19 11:39	
m,p-Xylenes	<0.000362	0.100	0.0874	87	0.0756	76	69-128	14	25	mg/kg	06.26.19 11:39	
o-Xylene	<0.00100	0.0501	0.0435	87	0.0379	76	72-131	14	25	mg/kg	06.26.19 11:39	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	100		92		73-132	%	06.26.19 11:39
1,2-Dichloroethane-D4	96		96		73-124	%	06.26.19 11:39
Toluene-D8	97		99		69-124	%	06.26.19 11:39
4-Bromofluorobenzene	95		93		58-152	%	06.26.19 11:39

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

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

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

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



Chain of Custody

Work Order No: 1071894

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) 355-0800 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

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Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	Green@ltenv.com

Project Name:	ADD 562	Turn Around	☒
Project Number:		Routine	☒
P.O. Number:	2RR5332	Rush:	
Sampler's Name:	Garrett Green	Due Date:	

Program: UST/PST ☐ 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:	ADD 562	Turn Around	☒
Project Number:		Routine	☒
P.O. Number:	2RR5332	Rush:	
Sampler's Name:	Garrett Green	Due Date:	

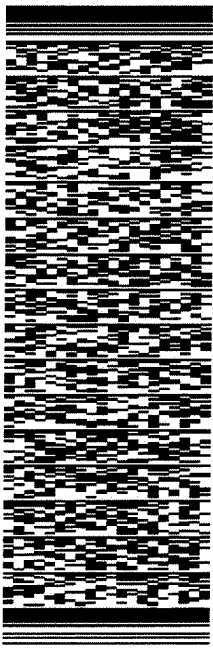
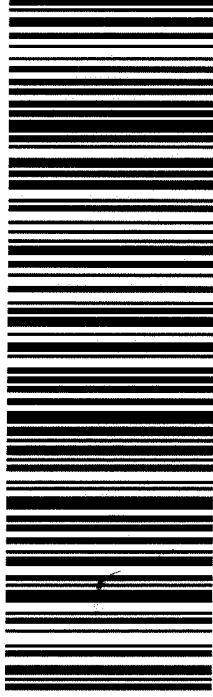
Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
Temperature (°C):	4.2/4.0	Thermometer ID	PS-0.2
Received In tact:	Yes ☒ No ☐	Correction Factor:	
Cooler Custody Seals:	Yes ☐ No ☒	Total Containers:	
Sample Custody Seals:	Yes ☐ No ☒		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
SW09	S	6/14/19	1055	0.5'	1	X	X	X		
SW10			1106		1	X	X	X		
SW11			1105		1	X	X	X		
SW12			1110		1	X	X	X		
SW13			1120		1	X	X	X		
SW14			1125		1	X	X	X		
FS07			1130	4.5'-5'	1	X	X	X		
FS08			1135		1	X	X	X		
FS09			1145		1	X	X	X		
FS10			1150		1	X	X	X		

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 A 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

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 \$3 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
<u>[Signature]</u>	<u>[Signature]</u>	6/14/19 13:30	<u>[Signature]</u>	<u>[Signature]</u>	6/17/19 07:25

ORIGIN ID: CACOA (281) 240-4200 SAMPLE CUSTODY SAMPLE CUSTODY 1089 N CANAL ST CARLSBAD, NM 88220 UNITED STATES US		SHIP DATE: 14JUN19 ACTWGT: 56.00 LB CAD: 114488676/NET4100 DIMS: 21x14x14 IN BILL SENDER
TO SAMPLE RECEIVING MIDLAND FEDEx OFFICE PRINT & SHIP CENTER FEDEx OFFICE PRINT & SHIP CENTER 200 W INTERSTATE 20 MIDLAND TX 79701 REF: (432) 704-5440 INV: PO: DEPT:		
 		
TRK# 7754 8000 4696 0201	SATURDAY HOLD PRIORITY OVERNIGHT HLD MAFKI LBB TX-US	41 MAFA 

565J1/D210/23AD

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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Inter-Office Shipment

IOS Number : **42131**

Date/Time: 06.24.2019 14:31 Created by: Jessica Kramer
 Lab# From: **Midland** Delivery Priority:
 Lab# To: **Houston** Air Bill No.: 775553778262

Please send report to: Jessica Kramer
 Address: 1211 W. Florida Ave
 E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
627894-001	S	SW09	06.14.2019 10:55	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.28.2019 10:55	JKR	BZ BZME EBZ XYLENE	
627894-002	S	SW10	06.14.2019 11:00	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.28.2019 11:00	JKR	BZ BZME EBZ XYLENE	
627894-003	S	SW11	06.14.2019 11:05	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.28.2019 11:05	JKR	BZ BZME EBZ XYLENE	
627894-004	S	SW12	06.14.2019 11:10	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.28.2019 11:10	JKR	BZ BZME EBZ XYLENE	
627894-005	S	SW13	06.14.2019 11:20	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.28.2019 11:20	JKR	BZ BZME EBZ XYLENE	
627894-006	S	SW14	06.14.2019 11:25	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.28.2019 11:25	JKR	BZ BZME EBZ XYLENE	
627894-007	S	FS07	06.14.2019 11:30	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.28.2019 11:30	JKR	BZ BZME EBZ XYLENE	
627894-008	S	FS08	06.14.2019 11:35	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.28.2019 11:35	JKR	BZ BZME EBZ XYLENE	
627894-009	S	FS09	06.14.2019 11:40	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.28.2019 11:40	JKR	BZ BZME EBZ XYLENE	
627894-010	S	FS10	06.14.2019 11:50	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.28.2019 11:50	JKR	BZ BZME EBZ XYLENE	

Inter Office Shipment or Sample Comments:

SAMPLES BREAK HOLD 06/28

Relinquished By: Jessica Kramer
 Jessica Kramer

Date Relinquished: 06.24.2019

Received By: Ashly Kowalski
 Ashly Kowalski

Date Received: 06.25.2019 09:40

Cooler Temperature: 0.6



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 42131

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Jessica Kramer

Date Sent: 06.24.2019 02.31 PM

Received By: Ashly Kowalski

Date Received: 06.25.2019 09.40 AM

Sample Receipt Checklist

Comments

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

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

NonConformance:

SAMPLES BREAK HOLD 06/28

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Ashly Kowalski

Date: 06.25.2019



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/17/2019 07:25:00 AM

Work Order #: 627894

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/17/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/17/2019

Analytical Report 628256

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

ADU 562

30-JUN-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Atlanta (LELAP Lab ID #04176)

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



30-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **628256**

ADU 562

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628256. 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. 628256 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'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH02	S	06-17-19 11:35	1 ft	628256-001
BH02A	S	06-17-19 11:45	3 ft	628256-002
BH03	S	06-17-19 11:50	1 ft	628256-003
BH03A	S	06-17-19 12:00	3 ft	628256-004
BH04	S	06-17-19 13:40	1 ft	628256-005
BH04A	S	06-17-19 13:55	4 ft	628256-006
PH04	S	06-17-19 13:00	1 ft	628256-007
PH04A	S	06-17-19 13:15	4 ft	628256-008
PH05	S	06-17-19 13:20	1 ft	628256-009
PH05A	S	06-17-19 13:35	4 ft	628256-010



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ADU 562*

Project ID:
Work Order Number(s): 628256

Report Date: 30-JUN-19
Date Received: 06/19/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093938 BTEX by EPA 8021B

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



Certificate of Analysis Summary 628256

LT Environmental, Inc., Arvada, CO

Project Name: ADU 562

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 08:00 am

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	628256-001	628256-002	628256-003	628256-004	628256-005	628256-006
	Field Id:	BH02	BH02A	BH03	BH03A	BH04	BH04A
	Depth:	1- ft	3- ft	1- ft	3- ft	1- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-17-19 11:35	Jun-17-19 11:45	Jun-17-19 11:50	Jun-17-19 12:00	Jun-17-19 13:40	Jun-17-19 13:55
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Jun-28-19 16:59	Jun-28-19 16:59	Jun-28-19 16:59	Jun-28-19 16:59	Jun-28-19 16:59	Jun-28-19 16:59
	Analyzed:	Jun-29-19 10:22	Jun-29-19 11:28	Jun-29-19 11:50	Jun-29-19 12:12	Jun-29-19 12:34	Jun-29-19 01:30
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
m,p-Xylenes		<0.00402 0.00402	<0.00401 0.00401	<0.00399 0.00399	<0.00400 0.00400	<0.00398 0.00398	<0.00397 0.00397
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Jun-22-19 16:30	Jun-22-19 16:30	Jun-22-19 16:30	Jun-22-19 16:30	Jun-22-19 16:30	Jun-22-19 16:30
	Analyzed:	Jun-24-19 16:51	Jun-24-19 16:57	Jun-24-19 17:02	Jun-24-19 17:19	Jun-24-19 17:24	Jun-24-19 17:41
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		74.4 4.97	194 5.02	<4.95 4.95	16.7 5.04	<4.98 4.98	33.3 5.00
TPH By SW8015 Mod SUB: T104704400-18-16	Extracted:	Jun-23-19 09:00	Jun-23-19 09:00	Jun-23-19 09:00	Jun-23-19 09:00	Jun-23-19 09:00	Jun-23-19 09:00
	Analyzed:	Jun-23-19 13:54	Jun-23-19 15:09	Jun-23-19 15:34	Jun-23-19 15:59	Jun-23-19 16:24	Jun-23-19 16:49
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0

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

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 628256

LT Environmental, Inc., Arvada, CO

Project Name: ADU 562

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 08:00 am

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	628256-007	628256-008	628256-009	628256-010		
	Field Id:	PH04	PH04A	PH05	PH05A		
	Depth:	1- ft	4- ft	1- ft	4- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Jun-17-19 13:00	Jun-17-19 13:15	Jun-17-19 13:20	Jun-17-19 13:35		
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Jun-28-19 16:59	Jun-28-19 16:59	Jun-28-19 16:59	Jun-28-19 16:59		
	Analyzed:	Jun-29-19 01:53	Jun-29-19 03:31	Jun-29-19 03:53	Jun-29-19 04:16		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
	Benzene	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
	Toluene	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00400 0.00400	<0.00402 0.00402	<0.00401 0.00401	<0.00399 0.00399		
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Jun-22-19 16:30	Jun-22-19 16:30	Jun-22-19 16:30	Jun-22-19 16:30		
	Analyzed:	Jun-24-19 17:46	Jun-24-19 17:52	Jun-24-19 17:57	Jun-24-19 18:03		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
	Chloride	5.86 5.02	92.1 4.99	<4.95 4.95	59.9 4.95		
TPH By SW8015 Mod SUB: T104704400-18-16	Extracted:	Jun-23-19 09:00	Jun-23-19 09:00	Jun-23-19 09:00	Jun-23-19 09:00		
	Analyzed:	Jun-23-19 17:14	Jun-23-19 17:39	Jun-23-19 18:04	Jun-23-19 18:29		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
	Diesel Range Organics (DRO)	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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

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Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH02**
Lab Sample Id: 628256-001

