

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	NVV2002841074
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.288134 Longitude -103.929552
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	NASH UNIT 302 – 402 H FRAC	Site Type	Well Location
Date Release Discovered	10/17/2019	API# (if applicable)	30-015-45501 (NASH UNIT 302H)

Unit Letter	Section	Township	Range	County
± B	19	23S	30E	EDDY

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls) 0	Volume Recovered (bbls) 0
☒ Produced Water	Volume Released (bbls) 22.87	Volume Recovered (bbls) 10
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: On a transfer line from Nash FRAC Unit developed a leak. Additional third party resources have been retained to assist in the remediation.

Form C-141

State of New Mexico
Oil Conservation Division

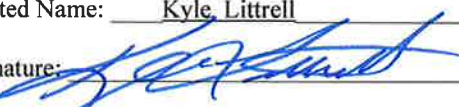
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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? YES - Reported at the beginning as : An unauthorized release of fluid over 25 barrels, after investigation and calculation - Total Release was 22.87 bbls.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? YES, by Amy Ruth : to Mike Bratcher; Rob Hamlet; Victoria Venegas; 'Griswold, Jim, EMNRD'; 'rmann@slo.state.nm.us', blm_nm_cfo_spill@blm.gov	

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>	Title: <u>SH&E Supervisor</u>
Signature: 	Date: <u>1-17-20</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: _____
OCD Only	
Received by: <u>Victoria Venegas</u>	Date: <u>01/28/2020</u>

Location:	NASH UNIT 302H - 402H	
Spill Date:	10/17/2019	
Approximate Area =	1927.00	sq. ft.
Average Saturation (or depth) of spill =	3.00	inches

Average Porosity Factor =	0.15	
Approximate total volume recovered =	10.00	bbls

TOTAL VOLUME OF LEAK		
Total Produced Water =	22.87	bbls

VOLUME RECOVERED		
Total Produced Water =	10.00	bbls

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Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>< 50 (ft bgs)</u>
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☒ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☒ Yes ☐ No

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

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

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

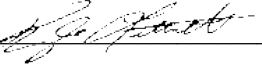
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico
Oil Conservation Division

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 10/9/2020

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

OCD Only

Received by: _____ Date: _____

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Closure

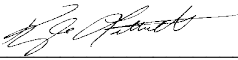
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled 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 OCD 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: 10/09/2020

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: _____



LT Environmental, Inc.

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

October 9, 2020

New Mexico Oil Conservation Division
District 2
811 South First Street
Artesia, New Mexico 88210

**RE: Variance Request
Nash Unit 302-402 H Frac
Incident Number NVV2002841074
Eddy County, New Mexico**

To Whom It May Concern:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Deferral Request detailing site assessment and soil sampling activities at the Nash Unit 302-402H Frac (Site) in Unit B, Section 19, Township 23 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to confirm the presence or absence of impacts to soil following a release of produced water at the Site. Based on field observations, field screening, and laboratory analytical results from soil sampling activities, XTO is submitting this Variance Request, describing remediation that has occurred, public health and safety implications that prevented full remediation, and arguments for equal protection of public health and environment by leaving de minimus concentrations of elevated chloride in place.

RELEASE BACKGROUND

On October 17, 2019, a temporary water transfer line developed a leak, resulting in the release of 22.87 barrels (bbls) of produced water into a pipeline right-of-way (ROW), adjacent pasture, and the intersection of a county highway (Rawhide Road) and lease road. A vacuum truck was immediately dispatched to the Site to recover freestanding fluids, of which approximately 10 bbls of produced water were recovered. XTO reported the release via email on October 25, 2019 to the New Mexico Oil Conservation Division (NMOCD) and subsequently submitted a Release Notification and Corrective Action Form C-141 (Form C-141). NMOCD assigned Incident Number NVV2002841074 on January 28, 2020.

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 less than 50 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater



well with depth to groundwater data is United States Geological Survey (USGS) well 321717103561001, located approximately 0.42 miles west of the Site. The groundwater well has a reported depth to groundwater of 50 feet bgs with an undetermined total depth. Within 2.56 miles, there are two New Mexico Office of the State Engineer (NMOSE) wells and one USGS wells that indicate a regional depth to groundwater between 50 and 100 feet bgs. NMOSE well C-04326 was most recently sampled in May 2019. NMOSE well C-04326 is located 1.5 miles west of the Site and had a reported depth to water of 54 feet bgs. All referenced USGS and NMOSE well records are included in Attachment 1.

The closest continuously flowing water or significant watercourse to the Site is an intermittent stream bed, located approximately 420 feet northeast 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 within an area underlain by unstable geology based on a high potential karst designation area by the Bureau of Land Management (BLM). The Site receptors are identified on Figure 1.

CLOSURE CRITERIA

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

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total Petroleum Hydrocarbons (TPH): 100 mg/kg
- Chloride: 600 mg/kg

SITE ASSESSMENT ACTIVITIES AND SOIL SAMPLING ACTIVITIES

On October 30, 2019, LTE personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. LTE personnel collected preliminary soil assessment samples at four locations (SS01 through SS04) within the most affected area of the pipeline ROW adjacent to the source, along Rawhide Road (a paved county highway), and from the adjacent pasture at a depth of approximately 0.5 feet bgs to assess the lateral extent of the soil. Preliminary soil samples were field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was conducted, and a photographic log is included in Attachment 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 transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

The laboratory analytical results indicated chloride concentrations exceeded the Closure Criteria in preliminary soil samples SS02, SS03, and SS04. Based on visual staining in the release area, field screening results, and laboratory analytical results, soil delineation and excavation appeared to be warranted for the Site.

AFFECTED PIPELINE ROW

Because of the complexities associated with the nearby road and pipelines, LTE divided the site into two areas: the affected pipeline ROW and the road intersection. The following is a summary of the excavation and delineation activities conducted in the ROW. The subsequent section discusses soil sampling conducted in the intersection.

Excavation Activities

All freestanding liquids were recovered off the pavement and any residual produced water would have evaporated as the pavement served as an impenetrable surface for any residual fluids in the majority of this area. Above- and below-ground utilities within other areas of the release footprint, as well as a highly trafficked road, made safe excavation complex. At the southern end of the release near the source, the presence of a 6-inch subsurface high-pressure DCP Midstream (DCP) gas pipeline, Rawhide Road, and intersecting lease road prevented soil removal without major deconstruction of existing infrastructure, rerouting traffic, and/or shutting down the road for deconstruction and subsequent rebuilding. XTO and DCP safety policies prevent mechanical soil removal within 2 feet of active pipelines or utilities. Removing pavement or road base near the pavement affects an engineered roadway owned and operated by Eddy County and prevents access along a major traffic corridor. The safety hazards and potential structural damage associated with soil removal in this area, an estimated 85 square feet of unpaved caliche shoulder, were determined to be too significant for mechanical or hydrovacuum excavation.