Matrix: Soil
Date Collected: 06.17.19 11.35

Date Received: 06.19.19 08.00
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.4	4.97	mg/kg	06.24.19 16.51		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 13.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 13.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 13.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 13.54	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 13.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	06.23.19 13.54	
o-Terphenyl	84-15-1	94	%	70-135	06.23.19 13.54	



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH02**
Lab Sample Id: 628256-001

Matrix: Soil
Date Collected: 06.17.19 11.35

Date Received: 06.19.19 08.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093938

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.59

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.29.19 10.22	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.29.19 10.22	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.29.19 10.22	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.29.19 10.22	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.29.19 10.22	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.29.19 10.22	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.29.19 10.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	93	%	70-130	06.29.19 10.22		
4-Bromofluorobenzene	460-00-4	105	%	70-130	06.29.19 10.22		



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH02A**
Lab Sample Id: 628256-002

Matrix: Soil
Date Collected: 06.17.19 11.45

Date Received: 06.19.19 08.00
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	194	5.02	mg/kg	06.24.19 16.57		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 15.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 15.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 15.09	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 15.09	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 15.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	06.23.19 15.09	
o-Terphenyl	84-15-1	91	%	70-135	06.23.19 15.09	



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH02A**
Lab Sample Id: 628256-002

Matrix: Soil
Date Collected: 06.17.19 11.45

Date Received: 06.19.19 08.00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093938

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.59

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 11.28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 11.28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 11.28	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.29.19 11.28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 11.28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 11.28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 11.28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	06.29.19 11.28		
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.29.19 11.28		



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH03**
Lab Sample Id: 628256-003

Matrix: Soil
Date Collected: 06.17.19 11.50

Date Received: 06.19.19 08.00
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	06.24.19 17.02	U	1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 15.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 15.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 15.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 15.34	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 15.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	06.23.19 15.34	
o-Terphenyl	84-15-1	99	%	70-135	06.23.19 15.34	



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH03**
Lab Sample Id: 628256-003

Matrix: Soil
Date Collected: 06.17.19 11.50

Date Received: 06.19.19 08.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093938

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.59

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 11.50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 11.50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 11.50	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.29.19 11.50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 11.50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 11.50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 11.50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	06.29.19 11.50		
1,4-Difluorobenzene	540-36-3	98	%	70-130	06.29.19 11.50		



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH03A**
Lab Sample Id: 628256-004

Matrix: Soil
Date Collected: 06.17.19 12.00

Date Received: 06.19.19 08.00
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.7	5.04	mg/kg	06.24.19 17.19		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 15.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 15.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 15.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 15.59	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 15.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	06.23.19 15.59	
o-Terphenyl	84-15-1	101	%	70-135	06.23.19 15.59	



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH03A**
Lab Sample Id: 628256-004

Matrix: Soil
Date Collected: 06.17.19 12.00

Date Received: 06.19.19 08.00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093938

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.59

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 12.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 12.12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 12.12	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.29.19 12.12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 12.12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 12.12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 12.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.29.19 12.12		
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.29.19 12.12		



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH04**
Lab Sample Id: 628256-005

Matrix: Soil
Date Collected: 06.17.19 13.40

Date Received: 06.19.19 08.00
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	06.24.19 17.24	U	1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.23.19 16.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.23.19 16.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.23.19 16.24	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.23.19 16.24	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.23.19 16.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	06.23.19 16.24	
o-Terphenyl	84-15-1	101	%	70-135	06.23.19 16.24	



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH04**
Lab Sample Id: 628256-005

Matrix: Soil
Date Collected: 06.17.19 13.40

Date Received: 06.19.19 08.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093938

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.59

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.29.19 12.34	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.29.19 12.34	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.29.19 12.34	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.29.19 12.34	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.29.19 12.34	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.29.19 12.34	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.29.19 12.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.29.19 12.34		
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.29.19 12.34		



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH04A**
Lab Sample Id: 628256-006

Matrix: Soil
Date Collected: 06.17.19 13.55

Date Received: 06.19.19 08.00
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.3	5.00	mg/kg	06.24.19 17.41		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 16.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 16.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 16.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 16.49	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 16.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	06.23.19 16.49	
o-Terphenyl	84-15-1	82	%	70-135	06.23.19 16.49	



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH04A**
Lab Sample Id: 628256-006

Matrix: Soil
Date Collected: 06.17.19 13.55

Date Received: 06.19.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093938

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.59

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.29.19 01.30	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.29.19 01.30	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.29.19 01.30	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.29.19 01.30	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.29.19 01.30	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.29.19 01.30	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.29.19 01.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.29.19 01.30		
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.29.19 01.30		



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH04**
Lab Sample Id: 628256-007

Matrix: Soil
Date Collected: 06.17.19 13.00

Date Received: 06.19.19 08.00
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.86	5.02	mg/kg	06.24.19 17.46		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 17.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 17.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 17.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 17.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 17.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-135	06.23.19 17.14	
o-Terphenyl	84-15-1	80	%	70-135	06.23.19 17.14	



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH04**
Lab Sample Id: 628256-007

Matrix: Soil
Date Collected: 06.17.19 13.00

Date Received: 06.19.19 08.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093938

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.59

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 01.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 01.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 01.53	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.29.19 01.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 01.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 01.53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 01.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.29.19 01.53		
4-Bromofluorobenzene	460-00-4	108	%	70-130	06.29.19 01.53		



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH04A**
Lab Sample Id: 628256-008

Matrix: Soil
Date Collected: 06.17.19 13.15

Date Received: 06.19.19 08.00
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	92.1	4.99	mg/kg	06.24.19 17.52		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 17.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 17.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 17.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 17.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 17.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	06.23.19 17.39	
o-Terphenyl	84-15-1	77	%	70-135	06.23.19 17.39	



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH04A**
Lab Sample Id: 628256-008

Matrix: Soil
Date Collected: 06.17.19 13.15

Date Received: 06.19.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093938

Date Prep: 06.28.19 16.59

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.29.19 03.31	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.29.19 03.31	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.29.19 03.31	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.29.19 03.31	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.29.19 03.31	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.29.19 03.31	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.29.19 03.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	06.29.19 03.31		
1,4-Difluorobenzene	540-36-3	89	%	70-130	06.29.19 03.31		



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH05**
Lab Sample Id: 628256-009

Matrix: Soil
Date Collected: 06.17.19 13.20

Date Received: 06.19.19 08.00
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	06.24.19 17.57	U	1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 18.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 18.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 18.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 18.04	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 18.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	06.23.19 18.04	
o-Terphenyl	84-15-1	74	%	70-135	06.23.19 18.04	



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH05**
Lab Sample Id: 628256-009

Matrix: Soil
Date Collected: 06.17.19 13.20

Date Received: 06.19.19 08.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093938

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.59

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 03.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 03.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 03.53	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.29.19 03.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 03.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 03.53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 03.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	06.29.19 03.53		
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.29.19 03.53		



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH05A**
Lab Sample Id: 628256-010

Matrix: Soil
Date Collected: 06.17.19 13.35

Date Received: 06.19.19 08.00
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	59.9	4.95	mg/kg	06.24.19 18.03		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093433

Date Prep: 06.23.19 09.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 18.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 18.29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 18.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 18.29	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 18.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.23.19 18.29	
o-Terphenyl	84-15-1	93	%	70-135	06.23.19 18.29	



Certificate of Analytical Results 628256

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **PH05A**
Lab Sample Id: 628256-010

Matrix: Soil
Date Collected: 06.17.19 13.35

Date Received: 06.19.19 08.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093938

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.59

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 04.16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 04.16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 04.16	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.29.19 04.16	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 04.16	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 04.16	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 04.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.29.19 04.16		
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.29.19 04.16		

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 628256

LT Environmental, Inc. ADU 562

Analytical Method: Chloride by EPA 300

Seq Number: 3093335

MB Sample Id: 7680532-1-BLK

Matrix: Solid

LCS Sample Id: 7680532-1-BKS

Prep Method: E300P

Date Prep: 06.22.19

LCSD Sample Id: 7680532-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	258	103	256	102	90-110	1	20	mg/kg	06.24.19 15:34	

Analytical Method: Chloride by EPA 300

Seq Number: 3093335

Parent Sample Id: 628256-003

Matrix: Soil

MS Sample Id: 628256-003 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628256-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.95	248	236	95	235	95	90-110	0	20	mg/kg	06.24.19 17:08	

Analytical Method: Chloride by EPA 300

Seq Number: 3093335

Parent Sample Id: 628584-016

Matrix: Soil

MS Sample Id: 628584-016 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628584-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.7	250	257	96	258	97	90-110	0	20	mg/kg	06.24.19 15:51	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3093433

MB Sample Id: 7680670-1-BLK

Matrix: Solid

LCS Sample Id: 7680670-1-BKS

Prep Method: TX1005P

Date Prep: 06.23.19

LCSD Sample Id: 7680670-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1020	102	1080	108	70-135	6	20	mg/kg	06.23.19 13:04	
Diesel Range Organics (DRO)	<8.13	1000	1160	116	1170	117	70-135	1	20	mg/kg	06.23.19 13:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		82		91		70-135	%	06.23.19 13:04
o-Terphenyl	119		102		105		70-135	%	06.23.19 13:04

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

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

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

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



QC Summary 628256

LT Environmental, Inc.

ADU 562

Analytical Method: TPH By SW8015 Mod

Seq Number: 3093433

Parent Sample Id: 628256-001

Matrix: Soil

MS Sample Id: 628256-001 S

Prep Method: TX1005P

Date Prep: 06.23.19

MSD Sample Id: 628256-001 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)	11.6	999	871	86	854	84	70-135	2	20	mg/kg	06.23.19 14:19	
Diesel Range Organics (DRO)	11.8	999	966	96	993	98	70-135	3	20	mg/kg	06.23.19 14:19	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	78		84		70-135	%	06.23.19 14:19
o-Terphenyl	95		91		70-135	%	06.23.19 14:19

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093938

MB Sample Id: 7681015-1-BLK

Matrix: Solid

LCS Sample Id: 7681015-1-BKS

Prep Method: SW5030B

Date Prep: 06.28.19

LCSD Sample Id: 7681015-1-BSO

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	0.0840	84	0.0884	89	70-130	5	35	mg/kg	06.28.19 05:48	
Toluene	<0.00200	0.100	0.0811	81	0.0853	85	70-130	5	35	mg/kg	06.28.19 05:48	
Ethylbenzene	<0.00200	0.100	0.0876	88	0.0907	91	70-130	3	35	mg/kg	06.28.19 05:48	
m,p-Xylenes	<0.00400	0.200	0.175	88	0.181	91	70-130	3	35	mg/kg	06.28.19 05:48	
o-Xylene	<0.00200	0.100	0.0851	85	0.0892	89	70-130	5	35	mg/kg	06.28.19 05:48	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		94		95		70-130	%	06.28.19 05:48
4-Bromofluorobenzene	97		104		114		70-130	%	06.28.19 05:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093938