From March 13, 2020 through May 22, 2020, LTE oversaw excavation of impacted soil in the remaining spill release footprint. The pipeline ROW west of Rawhide Road contains a 4-inch XTO steel flowline along the ground surface and high-voltage, overhead electrical lines. LTE excavated impacted soil on either side of the flowline and overhead electrical lines using a track-mounted backhoe. The excavation was located directly west of Rawhide Road, a paved county highway. Excavation was not conducted within 2 feet of the flowline or pavement to comply with XTO



safety policy and to protect the structural integrity of the engineered roadway. The excavation outline is presented on Figure 3. Photographic documentation was conducted during excavation activities and a photographic log is included in Attachment 2. Excavation of impacted soil encompassed an area of approximately 4,300 square feet. A total of approximately 1,100 cubic yards of impacted soil were removed during the excavation activities to a maximum depth of 6.5 feet bgs. The impacted soil was transported and properly disposed of at the R360 Facility located in Hobbs, New Mexico.

LTE collected 5-point composite soil samples on a 200 square foot frequency from the sidewalls and floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. A total of 22 composite floor soil samples (FS01 through FS21 and FS11A) were collected at depths ranging from approximately 1 foot to 6.5 feet bgs. A total of 24 composite sidewall samples (SW01 through SW24) were collected at depths ranging from ground surface to 6 feet bgs. The excavation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico.

Laboratory analytical results from excavation confirmation samples indicated chloride concentrations in soil exceeded the Closure Criteria for chloride in sidewall samples SW03, SW05, SW07, SW09, SW11, SW13, and SW15, located immediately adjacent to the steel flowline. Sidewall samples SW16 and SW18 along Rawhide Road also exceeded Closure Criteria for chloride. Chloride concentrations ranged from 617 mg/kg in SW09 to 2,150 mg/kg in SW05. All other sidewall samples and all floor samples were in compliance with the Closure Criteria for benzene, BTEX, TPH, and chloride. The locations of final excavation confirmation soil samples are presented on Figure 3. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 3.

Delineation Activities

Due to the restrictions associated with soil removal, LTE personnel collected samples to delineate the vertical and lateral extent of impacted soil. Four boreholes (BH01 through BH04) were advanced within and around the excavation. Delineation samples collected from boreholes BH01 through BH02 were collected within the excavation to define the vertical extent of elevated chloride concentrations in the vicinity of failing sidewall samples at the steel flowline. Boreholes BH03 through BH04 were collected directly north and south, respectively, to laterally delineate impacts around the unexcavated areas near the flowline. Soil from the boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each delineation soil sample were logged on lithologic/soil sampling logs, which are included in Attachment 4. The locations of delineation boreholes (BH01-BH04) are presented on Figure 4. The discrete delineation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico.



Laboratory analytical results show that benzene BTEX, TPH, and chloride are compliant with the Closure Criteria in delineation soil samples BH01 through BH04 ranging from 4 to 6 feet bgs. Shallow and deep samples collected from boreholes BH03 and BH04 were in compliance with Closure Criteria. Samples collected from BH01 and BH02 at depths less than 4 feet documented similar chloride concentrations (811 mg/kg to 1,620 mg/kg) as the exceeding sidewall samples.

In the areas of sidewall samples SW03, SW05, SW07, SW09, SW11, SW13, and SW15 at depths ranging from ground surface to 6 feet bgs, an estimated 98 cubic yards of impacted soil remain in the 2 feet immediately adjacent to the steel gas surface flowline, assuming a maximum depth of 6 feet bgs as indicated by delineation soil sample BH01 and BH02 at 6 feet bgs. This area is delineated laterally by delineation soil samples BH03 to the north, BH04, to the south, and to the east and west by excavation confirmation samples. Further excavation of this area was limited by the steel flowline. The area is depicted on Figure 4. The southern portion of the excavation is addressed with the road intersection in the subsequent section of this report.

ROAD INTERSECTION

The majority of the release remained on paved portions of Rawhide Road. Fluids were either removed via vacuum truck or evaporated from the impermeable asphalt. From May 23, 2020 through June 6, 2020 five potholes, PH01 through PH05, were advanced to a maximum depth of approximately 4 feet bgs within the unpaved lease road and unpaved edges of Rawhide Road to delineate potential impacts to the road base or the subsurface below the unpaved road base. Two discrete soil samples were collected from each pothole utilizing a track-mounted backhoe. Delineation soil samples were collected at 1 and 4 feet bgs in pothole samples PH01, PH03, and PH05, 2 and 4 feet bgs in pothole sample PH02, and 2 and 2.5 feet bgs in pothole sample PH04. Field screening results and observations for each pothole were logged on lithologic/soil sampling logs, which are included in Attachment 4. Pothole locations are presented on Figure 5. The discrete delineation soil samples were collected, handled, and analyzed as described above at Xenco in Carlsbad, New Mexico.

Delineation samples PH01, PH02 and PH03 were collected within the release extent on the edge of the intersection. The soil samples from those potholes contained elevated chloride concentrations near the surface at PH01 and PH03 and at four feet bgs in PH02 and PH03. Depths greater than 4 feet could not be achieved without compromising the structural integrity of the road.

Delineation samples PH04 and PH05 were collected between 50 to 100 feet away from the release extent to characterize chloride concentrations in unaffected portions of the road base and subsurface. Laboratory analytical results indicated chloride is present in the road base and under the road base material at concentrations ranging from 88.5 mg/kg to 1,880 mg/kg. In PH04, bedrock was encountered at approximately 2.5 feet bgs, resulting in refusal. Soil sample locations



are depicted on Figure 5 and analytical data are presented in Table 1. The laboratory analytical reports are included in Attachment 3.

Chloride concentrations observed in soil samples collected from potholes placed within and outside of the release extent on the unpaved portions of the lease road and Rawhide Road contain similar chloride concentrations. Soil samples collected from PH04 and PH05 (outside the release extent) are as high as 1,880 mg/kg. Soil samples collected from PH02, PH03, and at 4 feet bgs in PH01 contain chloride concentrations that do not exceed this range. The highest concentration detected in those samples was 1,220 mg/kg in PH03 at 4 feet bgs. The chloride concentration in soil sample PH01, which was collected from 1 foot bgs near the release location, is the only sample from the road that is higher (2,150 mg/kg). LTE believes the chloride concentrations observed in all pothole samples, except the shallow sample from PH01, were not caused by the release, but likely due to source material used to build the roads and/or frequent spraying to mitigate dust and weeds.

Elevated chloride concentrations were observed in the roadbase material and subsurface along the edge of Rawhide Road and within the lease road. Due to the similar concentrations observed within and around the release extent, LTE and XTO believe the majority of the observed chloride concentrations next to the road, as represented by excavation sidewall samples SW16 and SW18, soil samples collected in PH02 and PH03, and the deeper sample in PH01, are characteristic of the source material used to construct the road and/or the result of dust suppression and weed spraying activities conducted along the lease road. Elevated chloride concentrations in shallow soil at PH01 near the release is higher and likely associated with the release.