Parent Sample Id: 628012-001

Matrix: Soil

MS Sample Id: 628012-001 S

Prep Method: SW5030B

Date Prep: 06.28.19

MSD Sample Id: 628012-001 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	0.100	0.0739	74	0.0775	78	70-130	5	35	mg/kg	06.29.19 10:44	
Toluene	<0.00201	0.100	0.0682	68	0.0706	71	70-130	3	35	mg/kg	06.29.19 10:44	X
Ethylbenzene	<0.00201	0.100	0.0681	68	0.0708	71	70-130	4	35	mg/kg	06.29.19 10:44	X
m,p-Xylenes	<0.00402	0.201	0.136	68	0.142	71	70-130	4	35	mg/kg	06.29.19 10:44	X
o-Xylene	<0.00201	0.100	0.0656	66	0.0670	67	70-130	2	35	mg/kg	06.29.19 10:44	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		70-130	%	06.29.19 10:44
4-Bromofluorobenzene	108		113		70-130	%	06.29.19 10:44

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

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

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

Work Order No: 628256

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0380 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (602) 382-7550 Atlanta, GA (770) 449-8800 Tampa, FL (813) 281-1111
Hobbs, NM (505) 382-7550

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	Ggreen@lteny.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:	ADU 562	Turn Around	ANALYSIS REQUEST										Work Order Notes
Project Number:			Routine	☐									
P.O. Number:	2RP-5332		Rush:	yes									
Sampler's Name:	Garrett Green		Due Date:	6/24/18									

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	3.0				Thermometer ID		
Received Intact:	Yes	No			TNMO07		
Cooler Custody Seals:	Yes	No			Correction Factor:	-0.2	
Sample Custody Seals:	Yes	No			Total Containers:	10	

Number of Containers

EPA 8015)

EPA 0=8021)

E (EPA 300.0)

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E)	BTEX (E)	Chloride	Sample Comments
BH02	S	6/17/19	1135	1'	1	X	X	X	
BH02A			1145	3'	1				
BH03A			1150	1'	1				
BH03A			1200	3'	1				
BH04			1340	1'	1				
BH04A			1355	4'	1				
PH04			1300	1'	1				
PH04A			1315	4'	1				
PH05			1320	1'	1				
PH05A			1335	4'	1				

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 SiO ₂ 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>Scott Smith</i>	<i>Scott Smith</i>	6/18/19 1640	2		
3			4		
5			6		

Inter-Office Shipment

IOS Number : 41756

Date/Time: 06.19.2019 12:43 Created by: Martha Castro
 Lab# From: **Carlsbad** Delivery Priority:
 Lab# To: **Midland** Air Bill No.:

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

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628256-001	S	BH02	06.17.2019 11:35	SW8021B	BTEX by EPA 8021B	06.21.2019	07.01.2019	JKR	BR4FBZ BZ BZME EBZ	
628256-001	S	BH02	06.17.2019 11:35	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.01.2019	JKR	PHCC10C28 PHCC28C35	
628256-001	S	BH02	06.17.2019 11:35	E300_CL	Chloride by EPA 300	06.21.2019	12.14.2019	JKR	CL	
628256-002	S	BH02A	06.17.2019 11:45	SW8021B	BTEX by EPA 8021B	06.21.2019	07.01.2019	JKR	BR4FBZ BZ BZME EBZ	
628256-002	S	BH02A	06.17.2019 11:45	E300_CL	Chloride by EPA 300	06.21.2019	12.14.2019	JKR	CL	
628256-002	S	BH02A	06.17.2019 11:45	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.01.2019	JKR	PHCC10C28 PHCC28C35	
628256-003	S	BH03	06.17.2019 11:50	SW8021B	BTEX by EPA 8021B	06.21.2019	07.01.2019	JKR	BR4FBZ BZ BZME EBZ	
628256-003	S	BH03	06.17.2019 11:50	E300_CL	Chloride by EPA 300	06.21.2019	12.14.2019	JKR	CL	
628256-003	S	BH03	06.17.2019 11:50	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.01.2019	JKR	PHCC10C28 PHCC28C35	
628256-004	S	BH03A	06.17.2019 12:00	SW8021B	BTEX by EPA 8021B	06.21.2019	07.01.2019	JKR	BR4FBZ BZ BZME EBZ	
628256-004	S	BH03A	06.17.2019 12:00	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.01.2019	JKR	PHCC10C28 PHCC28C35	
628256-004	S	BH03A	06.17.2019 12:00	E300_CL	Chloride by EPA 300	06.21.2019	12.14.2019	JKR	CL	
628256-005	S	BH04	06.17.2019 13:40	SW8021B	BTEX by EPA 8021B	06.21.2019	07.01.2019	JKR	BR4FBZ BZ BZME EBZ	
628256-005	S	BH04	06.17.2019 13:40	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.01.2019	JKR	PHCC10C28 PHCC28C35	
628256-005	S	BH04	06.17.2019 13:40	E300_CL	Chloride by EPA 300	06.21.2019	12.14.2019	JKR	CL	
628256-006	S	BH04A	06.17.2019 13:55	SW8021B	BTEX by EPA 8021B	06.21.2019	07.01.2019	JKR	BR4FBZ BZ BZME EBZ	
628256-006	S	BH04A	06.17.2019 13:55	E300_CL	Chloride by EPA 300	06.21.2019	12.14.2019	JKR	CL	
628256-006	S	BH04A	06.17.2019 13:55	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.01.2019	JKR	PHCC10C28 PHCC28C35	
628256-007	S	PH04	06.17.2019 13:00	SW8021B	BTEX by EPA 8021B	06.21.2019	07.01.2019	JKR	BR4FBZ BZ BZME EBZ	
628256-007	S	PH04	06.17.2019 13:00	E300_CL	Chloride by EPA 300	06.21.2019	12.14.2019	JKR	CL	
628256-007	S	PH04	06.17.2019 13:00	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.01.2019	JKR	PHCC10C28 PHCC28C35	
628256-008	S	PH04A	06.17.2019 13:15	E300_CL	Chloride by EPA 300	06.21.2019	12.14.2019	JKR	CL	
628256-008	S	PH04A	06.17.2019 13:15	SW8021B	BTEX by EPA 8021B	06.21.2019	07.01.2019	JKR	BR4FBZ BZ BZME EBZ	
628256-008	S	PH04A	06.17.2019 13:15	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.01.2019	JKR	PHCC10C28 PHCC28C35	
628256-009	S	PH05	06.17.2019 13:20	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.01.2019	JKR	PHCC10C28 PHCC28C35	

Inter-Office Shipment

IOS Number : 41756

Date/Time: 06.19.2019 12:43 Created by: Martha Castro
 Lab# From: **Carlsbad** Delivery Priority:
 Lab# To: **Midland** Air Bill No.:

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

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628256-009	S	PH05	06.17.2019 13:20	E300_CL	Chloride by EPA 300	06.21.2019	12.14.2019	JKR	CL	
628256-009	S	PH05	06.17.2019 13:20	SW8021B	BTEX by EPA 8021B	06.21.2019	07.01.2019	JKR	BR4FBZ BZ BZME EBZ	
628256-010	S	PH05A	06.17.2019 13:35	SW8021B	BTEX by EPA 8021B	06.21.2019	07.01.2019	JKR	BR4FBZ BZ BZME EBZ	
628256-010	S	PH05A	06.17.2019 13:35	E300_CL	Chloride by EPA 300	06.21.2019	12.14.2019	JKR	CL	
628256-010	S	PH05A	06.17.2019 13:35	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.01.2019	JKR	PHCC10C28 PHCC28C3	

Inter Office Shipment or Sample Comments:

Relinquished By:



Martha Castro

Date Relinquished: 06.19.2019

Received By: _____

Date Received: _____

Cooler Temperature: _____

Analytical Report 628303

for
LT Environmental, Inc.

Project Manager: Dan Moir

ADU562

30-JUN-19

Collected By: Client



1089 N Canal Street
Carlsbad, NM 88220

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

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

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



30-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **628303**

ADU562

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628303. 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. 628303 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'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW15	S	06-18-19 09:15	0 - 5 ft	628303-001
SW16	S	06-18-19 09:20	0 - 5 ft	628303-002
SW17	S	06-18-19 09:25	0 - 5 ft	628303-003
SW18	S	06-18-19 09:30	0 - 5 ft	628303-004
SW19	S	06-18-19 09:55	0 - 5 ft	628303-005
SW20	S	06-18-19 10:00	0 - 5 ft	628303-006
SW21	S	06-18-19 10:05	0 - 5 ft	628303-007
FS11	S	06-18-19 11:35	4.5 - 5 ft	628303-008
FS12	S	06-18-19 11:40	4.5 - 5 ft	628303-009
FS13	S	06-18-19 11:45	4.5 - 5 ft	628303-010
FS14	S	06-18-19 11:50	4.5 - 5 ft	628303-011
FS15	S	06-18-19 12:10	4.5 - 5 ft	628303-012
FS16	S	06-18-19 12:15	4.5 - 5 ft	628303-013
FS17	S	06-18-19 12:20	4.5 - 5 ft	628303-014
FS18	S	06-18-19 12:25	4.5 - 5 ft	628303-015
FS19	S	06-18-19 12:50	4.5 - 5 ft	628303-016
FS20	S	06-18-19 12:55	4.5 - 5 ft	628303-017
FS21	S	06-18-19 13:00	4.5 - 5 ft	628303-018
FS22	S	06-18-19 13:05	4.5 - 5 ft	628303-019
FS23	S	06-18-19 13:20	4.5 - 5 ft	628303-020
FS24	S	06-18-19 13:25	4.5 - 5 ft	628303-021



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ADU562*

Project ID:
Work Order Number(s): 628303

Report Date: 30-JUN-19
Date Received: 06/19/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093275 TPH By SW8015 Mod

Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.

Samples affected are: 628303-001,628303-007,628303-006,628303-002.

Batch: LBA-3093379 Chloride by EPA 300

Lab Sample ID 628303-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 628303-003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020, -021.