VARIANCE REQUEST

XTO requests a variance to leave the elevated chloride concentrations in place. This includes the impacted soil immediately at the gas pipeline in the ROW as identified on Figure 4 and at the source near PH01 at 1 foot bgs (Figure 5). LTE and XTO believe the variance request is equally protective of public health and environment. The concentration in PH01 near the source is highest at 2,150 mg/kg and exists in material that already contains elevated chloride up to 1,880 mg/kg. The concentrations remaining in the pipeline ROW near the road (SW16 and SW18) are lower and within range of existing concentrations identified in unaffected areas of the road. Vegetation is not currently growing in the road at PH01 and will not be affected. The limited remaining material in the pipeline ROW is restricted to the area immediately adjacent to the pipelines, where vegetation is also limited. The elevated chloride is present in compacted roadbase material that is unlikely to facilitate rapid or significant migration of the limited remaining chloride ions. It appears from subsurface investigation in other areas of the release that a competent bedrock exists near the shallow subsurface. This competent bedrock will provide another impediment to vertical migration in the road area and in the pipeline ROW. Finally, removal of the small area of impacted soil is far more dangerous to public health and safety based on the significant heavy truck traffic and presence of active gas pipelines. Both XTO

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and DCP restrict mechanical soil removal in these conditions as part of their regular safety program to mitigate risk to human workers as well as drivers and passengers using the road. Hydrovacuum removal has already occurred near the pipeline. Hydrovacuum removal immediately adjacent to the road would result in deterioration of road conditions. The safety implications of soil removal appear to outweigh the risk to groundwater and vegetation in this circumstance.

CONCLUSION

XTO has attempted to remove impacted soil caused by the produced water release to the maximum extent practical in a complicated environment characterized by heavy traffic, paved and unpaved roads, and active subsurface and aboveground utilities. The risk to human health and safety has been balanced with protection of the environment and remaining chloride impacts do not appear to be a significant risk to groundwater or vegetation. Based on the arguments provided in this report, XTO requests a variance to leave impacted soil that was unsafe to remove in place and conduct no further action for this Site.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Robert D. McAfee
Staff Environmental Scientist

Ashely L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
United States Bureau of Land Management – New Mexico
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Attachments:

Figure 1	Site Receptor Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Figure 4	Pipeline Right of Way Soil Sample Locations
Figure 5	Road Intersection Soil Sample Locations