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

Batch: LBA-3093938 BTEX by EPA 8021B

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

Batch: LBA-3093945 BTEX by EPA 8021B

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



Certificate of Analysis Summary 628303

LT Environmental, Inc., Arvada, CO

Project Name: ADU562

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 08:00 am

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	628303-001	628303-002	628303-003	628303-004	628303-005	628303-006
	Field Id:	SW15	SW16	SW17	SW18	SW19	SW20
	Depth:	0-5 ft	0-5 ft	0-5 ft	0-5 ft	0-5 ft	0-5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-18-19 09:15	Jun-18-19 09:20	Jun-18-19 09:25	Jun-18-19 09:30	Jun-18-19 09:55	Jun-18-19 10:00
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53
	Analyzed:	Jun-29-19 12:22	Jun-29-19 12:51	Jun-29-19 13:14	Jun-29-19 13:37	Jun-29-19 14:00	Jun-29-19 14:24
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00401 0.00401	<0.00402 0.00402	<0.00401 0.00401	<0.00399 0.00399	<0.00398 0.00398
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Jun-22-19 16:30	Jun-22-19 16:30	Jun-22-19 17:00	Jun-22-19 17:00	Jun-22-19 17:00	Jun-22-19 17:00
	Analyzed:	Jun-24-19 18:08	Jun-24-19 18:14	Jun-24-19 19:26	Jun-24-19 19:31	Jun-24-19 19:35	Jun-24-19 19:11
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1150 4.95	1560 24.8	2400 25.0	15200 100	3950 25.0	1390 5.00
TPH By SW8015 Mod SUB: T104704400-18-16	Extracted:	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00
	Analyzed:	Jun-22-19 12:30	Jun-22-19 13:47	Jun-22-19 14:12	Jun-22-19 14:39	Jun-22-19 15:05	Jun-22-19 15:32
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Diesel Range Organics (DRO)		<15.0 15.0	18.6 15.0	<15.0 15.0	54.6 15.0	<15.0 15.0	35.4 14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	20.1 15.0	<15.0 15.0	<14.9 14.9
Total TPH		<15.0 15.0	18.6 15.0	<15.0 15.0	74.7 15.0	<15.0 15.0	35.4 14.9
Total GRO-DRO		<15.0 15.0	18.6 15.0	<15.0 15.0	54.6 15.0	<15.0 15.0	35.4 14.9

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 628303

LT Environmental, Inc., Arvada, CO

Project Name: ADU562

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 08:00 am

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	628303-007	628303-008	628303-009	628303-010	628303-011	628303-012
	Field Id:	SW21	FS11	FS12	FS13	FS14	FS15
	Depth:	0-5 ft	4.5-5 ft	4.5-5 ft	4.5-5 ft	4.5-5 ft	4.5-5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-18-19 10:05	Jun-18-19 11:35	Jun-18-19 11:40	Jun-18-19 11:45	Jun-18-19 11:50	Jun-18-19 12:10
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53
	Analyzed:	Jun-29-19 14:47	Jun-29-19 15:10	Jun-29-19 15:33	Jun-29-19 15:56	Jun-29-19 17:44	Jun-29-19 18:07
	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	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00400 0.00400	<0.00402 0.00402	<0.00401 0.00401	<0.00399 0.00399	<0.00400 0.00400
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Jun-22-19 17:00	Jun-22-19 17:00	Jun-22-19 17:00	Jun-22-19 17:00	Jun-22-19 17:00	Jun-22-19 17:00
	Analyzed:	Jun-24-19 19:40	Jun-24-19 19:55	Jun-24-19 20:00	Jun-24-19 20:04	Jun-24-19 20:19	Jun-24-19 20:09
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5860 50.0	2780 25.0	1260 5.00	1490 D 24.8	628 5.00	3770 25.0
TPH By SW8015 Mod SUB: T104704400-18-16	Extracted:	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00
	Analyzed:	Jun-22-19 15:58	Jun-22-19 16:24	Jun-22-19 16:49	Jun-22-19 17:15	Jun-22-19 18:07	Jun-22-19 18:33
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	38.9 15.0	43.6 15.0	39.9 14.9	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	38.9 15.0	43.6 15.0	39.9 14.9	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	38.9 15.0	43.6 15.0	39.9 14.9	<15.0 15.0

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 628303

LT Environmental, Inc., Arvada, CO

Project Name: ADU562

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 08:00 am

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	628303-013	628303-014	628303-015	628303-016	628303-017	628303-018
	Field Id:	FS16	FS17	FS18	FS19	FS20	FS21
	Depth:	4.5-5 ft	4.5-5 ft	4.5-5 ft	4.5-5 ft	4.5-5 ft	4.5-5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-18-19 12:15	Jun-18-19 12:20	Jun-18-19 12:25	Jun-18-19 12:50	Jun-18-19 12:55	Jun-18-19 13:00
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:53
	Analyzed:	Jun-29-19 18:30	Jun-29-19 18:53	Jun-29-19 19:17	Jun-29-19 19:40	Jun-29-19 20:03	Jun-29-19 20:26
	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	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00401 0.00401	<0.00400 0.00400	<0.00398 0.00398	<0.00398 0.00398	<0.00399 0.00399	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Jun-22-19 17:00	Jun-22-19 17:00	Jun-22-19 17:00	Jun-22-19 17:00	Jun-22-19 17:00	Jun-22-19 17:00
	Analyzed:	Jun-24-19 20:14	Jun-24-19 20:34	Jun-24-19 20:38	Jun-24-19 20:53	Jun-24-19 20:58	Jun-24-19 21:03
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2350 25.0	1770 25.0	2580 25.0	632 5.00	777 5.00	379 5.00
TPH By SW8015 Mod SUB: T104704400-18-16	Extracted:	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 10:00
	Analyzed:	Jun-22-19 18:58	Jun-22-19 19:24	Jun-22-19 19:49	Jun-22-19 20:15	Jun-22-19 20:40	Jun-22-19 21:06
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		<14.9 14.9	<15.0 15.0	23.3 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<14.9 14.9	<15.0 15.0	23.3 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<14.9 14.9	<15.0 15.0	23.3 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 628303

LT Environmental, Inc., Arvada, CO

Project Name: ADU562

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-19-19 08:00 am

Report Date: 30-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	628303-019	628303-020	628303-021			
	Field Id:	FS22	FS23	FS24			
	Depth:	4.5-5 ft	4.5-5 ft	4.5-5 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Jun-18-19 13:05	Jun-18-19 13:20	Jun-18-19 13:25			
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Jun-28-19 16:53	Jun-28-19 16:53	Jun-28-19 16:59			
	Analyzed:	Jun-29-19 20:49	Jun-29-19 21:12	Jun-29-19 04:39			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199			
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199			
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199			
m,p-Xylenes		<0.00400 0.00400	<0.00402 0.00402	<0.00398 0.00398			
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199			
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199			
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199			
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Jun-22-19 17:00	Jun-22-19 17:00	Jun-22-19 17:00			
	Analyzed:	Jun-24-19 21:07	Jun-24-19 21:12	Jun-24-19 21:17			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		547 5.00	440 5.00	997 5.00			
TPH By SW8015 Mod SUB: T104704400-18-16	Extracted:	Jun-22-19 10:00	Jun-22-19 10:00	Jun-22-19 15:00			
	Analyzed:	Jun-22-19 21:31	Jun-22-19 21:57	Jun-23-19 09:11			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0			

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Jessica Kramer
Project Assistant



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW15**
Lab Sample Id: 628303-001

Matrix: Soil
Date Collected: 06.18.19 09.15

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1150	4.95	mg/kg	06.24.19 18.08		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 12.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 12.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 12.30	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 12.30	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 12.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	06.22.19 12.30	
o-Terphenyl	84-15-1	64	%	70-135	06.22.19 12.30	**



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW15**
Lab Sample Id: 628303-001

Matrix: Soil
Date Collected: 06.18.19 09.15

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.29.19 12.22	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.29.19 12.22	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.29.19 12.22	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.29.19 12.22	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.29.19 12.22	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.29.19 12.22	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.29.19 12.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.29.19 12.22		
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.29.19 12.22		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW16**
Lab Sample Id: 628303-002

Matrix: Soil
Date Collected: 06.18.19 09.20

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: SPC

Seq Number: 3093335

Date Prep: 06.22.19 16.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1560	24.8	mg/kg	06.24.19 18.14		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 13.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	18.6	15.0	mg/kg	06.22.19 13.47		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 13.47	U	1
Total TPH	PHC635	18.6	15.0	mg/kg	06.22.19 13.47		1
Total GRO-DRO	PHC628	18.6	15.0	mg/kg	06.22.19 13.47		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	06.22.19 13.47	
o-Terphenyl	84-15-1	67	%	70-135	06.22.19 13.47	**



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW16**
Lab Sample Id: 628303-002

Matrix: Soil
Date Collected: 06.18.19 09.20

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 12.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 12.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 12.51	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.29.19 12.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 12.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 12.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 12.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	06.29.19 12.51		
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.29.19 12.51		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW17**
Lab Sample Id: 628303-003

Matrix: Soil
Date Collected: 06.18.19 09.25

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2400	25.0	mg/kg	06.24.19 19.26		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 14.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 14.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 14.12	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 14.12	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 14.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.22.19 14.12	
o-Terphenyl	84-15-1	77	%	70-135	06.22.19 14.12	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW17**
Lab Sample Id: 628303-003

Matrix: Soil
Date Collected: 06.18.19 09.25

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.29.19 13.14	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.29.19 13.14	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.29.19 13.14	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.29.19 13.14	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.29.19 13.14	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.29.19 13.14	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.29.19 13.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	06.29.19 13.14		
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.29.19 13.14		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW18**
Lab Sample Id: 628303-004

Matrix: Soil
Date Collected: 06.18.19 09.30

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15200	100	mg/kg	06.24.19 19.31		20

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 14.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	54.6	15.0	mg/kg	06.22.19 14.39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	20.1	15.0	mg/kg	06.22.19 14.39		1
Total TPH	PHC635	74.7	15.0	mg/kg	06.22.19 14.39		1
Total GRO-DRO	PHC628	54.6	15.0	mg/kg	06.22.19 14.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	06.22.19 14.39	
o-Terphenyl	84-15-1	75	%	70-135	06.22.19 14.39	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW18**
Lab Sample Id: 628303-004

Matrix: Soil
Date Collected: 06.18.19 09.30

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 13.37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 13.37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 13.37	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.29.19 13.37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 13.37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 13.37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 13.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	06.29.19 13.37		
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.29.19 13.37		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW19**
Lab Sample Id: 628303-005

Matrix: Soil
Date Collected: 06.18.19 09.55

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3950	25.0	mg/kg	06.24.19 19.35		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 15.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 15.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 15.05	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 15.05	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 15.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	06.22.19 15.05	
o-Terphenyl	84-15-1	74	%	70-135	06.22.19 15.05	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW19**
Lab Sample Id: 628303-005

Matrix: Soil
Date Collected: 06.18.19 09.55

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 14.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 14.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 14.00	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.29.19 14.00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 14.00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 14.00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 14.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.29.19 14.00		
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.29.19 14.00		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW20**
Lab Sample Id: 628303-006

Matrix: Soil
Date Collected: 06.18.19 10.00

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1390	5.00	mg/kg	06.24.19 19.11		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.22.19 15.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	35.4	14.9	mg/kg	06.22.19 15.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.22.19 15.32	U	1
Total TPH	PHC635	35.4	14.9	mg/kg	06.22.19 15.32		1
Total GRO-DRO	PHC628	35.4	14.9	mg/kg	06.22.19 15.32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	06.22.19 15.32	
o-Terphenyl	84-15-1	67	%	70-135	06.22.19 15.32	**



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW20**
Lab Sample Id: 628303-006

Matrix: Soil
Date Collected: 06.18.19 10.00

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.29.19 14.24	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.29.19 14.24	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.29.19 14.24	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.29.19 14.24	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.29.19 14.24	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.29.19 14.24	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.29.19 14.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	06.29.19 14.24		
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.29.19 14.24		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW21**
Lab Sample Id: 628303-007

Matrix: Soil
Date Collected: 06.18.19 10.05

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5860	50.0	mg/kg	06.24.19 19.40		10

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 15.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 15.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 15.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 15.58	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 15.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	06.22.19 15.58	
o-Terphenyl	84-15-1	61	%	70-135	06.22.19 15.58	**



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **SW21**
Lab Sample Id: 628303-007

Matrix: Soil
Date Collected: 06.18.19 10.05

Date Received: 06.19.19 08.00
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 14.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 14.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 14.47	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.29.19 14.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 14.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 14.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 14.47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.29.19 14.47		
4-Bromofluorobenzene	460-00-4	111	%	70-130	06.29.19 14.47		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS11**
Lab Sample Id: 628303-008

Matrix: Soil
Date Collected: 06.18.19 11.35

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2780	25.0	mg/kg	06.24.19 19.55		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 16.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 16.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 16.24	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 16.24	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 16.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.22.19 16.24	
o-Terphenyl	84-15-1	75	%	70-135	06.22.19 16.24	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS11**
Lab Sample Id: 628303-008

Matrix: Soil
Date Collected: 06.18.19 11.35

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 15.10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 15.10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 15.10	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.29.19 15.10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 15.10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 15.10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 15.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	06.29.19 15.10		
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.29.19 15.10		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: FS12
Lab Sample Id: 628303-009

Matrix: Soil
Date Collected: 06.18.19 11.40

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1260	5.00	mg/kg	06.24.19 20.00		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 16.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	38.9	15.0	mg/kg	06.22.19 16.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 16.49	U	1
Total TPH	PHC635	38.9	15.0	mg/kg	06.22.19 16.49		1
Total GRO-DRO	PHC628	38.9	15.0	mg/kg	06.22.19 16.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.22.19 16.49	
o-Terphenyl	84-15-1	73	%	70-135	06.22.19 16.49	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS12**
Lab Sample Id: 628303-009

Matrix: Soil
Date Collected: 06.18.19 11.40

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.29.19 15.33	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.29.19 15.33	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.29.19 15.33	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.29.19 15.33	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.29.19 15.33	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.29.19 15.33	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.29.19 15.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.29.19 15.33		
4-Bromofluorobenzene	460-00-4	109	%	70-130	06.29.19 15.33		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS13**
Lab Sample Id: 628303-010

Matrix: Soil
Date Collected: 06.18.19 11.45

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1490	24.8	mg/kg	06.25.19 19.12	D	5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 17.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	43.6	15.0	mg/kg	06.22.19 17.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 17.15	U	1
Total TPH	PHC635	43.6	15.0	mg/kg	06.22.19 17.15		1
Total GRO-DRO	PHC628	43.6	15.0	mg/kg	06.22.19 17.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	06.22.19 17.15	
o-Terphenyl	84-15-1	71	%	70-135	06.22.19 17.15	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS13**
Lab Sample Id: 628303-010

Matrix: Soil
Date Collected: 06.18.19 11.45

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 15.56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 15.56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 15.56	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.29.19 15.56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 15.56	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 15.56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 15.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	111	%	70-130	06.29.19 15.56		
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.29.19 15.56		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS14**
Lab Sample Id: 628303-011

Matrix: Soil
Date Collected: 06.18.19 11.50

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	628	5.00	mg/kg	06.24.19 20.19		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.22.19 18.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	39.9	14.9	mg/kg	06.22.19 18.07		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.22.19 18.07	U	1
Total TPH	PHC635	39.9	14.9	mg/kg	06.22.19 18.07		1
Total GRO-DRO	PHC628	39.9	14.9	mg/kg	06.22.19 18.07		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.22.19 18.07	
o-Terphenyl	84-15-1	74	%	70-135	06.22.19 18.07	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS14**
Lab Sample Id: 628303-011

Matrix: Soil
Date Collected: 06.18.19 11.50

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 17.44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 17.44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 17.44	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.29.19 17.44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 17.44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 17.44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 17.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	06.29.19 17.44		
1,4-Difluorobenzene	540-36-3	92	%	70-130	06.29.19 17.44		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: FS15	Matrix: Soil	Date Received: 06.19.19 08.00
Lab Sample Id: 628303-012	Date Collected: 06.18.19 12.10	Sample Depth: 4.5 - 5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 06.22.19 17.00	Basis: Wet Weight
Seq Number: 3093379		SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3770	25.0	mg/kg	06.24.19 20.09		5

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ARM	% Moisture:
Analyst: ARM	Date Prep: 06.22.19 10.00
Seq Number: 3093275	Basis: Wet Weight
	SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 18.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 18.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 18.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 18.33	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 18.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.22.19 18.33	
o-Terphenyl	84-15-1	74	%	70-135	06.22.19 18.33	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS15**
Lab Sample Id: 628303-012

Matrix: Soil
Date Collected: 06.18.19 12.10

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 18.07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 18.07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 18.07	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.29.19 18.07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 18.07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 18.07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 18.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.29.19 18.07		
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.29.19 18.07		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS16**
Lab Sample Id: 628303-013

Matrix: Soil
Date Collected: 06.18.19 12.15

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2350	25.0	mg/kg	06.24.19 20.14		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.22.19 18.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.22.19 18.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.22.19 18.58	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.22.19 18.58	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.22.19 18.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.22.19 18.58	
o-Terphenyl	84-15-1	70	%	70-135	06.22.19 18.58	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS16**
Lab Sample Id: 628303-013

Matrix: Soil
Date Collected: 06.18.19 12.15

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 18.30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 18.30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 18.30	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.29.19 18.30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 18.30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 18.30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 18.30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.29.19 18.30		
4-Bromofluorobenzene	460-00-4	108	%	70-130	06.29.19 18.30		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: FS17
Lab Sample Id: 628303-014

Matrix: Soil
Date Collected: 06.18.19 12.20

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1770	25.0	mg/kg	06.24.19 20.34		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 19.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 19.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 19.24	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 19.24	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 19.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.22.19 19.24	
o-Terphenyl	84-15-1	73	%	70-135	06.22.19 19.24	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS17**
Lab Sample Id: 628303-014

Matrix: Soil
Date Collected: 06.18.19 12.20

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 18.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 18.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 18.53	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.29.19 18.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 18.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 18.53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 18.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.29.19 18.53		
4-Bromofluorobenzene	460-00-4	110	%	70-130	06.29.19 18.53		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS18**
Lab Sample Id: 628303-015

Matrix: Soil
Date Collected: 06.18.19 12.25

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2580	25.0	mg/kg	06.24.19 20.38		5

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 19.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	23.3	15.0	mg/kg	06.22.19 19.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 19.49	U	1
Total TPH	PHC635	23.3	15.0	mg/kg	06.22.19 19.49		1
Total GRO-DRO	PHC628	23.3	15.0	mg/kg	06.22.19 19.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.22.19 19.49	
o-Terphenyl	84-15-1	78	%	70-135	06.22.19 19.49	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS18**
Lab Sample Id: 628303-015

Matrix: Soil
Date Collected: 06.18.19 12.25

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.29.19 19.17	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.29.19 19.17	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.29.19 19.17	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.29.19 19.17	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.29.19 19.17	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.29.19 19.17	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.29.19 19.17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.29.19 19.17		
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.29.19 19.17		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS19**
Lab Sample Id: 628303-016

Matrix: Soil
Date Collected: 06.18.19 12.50

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	632	5.00	mg/kg	06.24.19 20.53		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 20.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 20.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 20.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 20.15	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 20.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.22.19 20.15	
o-Terphenyl	84-15-1	70	%	70-135	06.22.19 20.15	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS19**
Lab Sample Id: 628303-016

Matrix: Soil
Date Collected: 06.18.19 12.50

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.29.19 19.40	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.29.19 19.40	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.29.19 19.40	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.29.19 19.40	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.29.19 19.40	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.29.19 19.40	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.29.19 19.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	06.29.19 19.40		
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.29.19 19.40		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS20**
Lab Sample Id: 628303-017

Matrix: Soil
Date Collected: 06.18.19 12.55

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	777	5.00	mg/kg	06.24.19 20.58		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 20.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 20.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 20.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 20.40	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 20.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	06.22.19 20.40	
o-Terphenyl	84-15-1	71	%	70-135	06.22.19 20.40	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: **FS20**
Lab Sample Id: 628303-017

Matrix: Soil
Date Collected: 06.18.19 12.55

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 20.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 20.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 20.03	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.29.19 20.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 20.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 20.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 20.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	06.29.19 20.03		
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.29.19 20.03		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: FS21
Lab Sample Id: 628303-018

Matrix: Soil
Date Collected: 06.18.19 13.00

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	379	5.00	mg/kg	06.24.19 21.03		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 21.06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 21.06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 21.06	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 21.06	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 21.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.22.19 21.06	
o-Terphenyl	84-15-1	79	%	70-135	06.22.19 21.06	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: FS21
Lab Sample Id: 628303-018

Matrix: Soil
Date Collected: 06.18.19 13.00

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.29.19 20.26	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.29.19 20.26	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.29.19 20.26	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.29.19 20.26	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.29.19 20.26	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.29.19 20.26	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.29.19 20.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	06.29.19 20.26		
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.29.19 20.26		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: FS22
Lab Sample Id: 628303-019

Matrix: Soil
Date Collected: 06.18.19 13.05

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	547	5.00	mg/kg	06.24.19 21.07		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 21.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 21.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 21.31	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 21.31	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 21.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	06.22.19 21.31	
o-Terphenyl	84-15-1	77	%	70-135	06.22.19 21.31	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: FS22
Lab Sample Id: 628303-019

Matrix: Soil
Date Collected: 06.18.19 13.05

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.29.19 20.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.29.19 20.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.29.19 20.49	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.29.19 20.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.29.19 20.49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.29.19 20.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.29.19 20.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	06.29.19 20.49		
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.29.19 20.49		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: FS23
Lab Sample Id: 628303-020

Matrix: Soil
Date Collected: 06.18.19 13.20

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	440	5.00	mg/kg	06.24.19 21.12		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093275

Date Prep: 06.22.19 10.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.22.19 21.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.22.19 21.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.22.19 21.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.22.19 21.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.22.19 21.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.22.19 21.57	
o-Terphenyl	84-15-1	73	%	70-135	06.22.19 21.57	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: FS23
Lab Sample Id: 628303-020

Matrix: Soil
Date Collected: 06.18.19 13.20

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093945

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.53

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.29.19 21.12	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.29.19 21.12	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.29.19 21.12	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.29.19 21.12	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.29.19 21.12	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.29.19 21.12	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.29.19 21.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	06.29.19 21.12		
1,4-Difluorobenzene	540-36-3	95	%	70-130	06.29.19 21.12		



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: FS24
Lab Sample Id: 628303-021

Matrix: Soil
Date Collected: 06.18.19 13.25

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093379

Date Prep: 06.22.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	997	5.00	mg/kg	06.24.19 21.17		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093277