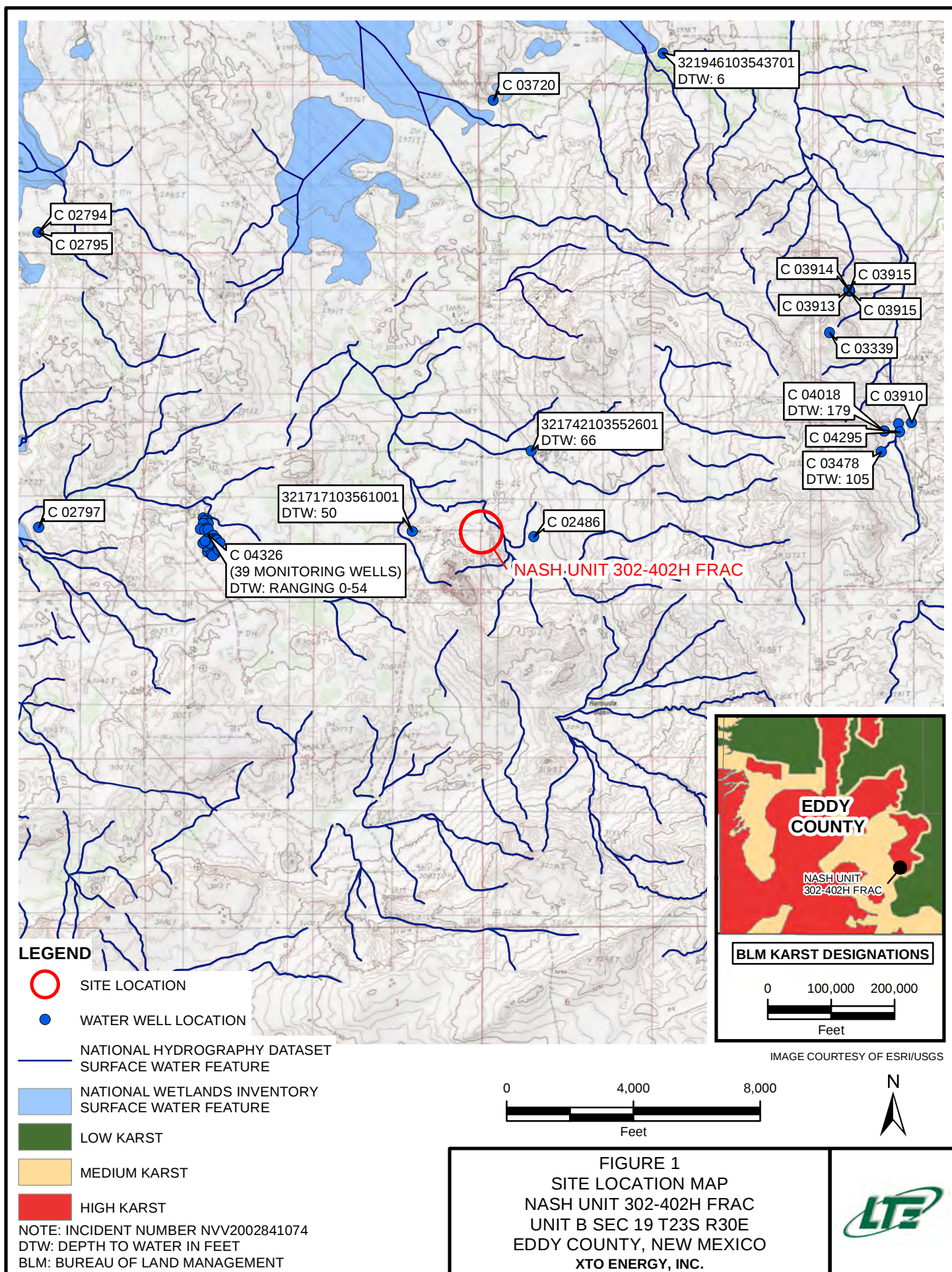


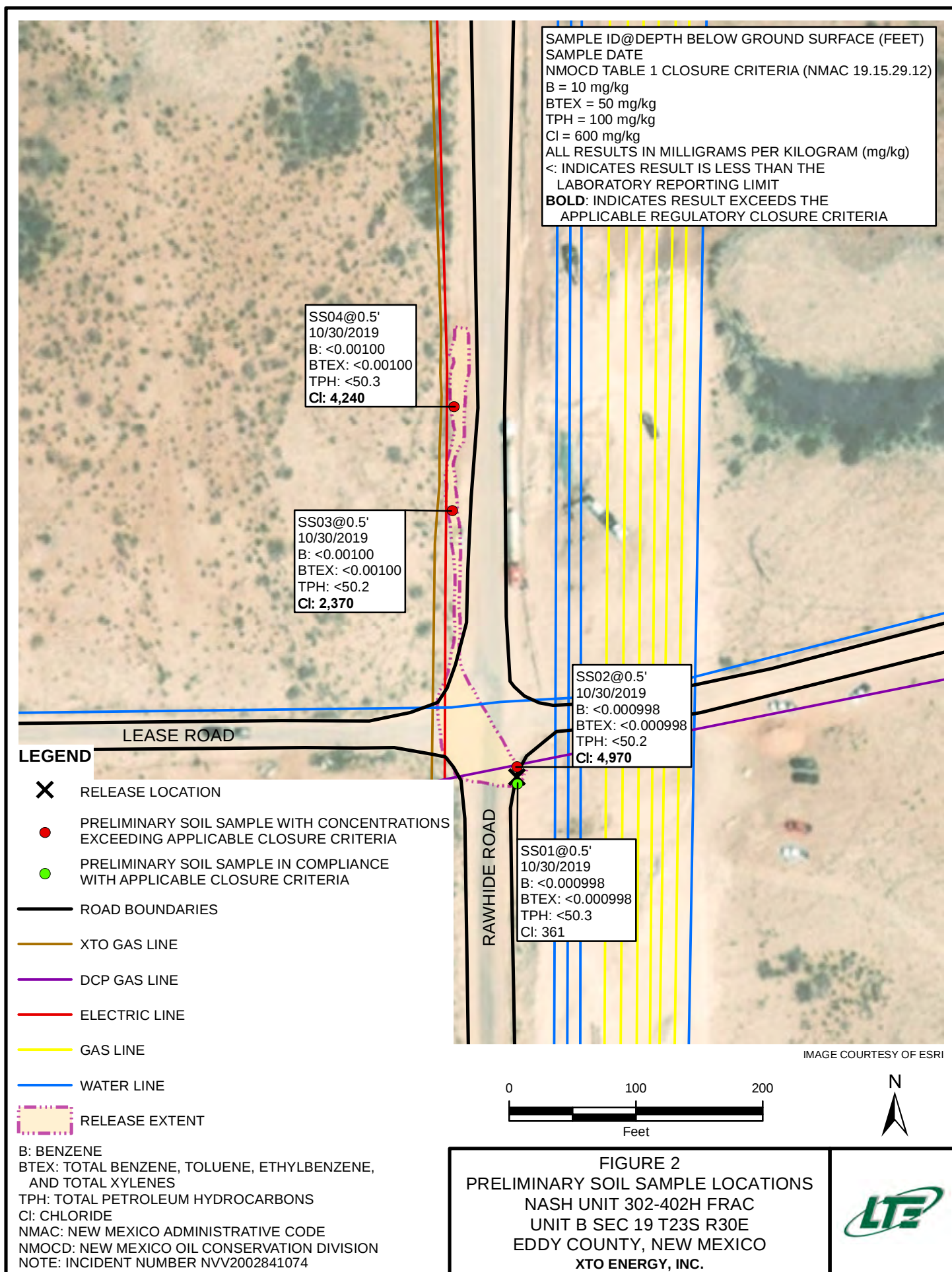
District 2
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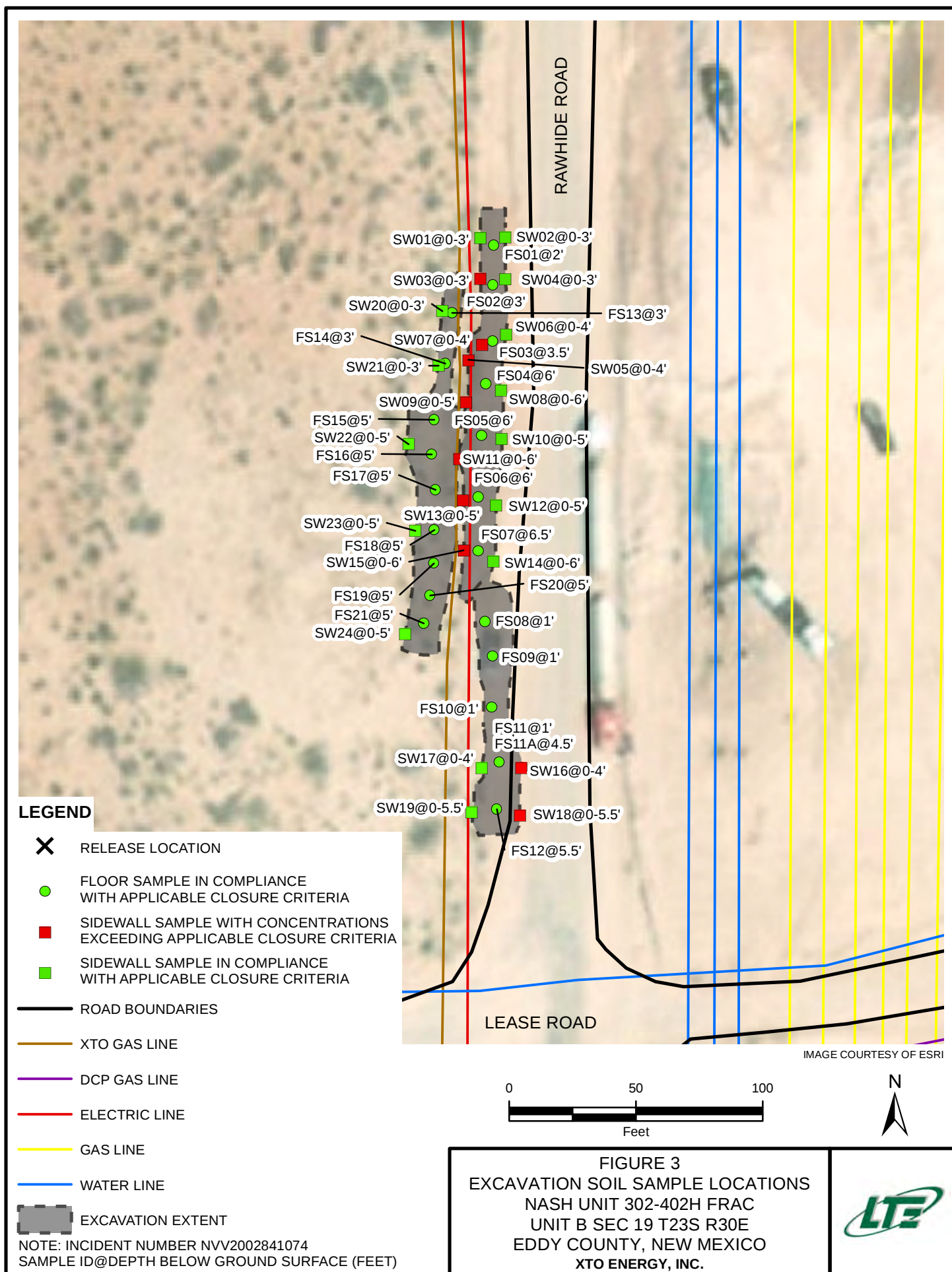
Table 1	Soil Analytical Results
Attachment 1	Reference Well Records
Attachment 2	Photographic Log
Attachment 3	Laboratory Analytical Report
Attachment 4	Lithologic/Soil Sampling Logs

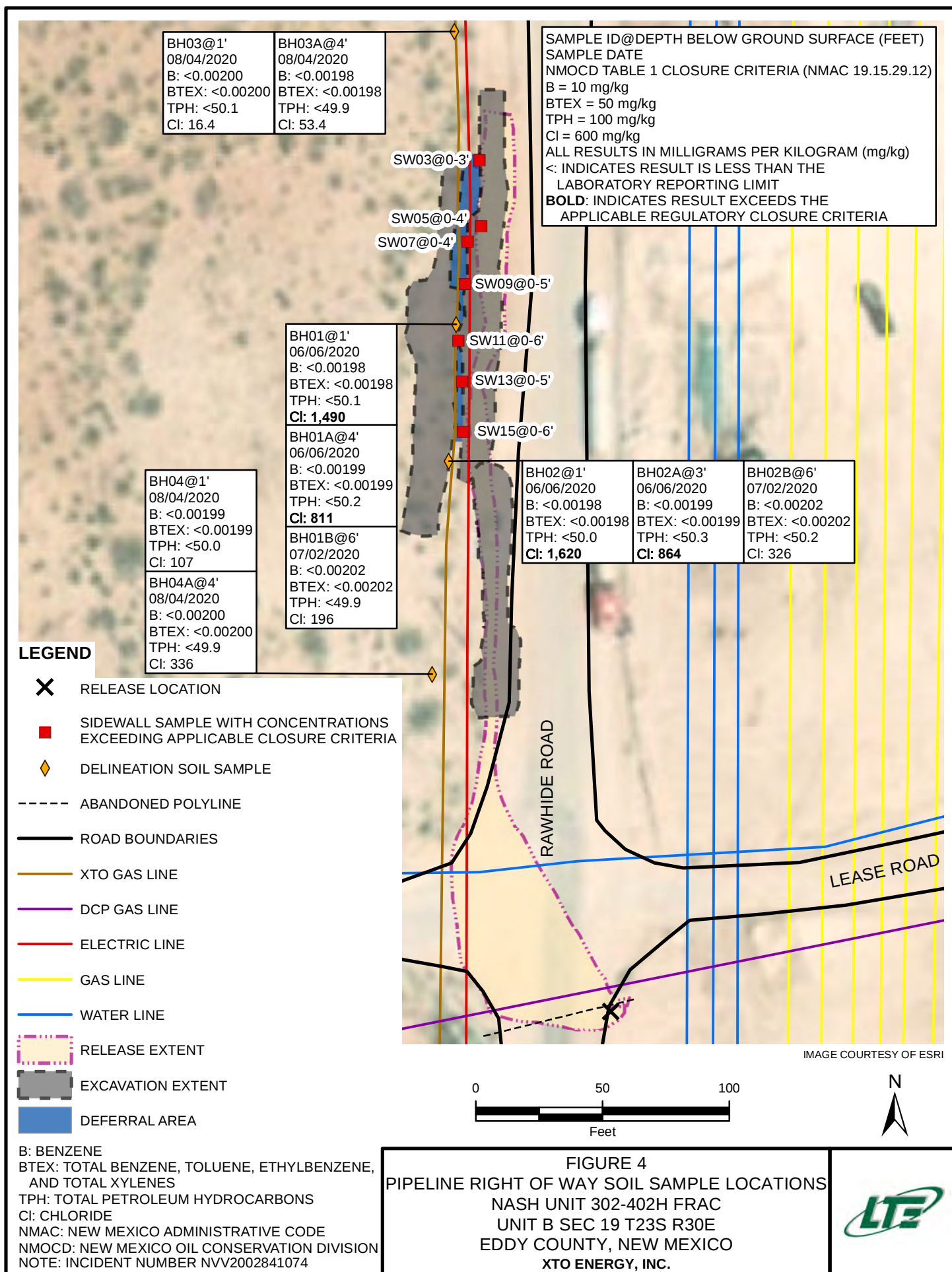
FIGURES

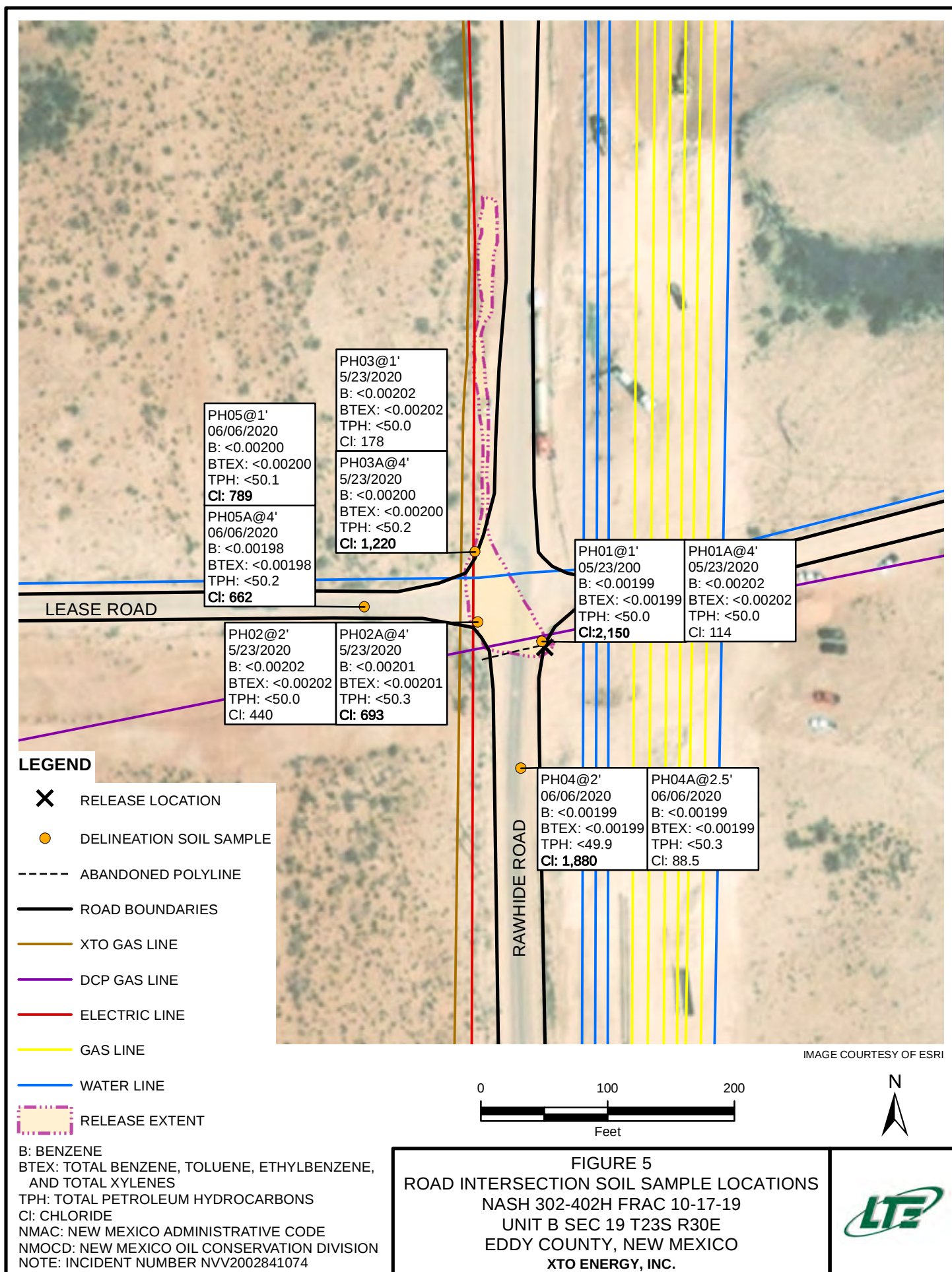












TABLES



**TABLE 1
SOIL ANALYTICAL RESULTS**

**NASH UNIT 302-402 H FRAC
INCIDENT ID NVV2002841074
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.**

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
SS01	0.5	10/30/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.3	<50.3	<50.3	<50.3	<50.3	361
SS02	0.5	10/30/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.2	<50.2	<50.2	<50.2	<50.2	4,970
SS03	0.5	10/30/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	2,370
SS04	0.5	10/30/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	4,240
BH01	1	06/06/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	1,490
BH01A	4	06/06/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	811
BH01B	6	07/02/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	196
BH02	1	06/06/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	1,620
BH02A	3	06/06/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.3	<50.3	<50.3	<50.3	<50.3	864
BH02B	6	07/02/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	326
BH03	1	08/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	16.4
BH03A	4	08/04/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	53.4
BH04	1	08/04/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	107
BH04A	4	08/04/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	336
PH01	1	05/23/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	2,150
PH01A	4	05/23/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	114
PH02	2	05/23/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	440
PH02A	4	05/23/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	693
PH03	1	05/23/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	178
PH03A	4	05/23/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	1,220
PH04	2	06/06/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	1,880
PH04A	2.5	06/06/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.3	<50.3	<50.3	<50.3	<50.3	88.5
PH05	1	06/06/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	789
PH05A	4	06/06/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	662
FS01	2	03/21/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	424
FS02	3	03/21/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	108

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SOIL ANALYTICAL RESULTS**

**NASH UNIT 302-402 H FRAC
INCIDENT ID NVV2002841074
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Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
FS03	3.5	03/21/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	214
FS04	6	03/28/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	526
FS05	6	03/28/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	472
FS06	6	04/18/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	404
FS07	6.5	04/18/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	425
FS08	1	04/25/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	176
FS09	1	04/25/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	98.4
FS10	1	04/25/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	354
FS11	1.5	04/25/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	777
FS11A	4.5	05/09/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	78.4
FS12	5.5	05/09/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	159
FS13	3	05/17/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	21.5
FS14	3	05/17/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	342