Date Prep: 06.22.19 15.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.23.19 09.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.23.19 09.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.23.19 09.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.23.19 09.11	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.23.19 09.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	06.23.19 09.11	
o-Terphenyl	84-15-1	75	%	70-135	06.23.19 09.11	



Certificate of Analytical Results 628303

LT Environmental, Inc., Arvada, CO

ADU562

Sample Id: FS24
Lab Sample Id: 628303-021

Matrix: Soil
Date Collected: 06.18.19 13.25

Date Received: 06.19.19 08.00
Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: FOV

Seq Number: 3093938

Prep Method: SW5030B

% Moisture:

Date Prep: 06.28.19 16.59

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.29.19 04.39	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.29.19 04.39	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.29.19 04.39	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.29.19 04.39	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.29.19 04.39	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.29.19 04.39	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.29.19 04.39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.29.19 04.39		
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.29.19 04.39		

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 628303

LT Environmental, Inc. ADU562

Analytical Method: Chloride by EPA 300

Seq Number: 3093335

MB Sample Id: 7680532-1-BLK

Matrix: Solid

LCS Sample Id: 7680532-1-BKS

Prep Method: E300P

Date Prep: 06.22.19

LCSD Sample Id: 7680532-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	258	103	256	102	90-110	1	20	mg/kg	06.24.19 15:34	

Analytical Method: Chloride by EPA 300

Seq Number: 3093379

MB Sample Id: 7680534-1-BLK

Matrix: Solid

LCS Sample Id: 7680534-1-BKS

Prep Method: E300P

Date Prep: 06.22.19

LCSD Sample Id: 7680534-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	270	108	271	108	90-110	0	20	mg/kg	06.24.19 19:02	

Analytical Method: Chloride by EPA 300

Seq Number: 3093335

Parent Sample Id: 628256-003

Matrix: Soil

MS Sample Id: 628256-003 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628256-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.95	248	236	95	235	95	90-110	0	20	mg/kg	06.24.19 17:08	

Analytical Method: Chloride by EPA 300

Seq Number: 3093335

Parent Sample Id: 628584-016

Matrix: Soil

MS Sample Id: 628584-016 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628584-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	16.7	250	257	96	258	97	90-110	0	20	mg/kg	06.24.19 15:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3093379

Parent Sample Id: 628303-006

Matrix: Soil

MS Sample Id: 628303-006 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628303-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1390	250	1590	80	1590	80	90-110	0	20	mg/kg	06.24.19 19:16	X

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

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

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

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



QC Summary 628303

LT Environmental, Inc. ADU562

Analytical Method: Chloride by EPA 300

Seq Number: 3093379

Parent Sample Id: 628303-011

Matrix: Soil

MS Sample Id: 628303-011 S

Prep Method: E300P

Date Prep: 06.22.19

MSD Sample Id: 628303-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	628	250	872	98	871	97	90-110	0	20	mg/kg	06.24.19 20:24	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3093275

MB Sample Id: 7680558-1-BLK

Matrix: Solid

LCS Sample Id: 7680558-1-BKS

Prep Method: TX1005P

Date Prep: 06.22.19

LCSD Sample Id: 7680558-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1060	106	1050	105	70-135	1	20	mg/kg	06.22.19 11:39	
Diesel Range Organics (DRO)	<8.13	1000	1130	113	1140	114	70-135	1	20	mg/kg	06.22.19 11:39	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		92		93		70-135	%	06.22.19 11:39
o-Terphenyl	106		95		94		70-135	%	06.22.19 11:39

Analytical Method: TPH By SW8015 Mod

Seq Number: 3093277

MB Sample Id: 7680559-1-BLK

Matrix: Solid

LCS Sample Id: 7680559-1-BKS

Prep Method: TX1005P

Date Prep: 06.22.19

LCSD Sample Id: 7680559-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1090	109	1090	109	70-135	0	20	mg/kg	06.22.19 23:13	
Diesel Range Organics (DRO)	<8.13	1000	1100	110	1080	108	70-135	2	20	mg/kg	06.22.19 23:13	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		94		93		70-135	%	06.22.19 23:13
o-Terphenyl	97		87		87		70-135	%	06.22.19 23:13

Analytical Method: TPH By SW8015 Mod

Seq Number: 3093275

Parent Sample Id: 628303-001

Matrix: Soil

MS Sample Id: 628303-001 S

Prep Method: TX1005P

Date Prep: 06.22.19

MSD Sample Id: 628303-001 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)	13.9	997	933	92	912	90	70-135	2	20	mg/kg	06.22.19 12:56	
Diesel Range Organics (DRO)	9.85	997	988	98	950	94	70-135	4	20	mg/kg	06.22.19 12:56	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		80		70-135	%	06.22.19 12:56
o-Terphenyl	80		76		70-135	%	06.22.19 12:56

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

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

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

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



QC Summary 628303

LT Environmental, Inc. ADU562

Analytical Method: TPH By SW8015 Mod

Seq Number: 3093277

Parent Sample Id: 628584-001

Matrix: Soil

MS Sample Id: 628584-001 S

Prep Method: TX1005P

Date Prep: 06.22.19

MSD Sample Id: 628584-001 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)	20.8	999	1020	100	981	96	70-135	4	20	mg/kg	06.23.19 00:29	
Diesel Range Organics (DRO)	228	999	1150	92	1170	95	70-135	2	20	mg/kg	06.23.19 00:29	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	87		84		70-135	%	06.23.19 00:29
o-Terphenyl	79		81		70-135	%	06.23.19 00:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093945

MB Sample Id: 7681013-1-BLK

Matrix: Solid

LCS Sample Id: 7681013-1-BKS

Prep Method: SW5030B

Date Prep: 06.28.19

LCSD Sample Id: 7681013-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0766	77	0.0775	78	70-130	1	35	mg/kg	06.29.19 09:55	
Toluene	0.000457	0.0998	0.0870	87	0.0874	87	70-130	0	35	mg/kg	06.29.19 09:55	
Ethylbenzene	<0.000564	0.0998	0.0946	95	0.0959	96	70-130	1	35	mg/kg	06.29.19 09:55	
m,p-Xylenes	<0.00101	0.200	0.187	94	0.188	94	70-130	1	35	mg/kg	06.29.19 09:55	
o-Xylene	<0.000344	0.0998	0.0903	90	0.0922	92	70-130	2	35	mg/kg	06.29.19 09:55	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		90		92		70-130	%	06.29.19 09:55
4-Bromofluorobenzene	104		103		105		70-130	%	06.29.19 09:55

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093938

MB Sample Id: 7681015-1-BLK

Matrix: Solid

LCS Sample Id: 7681015-1-BKS

Prep Method: SW5030B

Date Prep: 06.28.19

LCSD Sample Id: 7681015-1-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	0.0840	84	0.0884	89	70-130	5	35	mg/kg	06.28.19 05:48	
Toluene	<0.00200	0.100	0.0811	81	0.0853	85	70-130	5	35	mg/kg	06.28.19 05:48	
Ethylbenzene	<0.00200	0.100	0.0876	88	0.0907	91	70-130	3	35	mg/kg	06.28.19 05:48	
m,p-Xylenes	<0.00400	0.200	0.175	88	0.181	91	70-130	3	35	mg/kg	06.28.19 05:48	
o-Xylene	<0.00200	0.100	0.0851	85	0.0892	89	70-130	5	35	mg/kg	06.28.19 05:48	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		94		95		70-130	%	06.28.19 05:48
4-Bromofluorobenzene	97		104		114		70-130	%	06.28.19 05:48

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

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

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

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



QC Summary 628303

LT Environmental, Inc. ADU562

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093945

Parent Sample Id: 628303-001

Matrix: Soil

MS Sample Id: 628303-001 S

Prep Method: SW5030B

Date Prep: 06.28.19

MSD Sample Id: 628303-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0822	82	0.0818	82	70-130	0	35	mg/kg	06.29.19 10:41	
Toluene	0.000528	0.100	0.0876	87	0.0879	88	70-130	0	35	mg/kg	06.29.19 10:41	
Ethylbenzene	<0.00200	0.100	0.0939	94	0.0937	94	70-130	0	35	mg/kg	06.29.19 10:41	
m,p-Xylenes	<0.00102	0.200	0.182	91	0.182	91	70-130	0	35	mg/kg	06.29.19 10:41	
o-Xylene	<0.000345	0.100	0.0879	88	0.0879	88	70-130	0	35	mg/kg	06.29.19 10:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		96		70-130	%	06.29.19 10:41
4-Bromofluorobenzene	107		107		70-130	%	06.29.19 10:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093938

Parent Sample Id: 628012-001

Matrix: Soil

MS Sample Id: 628012-001 S

Prep Method: SW5030B

Date Prep: 06.28.19

MSD Sample Id: 628012-001 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	0.100	0.0739	74	0.0775	78	70-130	5	35	mg/kg	06.29.19 10:44	
Toluene	<0.00201	0.100	0.0682	68	0.0706	71	70-130	3	35	mg/kg	06.29.19 10:44	X
Ethylbenzene	<0.00201	0.100	0.0681	68	0.0708	71	70-130	4	35	mg/kg	06.29.19 10:44	X
m,p-Xylenes	<0.00402	0.201	0.136	68	0.142	71	70-130	4	35	mg/kg	06.29.19 10:44	X
o-Xylene	<0.00201	0.100	0.0656	66	0.0670	67	70-130	2	35	mg/kg	06.29.19 10:44	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		70-130	%	06.29.19 10:44
4-Bromofluorobenzene	108		113		70-130	%	06.29.19 10:44

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

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

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

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



Work Order No.:

628302

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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: ☐

[illegible]

of Containers	
8015)	
A 0=8021)	
EPA 300.0)	
TAT starts the day received by the	

[illegible][illegible]

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

1631 / 245.1 / 7470 / 7471 · H₉

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>[Signature]</i>	<i>[Signature]</i>	6/18/14 1640	2		
3			4		
5			6		

Revised Date 05/14/18 Rev 2018.1



Chain of Custody

Work Order No: 628303

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

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Page 2 of 3

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	Green@ltenv.com

Project Name:		Turn Around	☐ Routine ☐ Rush 6/24/14
Project Number:			Due Date: 6/24/14
P.O. Number:			
Sampler's Name:	Garrett Green		

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

SAMPLE RECEIPT										ANALYSIS REQUEST										Work Order Notes		
Project Number:					Routine ☐					Turn Around										TAT starts the day received by the lab, if received by 4:30pm		
P.O. Number:					Rush: 6/24/14																	
Sampler's Name: Garrett Green					Due Date: 6/24/14															Sample Comments		
Temperature (°C):					Temp Blank:		Yes No		Wet Ice:		Yes No											
Received Intact:					Yes No		100% Thermometer ID															
Cooler Custody Seals:					Yes No		N/A		Correction Factor:													
Sample Custody Seals:					Yes No		N/A		Total Containers:													
Sample Identification					Matrix		Date Sampled		Time Sampled		Depth											
FS14					S		6/18/14		1150		45'-5'											
FS15									1210													
FS16									1215													
FS17									1220													
FS18									1225													
FS19									1250													
FS20									1255													
FS21									1300													
FS22									1305													
FS23									1320													
Total 200.7 / 6010					200.8 / 6020:		8RCRA 13PPM		Texas 11		Al Sh As Ba Pb Cd Cr Cu Fe Hg Mn Ni											

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 TCIP / 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
6/18/14	6/18/14	1640			

Chain of Custody

Work Order No.:

628303

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) 885-3443 Lubbock, TX (806) 704-4000

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

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Page 2 of 4

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	Ggreen@ltenv.com

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

Project Name:	ADU 562	Turn Around
Project Number:		Routine ☐
P.O. Number:	2BP-5332	Rush: yes
Sampler's Name:	Garrett Green	Due Date: 6/24/19

[illegible]

SAMPLE RECEIPT	Temp Blank:	Yes	No	Well Ice:	Yes	No
Temperature (°C):						
Received intact:	Yes No					
Cooler Custody Seals:	Yes No N/A					
Sample Custody Seals:	Yes No N/A			Total Containers:		

	No. of Containers
A 8015)	
PA 0=8021)	
(EPA 300.0)	
TAT starts the day received by the	

Sample Identification				Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride	Sample Comments
FS24				S	6/18/19	1325	4.5'-5'	1	X	X	X	

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

8RCF

TCLP/SPLP 6010: 8BCBA Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Mo

[illegible]

2 Na Sr Ti Sn U V Zn

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
[Signature]	[Signature]	6/19/19 1640			

Inter-Office Shipment

IOS Number : 41761

Date/Time: 06.19.2019 13:11 Created by: Carlos Castro
 Lab# From: **Carlsbad** Delivery Priority:
 Lab# To: **Midland** Air Bill No.:

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

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628303-001	S	SW15	06.18.2019 09:15	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-001	S	SW15	06.18.2019 09:15	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-001	S	SW15	06.18.2019 09:15	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-002	S	SW16	06.18.2019 09:20	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-002	S	SW16	06.18.2019 09:20	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-002	S	SW16	06.18.2019 09:20	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-003	S	SW17	06.18.2019 09:25	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-003	S	SW17	06.18.2019 09:25	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-003	S	SW17	06.18.2019 09:25	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-004	S	SW18	06.18.2019 09:30	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-004	S	SW18	06.18.2019 09:30	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-004	S	SW18	06.18.2019 09:30	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-005	S	SW19	06.18.2019 09:55	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-005	S	SW19	06.18.2019 09:55	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-005	S	SW19	06.18.2019 09:55	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-006	S	SW20	06.18.2019 10:00	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-006	S	SW20	06.18.2019 10:00	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-006	S	SW20	06.18.2019 10:00	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-007	S	SW21	06.18.2019 10:05	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-007	S	SW21	06.18.2019 10:05	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-007	S	SW21	06.18.2019 10:05	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-008	S	FS11	06.18.2019 11:35	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-008	S	FS11	06.18.2019 11:35	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-008	S	FS11	06.18.2019 11:35	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-009	S	FS12	06.18.2019 11:40	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	

Inter-Office Shipment

IOS Number : 41761

Date/Time: 06.19.2019 13:11 Created by: Carlos Castro
 Lab# From: **Carlsbad** Delivery Priority:
 Lab# To: **Midland** Air Bill No.:

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

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628303-009	S	FS12	06.18.2019 11:40	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-009	S	FS12	06.18.2019 11:40	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-010	S	FS13	06.18.2019 11:45	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-010	S	FS13	06.18.2019 11:45	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-010	S	FS13	06.18.2019 11:45	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-011	S	FS14	06.18.2019 11:50	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-011	S	FS14	06.18.2019 11:50	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-011	S	FS14	06.18.2019 11:50	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-012	S	FS15	06.18.2019 12:10	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-012	S	FS15	06.18.2019 12:10	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-012	S	FS15	06.18.2019 12:10	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-013	S	FS16	06.18.2019 12:15	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-013	S	FS16	06.18.2019 12:15	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-013	S	FS16	06.18.2019 12:15	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-014	S	FS17	06.18.2019 12:20	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-014	S	FS17	06.18.2019 12:20	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-014	S	FS17	06.18.2019 12:20	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-015	S	FS18	06.18.2019 12:25	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-015	S	FS18	06.18.2019 12:25	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-015	S	FS18	06.18.2019 12:25	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-016	S	FS19	06.18.2019 12:50	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C35	
628303-016	S	FS19	06.18.2019 12:50	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-016	S	FS19	06.18.2019 12:50	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-017	S	FS20	06.18.2019 12:55	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-017	S	FS20	06.18.2019 12:55	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	

Inter Office Shipment or Sample Comments:

Inter-Office Shipment

IOS Number : 41761

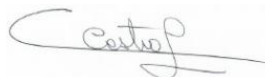
Date/Time: 06.19.2019 13:11 Created by: Carlos Castro
 Lab# From: **Carlsbad** Delivery Priority:
 Lab# To: **Midland** Air Bill No.:

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

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628303-017	S	FS20	06.18.2019 12:55	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C3	
628303-018	S	FS21	06.18.2019 13:00	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C3	
628303-018	S	FS21	06.18.2019 13:00	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-018	S	FS21	06.18.2019 13:00	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-019	S	FS22	06.18.2019 13:05	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-019	S	FS22	06.18.2019 13:05	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C3	
628303-019	S	FS22	06.18.2019 13:05	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-020	S	FS23	06.18.2019 13:20	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	
628303-020	S	FS23	06.18.2019 13:20	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C3	
628303-020	S	FS23	06.18.2019 13:20	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-021	S	FS24	06.18.2019 13:25	SW8021B	BTEX by EPA 8021B	06.21.2019	07.02.2019	JKR	BR4FBZ BZ BZME EBZ	
628303-021	S	FS24	06.18.2019 13:25	SW8015MOD_NM	TPH By SW8015 Mod	06.21.2019	07.02.2019	JKR	PHCC10C28 PHCC28C3	
628303-021	S	FS24	06.18.2019 13:25	E300_CL	Chloride by EPA 300	06.21.2019	12.15.2019	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:



Date Relinquished: Carlos Castro

06.19.2019

Received By:

Date Received:

Cooler Temperature:

Analytical Report 628692

**for
LT Environmental, Inc.**

Project Manager: Dan Moir

ADU 562

29-JUN-19

Collected By: Client



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

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

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

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



29-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **628692**

ADU 562

Project Address: Delaware Basin

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628692. 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. 628692 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'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 628692

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	06-21-19 11:20	1 ft	628692-001
BH01A	S	06-21-19 11:40	4 ft	628692-002
BH05	S	06-21-19 11:55	1 ft	628692-003
BH05A	S	06-21-19 12:10	4 ft	628692-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *ADU 562*

Project ID:
Work Order Number(s): 628692

Report Date: 29-JUN-19
Date Received: 06/21/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093649 BTEX by EPA 8021B

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

Batch: LBA-3093930 BTEX by EPA 8021B

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



Certificate of Analysis Summary 628692

LT Environmental, Inc., Arvada, CO

Project Name: ADU 562

Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Fri Jun-21-19 02:00 pm

Report Date: 29-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	628692-001	628692-002	628692-003	628692-004		
	Field Id:	BH01	BH01A	BH05	BH05A		
	Depth:	1- ft	4- ft	1- ft	4- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Jun-21-19 11:20	Jun-21-19 11:40	Jun-21-19 11:55	Jun-21-19 12:10		
BTEX by EPA 8021B SUB: T104704400-18-16	Extracted:	Jun-27-19 22:10	Jun-27-19 22:10	Jun-27-19 22:10	Jun-25-19 17:00		
	Analyzed:	Jun-28-19 07:29	Jun-28-19 07:52	Jun-28-19 08:15	Jun-27-19 03:02		
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg		
		RL	RL	RL	RL		
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
m,p-Xylenes		<0.00402 0.00402	<0.00401 0.00401	<0.00402 0.00402	<0.00400 0.00400		
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Chloride by EPA 300 SUB: T104704400-18-16	Extracted:	Jun-25-19 09:00	Jun-25-19 09:00	Jun-25-19 09:00	Jun-25-19 09:00		
	Analyzed:	Jun-25-19 10:46	Jun-25-19 10:51	Jun-25-19 10:56	Jun-25-19 11:01		
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg		
Chloride		<4.98 4.98	33.9 5.04	<4.97 4.97	<4.95 4.95		
TPH by SW8015 Mod SUB: T104704400-18-16	Extracted:	Jun-24-19 14:00	Jun-24-19 14:00	Jun-24-19 14:00	Jun-24-19 14:00		
	Analyzed:	Jun-25-19 05:14	Jun-25-19 05:34	Jun-25-19 05:54	Jun-25-19 06:14		
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg		
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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

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

Version: 1.9%

Jessica Kramer
Project Assistant



Certificate of Analytical Results 628692

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH01**
Lab Sample Id: 628692-001

Matrix: Soil
Date Collected: 06.21.19 11.20

Date Received: 06.21.19 14.00
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093393

Date Prep: 06.25.19 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	06.25.19 10.46	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093439

Date Prep: 06.24.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 05.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 05.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 05.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 05.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 05.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.25.19 05.14	
o-Terphenyl	84-15-1	96	%	70-135	06.25.19 05.14	



Certificate of Analytical Results 628692

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH01**
Lab Sample Id: 628692-001

Matrix: Soil
Date Collected: 06.21.19 11.20

Date Received: 06.21.19 14.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093930

Prep Method: SW5030B

% Moisture:

Date Prep: 06.27.19 22.10

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.28.19 07.29	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.28.19 07.29	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.28.19 07.29	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.28.19 07.29	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.28.19 07.29	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.28.19 07.29	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.28.19 07.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	06.28.19 07.29		
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.28.19 07.29		



Certificate of Analytical Results 628692

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH01A**
Lab Sample Id: 628692-002

Matrix: Soil
Date Collected: 06.21.19 11.40

Date Received: 06.21.19 14.00
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093393

Date Prep: 06.25.19 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.9	5.04	mg/kg	06.25.19 10.51		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093439

Date Prep: 06.24.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 05.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 05.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 05.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 05.34	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 05.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.25.19 05.34	
o-Terphenyl	84-15-1	98	%	70-135	06.25.19 05.34	



Certificate of Analytical Results 628692

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH01A**
Lab Sample Id: 628692-002

Matrix: Soil
Date Collected: 06.21.19 11.40

Date Received: 06.21.19 14.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093930

Prep Method: SW5030B

% Moisture:

Date Prep: 06.27.19 22.10

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.28.19 07.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.28.19 07.52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.28.19 07.52	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.28.19 07.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.28.19 07.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.28.19 07.52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.28.19 07.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.28.19 07.52		
4-Bromofluorobenzene	460-00-4	114	%	70-130	06.28.19 07.52		



Certificate of Analytical Results 628692

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH05**
Lab Sample Id: 628692-003

Matrix: Soil
Date Collected: 06.21.19 11.55

Date Received: 06.21.19 14.00
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093393