FS15	5	05/22/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	413
FS16	5	05/22/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	284
FS17	5	05/22/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	168
FS18	5	05/22/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	99.0
FS19	5	05/22/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	377
FS20	5	05/22/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	261
FS21	5	05/22/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	158
SW01	0 - 3	03/21/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	502
SW02	0 - 3	03/21/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	53.3
SW03	0 - 3	03/21/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	696
SW04	0 - 3	03/21/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	159
SW05	0 - 4	03/21/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	2,150
SW06	0 - 4	03/21/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	137

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Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCDD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600
SW07	0 - 4	03/28/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	1,520
SW08	0 - 6	03/28/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	594
SW09	0 - 5	03/28/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	617
SW10	0 - 5	03/28/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	234
SW11	0 - 6	03/28/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	858
SW12	0 - 5.5	04/18/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	115
SW13	0 - 5.5	04/18/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	1,070
SW14	0 - 6	04/18/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	184
SW15	0 - 6	04/18/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	876
SW16	0 - 4	05/09/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	1,150
SW17	0 - 4	05/09/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	289
SW18	0 - 5.5	05/09/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	1,540
SW19	0 - 5.5	05/09/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	427
SW20	0 - 3	05/17/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	28.7
SW21	0 - 3	05/17/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	320
SW22	0 - 5	05/22/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	349
SW23	0 - 5	05/22/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	155
SW24	0 - 5	05/22/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	168

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

NMOCDD - New Mexico Oil Conservation Division

mg/kg - milligrams per kilogram

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

NE - not established

TPH - total petroleum hydrocarbons

ATTACHMENT 1: REFERENCE WELL RECORDS





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- 321717103561001

Minimum number of levels = 1

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USGS 321717103561001 23S.29E.24.41321

Available data for this site Groundwater: Field measurements GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°17'17", Longitude 103°56'10" NAD27

Land-surface elevation 3,034 feet above NAVD88

This well is completed in the Rustler Formation (312RSLR) local aquifer.

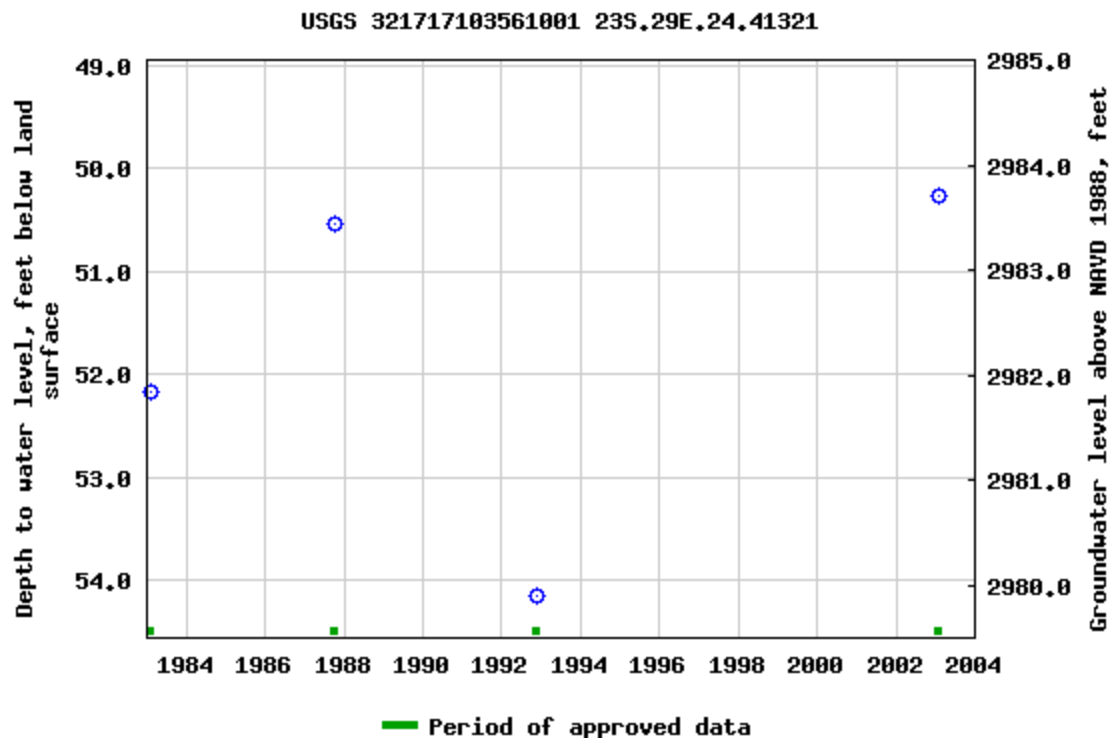
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Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°17'42", Longitude 103°55'26" NAD27

Land-surface elevation 3,034 feet above NAVD88

The depth of the well is 100 feet below land surface.