Date Prep: 06.25.19 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	06.25.19 10.56	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093439

Date Prep: 06.24.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 05.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 05.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 05.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 05.54	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 05.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.25.19 05.54	
o-Terphenyl	84-15-1	94	%	70-135	06.25.19 05.54	



Certificate of Analytical Results 628692

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH05**
Lab Sample Id: 628692-003

Matrix: Soil
Date Collected: 06.21.19 11.55

Date Received: 06.21.19 14.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093930

Prep Method: SW5030B

% Moisture:

Date Prep: 06.27.19 22.10

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.28.19 08.15	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.28.19 08.15	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.28.19 08.15	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.28.19 08.15	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.28.19 08.15	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.28.19 08.15	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.28.19 08.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	06.28.19 08.15		
1,4-Difluorobenzene	540-36-3	96	%	70-130	06.28.19 08.15		



Certificate of Analytical Results 628692

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH05A**
Lab Sample Id: 628692-004

Matrix: Soil
Date Collected: 06.21.19 12.10

Date Received: 06.21.19 14.00
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3093393

Date Prep: 06.25.19 09.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	06.25.19 11.01	U	1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3093439

Date Prep: 06.24.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.25.19 06.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.25.19 06.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.25.19 06.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.25.19 06.14	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.25.19 06.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.25.19 06.14	
o-Terphenyl	84-15-1	97	%	70-135	06.25.19 06.14	



Certificate of Analytical Results 628692

LT Environmental, Inc., Arvada, CO

ADU 562

Sample Id: **BH05A**
Lab Sample Id: 628692-004

Matrix: Soil
Date Collected: 06.21.19 12.10

Date Received: 06.21.19 14.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: DVM

Analyst: DVM

Seq Number: 3093649

Prep Method: SW5030B

% Moisture:

Date Prep: 06.25.19 17.00

Basis: Wet Weight

SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.27.19 03.02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.27.19 03.02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.27.19 03.02	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.27.19 03.02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.27.19 03.02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.27.19 03.02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.27.19 03.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.27.19 03.02		
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.27.19 03.02		

Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



QC Summary 628692

LT Environmental, Inc. ADU 562

Analytical Method: Chloride by EPA 300

Seq Number: 3093393

MB Sample Id: 7680615-1-BLK

Matrix: Solid

LCS Sample Id: 7680615-1-BKS

Prep Method: E300P

Date Prep: 06.25.19

LCSD Sample Id: 7680615-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	263	105	262	105	90-110	0	20	mg/kg	06.25.19 10:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3093393

Parent Sample Id: 628684-002

Matrix: Soil

MS Sample Id: 628684-002 S

Prep Method: E300P

Date Prep: 06.25.19

MSD Sample Id: 628684-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.87	250	292	113	288	111	90-110	1	20	mg/kg	06.25.19 10:36	X

Analytical Method: Chloride by EPA 300

Seq Number: 3093393

Parent Sample Id: 628803-004

Matrix: Soil

MS Sample Id: 628803-004 S

Prep Method: E300P

Date Prep: 06.25.19

MSD Sample Id: 628803-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	432	248	684	102	684	102	90-110	0	20	mg/kg	06.25.19 11:44	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093439

MB Sample Id: 7680675-1-BLK

Matrix: Solid

LCS Sample Id: 7680675-1-BKS

Prep Method: TX1005P

Date Prep: 06.24.19

LCSD Sample Id: 7680675-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1160	116	1150	115	70-135	1	20	mg/kg	06.24.19 21:57	
Diesel Range Organics (DRO)	<8.13	1000	1100	110	1090	109	70-135	1	20	mg/kg	06.24.19 21:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		127		123		70-135	%	06.24.19 21:57
o-Terphenyl	108		112		113		70-135	%	06.24.19 21:57

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

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

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

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



QC Summary 628692

LT Environmental, Inc.

ADU 562

Analytical Method: TPH by SW8015 Mod

Seq Number: 3093439

Parent Sample Id: 628191-001

Matrix: Soil

MS Sample Id: 628191-001 S

Prep Method: TX1005P

Date Prep: 06.24.19

MSD Sample Id: 628191-001 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)	10.8	999	1090	108	1100	109	70-135	1	20	mg/kg	06.24.19 22:59	
Diesel Range Organics (DRO)	<8.12	999	1020	102	1030	103	70-135	1	20	mg/kg	06.24.19 22:59	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		127		70-135	%	06.24.19 22:59
o-Terphenyl	124		126		70-135	%	06.24.19 22:59

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093649

MB Sample Id: 7680760-1-BLK

Matrix: Solid

LCS Sample Id: 7680760-1-BKS

Prep Method: SW5030B

Date Prep: 06.25.19

LCSD Sample Id: 7680760-1-BSD

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

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		96		99		70-130	%	06.26.19 16:56
4-Bromofluorobenzene	103		103		111		70-130	%	06.26.19 16:56

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093930

MB Sample Id: 7681025-1-BLK

Matrix: Solid

LCS Sample Id: 7681025-1-BKS

Prep Method: SW5030B

Date Prep: 06.27.19

LCSD Sample Id: 7681025-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000471	0.100	0.0787	79	0.0890	89	70-130	12	35	mg/kg	06.27.19 22:15	
Toluene	0.000521	0.100	0.0852	85	0.0951	95	70-130	11	35	mg/kg	06.27.19 22:15	
Ethylbenzene	<0.000567	0.100	0.0914	91	0.102	102	70-130	11	35	mg/kg	06.27.19 22:15	
m,p-Xylenes	<0.00102	0.201	0.180	90	0.201	101	70-130	11	35	mg/kg	06.27.19 22:15	
o-Xylene	0.000441	0.100	0.0882	88	0.0981	98	70-130	11	35	mg/kg	06.27.19 22:15	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		93		95		70-130	%	06.27.19 22:15
4-Bromofluorobenzene	106		103		106		70-130	%	06.27.19 22:15

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

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

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

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



QC Summary 628692

LT Environmental, Inc.

ADU 562

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093649

Parent Sample Id: 628191-001

Matrix: Soil

MS Sample Id: 628191-001 S

Prep Method: SW5030B

Date Prep: 06.25.19

MSD Sample Id: 628191-001 SD

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

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		97		70-130	%	06.26.19 17:40
4-Bromofluorobenzene	113		108		70-130	%	06.26.19 17:40

Analytical Method: BTEX by EPA 8021B

Seq Number: 3093930

Parent Sample Id: 628584-001

Matrix: Soil

MS Sample Id: 628584-001 S

Prep Method: SW5030B

Date Prep: 06.27.19

MSD Sample Id: 628584-001 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	0.0906	91	0.0909	91	70-130	0	35	mg/kg	06.28.19 00:18	
Toluene	<0.000453	0.0994	0.0970	98	0.0962	96	70-130	1	35	mg/kg	06.28.19 00:18	
Ethylbenzene	<0.000561	0.0994	0.101	102	0.101	101	70-130	0	35	mg/kg	06.28.19 00:18	
m,p-Xylenes	<0.00101	0.199	0.204	103	0.198	99	70-130	3	35	mg/kg	06.28.19 00:18	
o-Xylene	0.000447	0.0994	0.0972	97	0.0955	95	70-130	2	35	mg/kg	06.28.19 00:18	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		97		70-130	%	06.28.19 00:18
4-Bromofluorobenzene	110		109		70-130	%	06.28.19 00:18

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



www.yenon.com Page 1 of 1

ANALYSIS REQUEST						Work Order Notes
Project Name:		Turn Around				TAT starts the day received by the lab, if received by 4:30pm Sample Comments
Project Number:	Routine ☐					
P.O. Number:	Rush: Yes					
Sampler's Name:	Due Date:					
Garrett Green <td colspan="4"></td> <td></td>						
SAMPLE RECEIPT						
Temperature (°C):	Temp Blank: Yes No	Wet Ice: Yes No				
Received Intact: Yes No	Thermometer ID: TMM007					
Cooler Custody Seals: Yes No	N/A	Correction Factor: -0.2				
Sample Custody Seals: Yes No	N/A	Total Containers: 4				
Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	
BH01	S	6/21/19	1120	1'	✓	
BH01A	S		1140	4'	✓	
BH05	S		1155	1'	✓	
BH05A	S		1210	4'	✓	
Total 2007 / 6010 2008 / 6020.						

2 Na Sr Ti Sn U V Zn
1631 / 245.1 / 7470 / 7471 : Hg

Revised Date 051418 Rev 2018 4



Inter-Office Shipment

Page 1 of 1

IOS Number **42018**

Date/Time: 06/21/19 15:24

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
628692-001	S	BH01	06/21/19 11:20	E300_CL	Chloride by EPA 300	06/24/19	12/18/19	JKR	CL	
628692-001	S	BH01	06/21/19 11:20	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/05/19	JKR	GRO-DRO PHCC10C28 PF	
628692-001	S	BH01	06/21/19 11:20	SW8021B	BTEX by EPA 8021B	06/24/19	07/05/19	JKR	BR4FBZ BZ BZME EBZ X	
628692-002	S	BH01A	06/21/19 11:40	SW8021B	BTEX by EPA 8021B	06/24/19	07/05/19	JKR	BR4FBZ BZ BZME EBZ X	
628692-002	S	BH01A	06/21/19 11:40	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/05/19	JKR	GRO-DRO PHCC10C28 PF	
628692-002	S	BH01A	06/21/19 11:40	E300_CL	Chloride by EPA 300	06/24/19	12/18/19	JKR	CL	
628692-003	S	BH05	06/21/19 11:55	SW8021B	BTEX by EPA 8021B	06/24/19	07/05/19	JKR	BR4FBZ BZ BZME EBZ X	
628692-003	S	BH05	06/21/19 11:55	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/05/19	JKR	GRO-DRO PHCC10C28 PF	
628692-003	S	BH05	06/21/19 11:55	E300_CL	Chloride by EPA 300	06/24/19	12/18/19	JKR	CL	
628692-004	S	BH05A	06/21/19 12:10	SW8021B	BTEX by EPA 8021B	06/24/19	07/05/19	JKR	BR4FBZ BZ BZME EBZ X	
628692-004	S	BH05A	06/21/19 12:10	E300_CL	Chloride by EPA 300	06/24/19	12/18/19	JKR	CL	
628692-004	S	BH05A	06/21/19 12:10	SW8015MOD_NM	TPH by SW8015 Mod	06/24/19	07/05/19	JKR	GRO-DRO PHCC10C28 PF	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Date Relinquished: 06/21/2019

Received By:

Brianna Teel

Date Received: 06/24/2019 07:46

Cooler Temperature: 0.3



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 42018

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 06/21/2019 03:24 PM

Received By: Brianna Teel

Date Received: 06/24/2019 07:46 AM

Sample Receipt Checklist

Comments

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Brianna Teel

Date: 06/24/2019



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06/21/2019 02:00:00 PM

Work Order #: 628692

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)?	26
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 06/21/2019

Checklist reviewed by:


Jessica Kramer

Date: 06/27/2019