This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

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 Graph of groundwater level data at USGS 321742103552601 23S.30E.19.123421

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- 321946103543701

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USGS 321946103543701 23S.30E.06.42430

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°19'46", Longitude 103°54'37" NAD27

Land-surface elevation 2,992 feet above NAVD88

The depth of the well is 30 feet below land surface.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

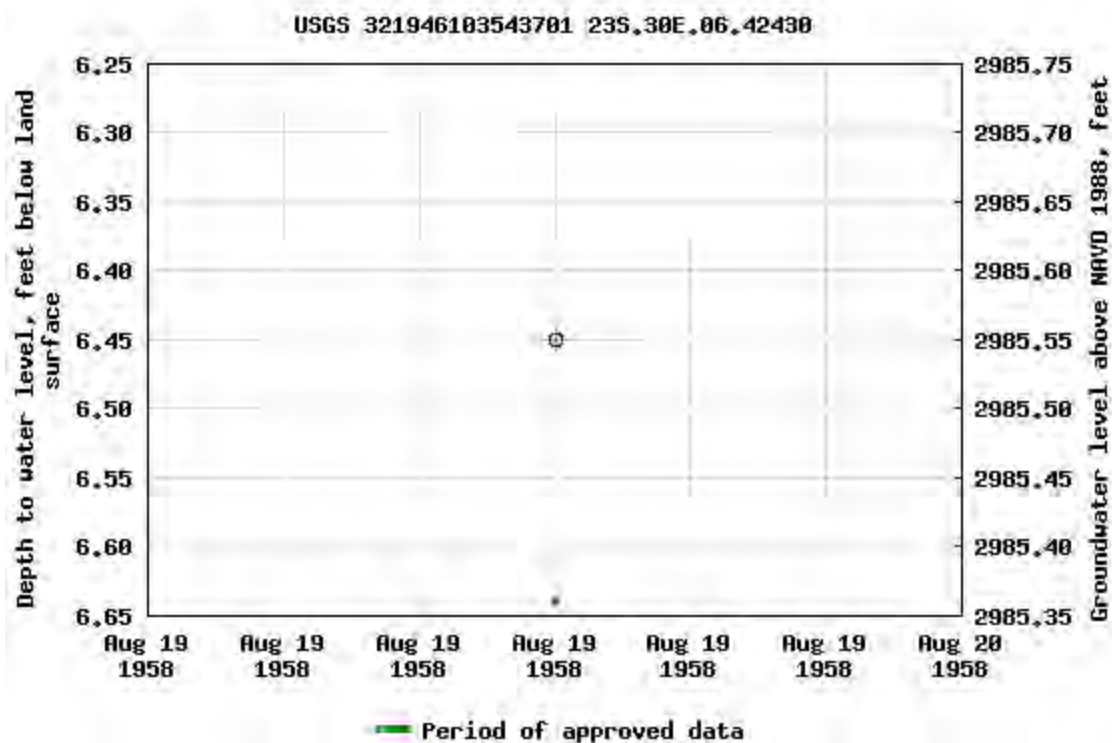
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0.69 0.6 nadww01



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04326 POD14	4	2	3	23	23S	29E	598191	3572765
Driller License:	1664	Driller Company:			CASCADE DRILLING, LP				
Driller Name:	CAIN, SHAWN N.NJR.L.NER								
Drill Start Date:	05/11/2019	Drill Finish Date:			05/11/2019		Plug Date:		
Log File Date:	08/28/2019	PCW Rcv Date:					Source:		Shallow
Pump Type:		Pipe Discharge Size:					Estimated Yield:		
Casing Size:	2.06	Depth Well:			58 feet		Depth Water:		54 feet
Water Bearing Stratifications:					Top	Bottom	Description		
					45	54	Shale/Mudstone/Siltstone		
Casing Perforations:					Top	Bottom			
					48	58			

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POINT OF DIVERSION SUMMARY



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04326 POD16	2	4	3	23	23S	29E	598209	3572664
Driller License:	1664	Driller Company:				CASCADE DRILLING, LP			
Driller Name:	CAIN, SHAWN N.NJR.L.NER								
Drill Start Date:	05/14/2019	Drill Finish Date:				05/14/2019		Plug Date:	
Log File Date:	08/28/2019	PCW Rcv Date:						Source:	Shallow
Pump Type:		Pipe Discharge Size:						Estimated Yield:	
Casing Size:	2.07	Depth Well:				64 feet		Depth Water:	54 feet
Water Bearing Stratifications:					Top	Bottom	Description		
					52	60	Limestone/Dolomite/Chalk		
Casing Perforations:					Top	Bottom			
					54	64			

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

7/13/20 3:14 PM

POINT OF DIVERSION SUMMARY



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	C 03478 POD1	3	2	1	21	23S	30E	604638	3573670
Driller License:		Driller Company:							
Driller Name:		JUSTIN MULLINS							
Drill Start Date:	06/07/2016	Drill Finish Date:				06/27/2016		Plug Date:	
Log File Date:	07/11/2016	PCW Rcv Date:						Source:	Shallow
Pump Type:		Pipe Discharge Size:						Estimated Yield:	5 GPM
Casing Size:	6.00	Depth Well:				230 feet		Depth Water:	105 feet
Water Bearing Stratifications:		Top	Bottom	Description					
		105	112	Shale/Mudstone/Siltstone					
Casing Perforations:		Top	Bottom						
		170	230						

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

7/13/20 3:12 PM

POINT OF DIVERSION SUMMARY



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04018 POD1	2	2	1	21	23S	30E	604664	3573868
Driller License:	1737	Driller Company:		SHADE TREE DRILLING					
Driller Name:	JUSTIN MULLINS								
Drill Start Date:	03/24/2017	Drill Finish Date:		03/28/2017		Plug Date:			
Log File Date:	09/11/2017	PCW Rcv Date:				Source:		Shallow	
Pump Type:		Pipe Discharge Size:				Estimated Yield:		65 GPM	
Casing Size:	8.00	Depth Well:		380 feet		Depth Water:		179 feet	
Water Bearing Stratifications:					Top	Bottom	Description		
					170	180	Other/Unknown		
					190	223	Sandstone/Gravel/Conglomerate		
Casing Perforations:					Top	Bottom			
					120	140			
					180	200			
					220	240			
					260	360			

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

7/13/20 3:12 PM

POINT OF DIVERSION SUMMARY

ATTACHMENT 2: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



Photograph 1: Eastern overview of release and release point.



Photograph 2: Northern view of release area adjacent to Rawhide Road shoulder



Photograph 3: Southern view of excavation adjacent to Rawhide Road.



Photograph 4: Southern view of backfilled excavation adjacent to Rawhide Road.

PHOTOGRAPHIC LOG



Photograph 5: Southern view of bedrock and boulders in excavation adjacent to Rawhide Road.



Photograph 6: Northern view of excavation in the pasture adjacent to steel gas flowline.



Photograph 7: Southern view of excavation in the pasture adjacent to steel gas flowline.



Photograph 8: Caliche observed in a pothole advanced in the lease road at PH05.

ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS



Analytical Report 641591

for
LT Environmental, Inc.

Project Manager: Dan Moir

Nash 302-402H 10/17/19

31-OCT-19

Collected By: Client



1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

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



31-OCT-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **641591**

Nash 302-402H 10/17/19

Project Address: Eddy County

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 641591. 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. 641591 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 641591

LT Environmental, Inc., Arvada, CO

Nash 302-402H 10/17/19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	10-30-19 11:50	0.5 ft	641591-001
SS02	S	10-30-19 11:55	0.5 ft	641591-002
SS03	S	10-30-19 12:00	0.5 ft	641591-003
SS04	S	10-30-19 12:05	0.5 ft	641591-004



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Nash 302-402H 10/17/19

Project ID:
Work Order Number(s): 641591

Report Date: 31-OCT-19
Date Received: 10/30/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3105990 BTEX by EPA 8021B

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

Batch: LBA-3106000 TPH by SW8015 Mod

Motor Oil Range Hydrocarbons (MRO) RPD was outside laboratory control limits.

Samples in the analytical batch are: 641591-001, -002, -003, -004

Certificate of Analysis Summary 641591



LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H 10/17/19

Project Id:

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Wed Oct-30-19 02:56 pm

Report Date: 31-OCT-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	641591-001	641591-002	641591-003	641591-004		
	<i>Field Id:</i>	SS01	SS02	SS03	SS04		
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Oct-30-19 11:50	Oct-30-19 11:55	Oct-30-19 12:00	Oct-30-19 12:05		
BTEX by EPA 8021B	<i>Extracted:</i>	*** ** *	*** ** *	*** ** *	*** ** *		
	<i>Analyzed:</i>	Oct-30-19 22:14	Oct-30-19 22:34	Oct-30-19 22:55	Oct-30-19 23:15		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100		
Toluene		<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100		
Ethylbenzene		<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100		
m,p-Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200		
o-Xylene		<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100		
Total Xylenes		<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100		
Total BTEX		<0.000998 0.000998	<0.000998 0.000998	<0.00100 0.00100	<0.00100 0.00100		
Chloride by EPA 300	<i>Extracted:</i>	Oct-30-19 16:10	Oct-30-19 16:10	Oct-30-19 16:10	Oct-30-19 16:10		
	<i>Analyzed:</i>	Oct-30-19 17:06	Oct-30-19 17:12	Oct-30-19 17:18	Oct-30-19 17:25		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		361 50.6	4970 201	2370 501	4240 499		
TPH by SW8015 Mod	<i>Extracted:</i>	Oct-30-19 15:30	Oct-30-19 15:30	Oct-30-19 15:30	Oct-30-19 15:30		
	<i>Analyzed:</i>	Oct-30-19 19:33	Oct-30-19 19:53	Oct-30-19 19:53	Oct-30-19 20:13		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.3 50.3		
Diesel Range Organics (DRO)		<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.3 50.3		
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.3 50.3		
Total GRO-DRO		<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.3 50.3		
Total TPH		<50.3 50.3	<50.2 50.2	<50.2 50.2	<50.3 50.3		

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 641591

LT Environmental, Inc., Arvada, CO

Nash 302-402H 10/17/19

Sample Id: **SS01**
Lab Sample Id: 641591-001

Matrix: Soil
Date Collected: 10.30.19 11.50

Date Received: 10.30.19 14.56
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105981

Date Prep: 10.30.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	361	50.6	mg/kg	10.30.19 17.06		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106000

Date Prep: 10.30.19 15.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.30.19 19.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.30.19 19.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.30.19 19.33	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.30.19 19.33	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.30.19 19.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	10.30.19 19.33	
o-Terphenyl	84-15-1	110	%	70-135	10.30.19 19.33	



Certificate of Analytical Results 641591

LT Environmental, Inc., Arvada, CO

Nash 302-402H 10/17/19

Sample Id: **SS01**
Lab Sample Id: 641591-001

Matrix: Soil
Date Collected: 10.30.19 11.50

Date Received: 10.30.19 14.56
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.30.19 09.10

Basis: Wet Weight

Seq Number: 3105990

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	10.30.19 22.14	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	10.30.19 22.14	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	10.30.19 22.14	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.30.19 22.14	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	10.30.19 22.14	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	10.30.19 22.14	U	1
Total BTEX		<0.000998	0.000998	mg/kg	10.30.19 22.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	10.30.19 22.14		
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.30.19 22.14		



Certificate of Analytical Results 641591

LT Environmental, Inc., Arvada, CO

Nash 302-402H 10/17/19

Sample Id: SS02
Lab Sample Id: 641591-002

Matrix: Soil
Date Collected: 10.30.19 11.55

Date Received: 10.30.19 14.56
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105981

Date Prep: 10.30.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4970	201	mg/kg	10.30.19 17.12		20

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106000

Date Prep: 10.30.19 15.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.30.19 19.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.30.19 19.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.30.19 19.53	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.30.19 19.53	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.30.19 19.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	10.30.19 19.53	
o-Terphenyl	84-15-1	111	%	70-135	10.30.19 19.53	



Certificate of Analytical Results 641591

LT Environmental, Inc., Arvada, CO

Nash 302-402H 10/17/19

Sample Id: SS02
Lab Sample Id: 641591-002

Matrix: Soil
Date Collected: 10.30.19 11.55

Date Received: 10.30.19 14.56
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.30.19 09.10

Basis: Wet Weight

Seq Number: 3105990

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	10.30.19 22.34	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	10.30.19 22.34	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	10.30.19 22.34	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.30.19 22.34	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	10.30.19 22.34	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	10.30.19 22.34	U	1
Total BTEX		<0.000998	0.000998	mg/kg	10.30.19 22.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.30.19 22.34		
4-Bromofluorobenzene	460-00-4	110	%	70-130	10.30.19 22.34		



Certificate of Analytical Results 641591

LT Environmental, Inc., Arvada, CO

Nash 302-402H 10/17/19

Sample Id: SS03
Lab Sample Id: 641591-003

Matrix: Soil
Date Collected: 10.30.19 12.00

Date Received: 10.30.19 14.56
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105981

Date Prep: 10.30.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2370	501	mg/kg	10.30.19 17.18		50

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106000

Date Prep: 10.30.19 15.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.30.19 19.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.30.19 19.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.30.19 19.53	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.30.19 19.53	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.30.19 19.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	10.30.19 19.53	
o-Terphenyl	84-15-1	110	%	70-135	10.30.19 19.53	



Certificate of Analytical Results 641591

LT Environmental, Inc., Arvada, CO

Nash 302-402H 10/17/19

Sample Id: SS03
Lab Sample Id: 641591-003

Matrix: Soil
Date Collected: 10.30.19 12.00

Date Received: 10.30.19 14.56
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.30.19 09.10

Basis: Wet Weight

Seq Number: 3105990

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.30.19 22.55	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.30.19 22.55	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.30.19 22.55	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.30.19 22.55	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.30.19 22.55	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.30.19 22.55	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.30.19 22.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	10.30.19 22.55		
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.30.19 22.55		



Certificate of Analytical Results 641591

LT Environmental, Inc., Arvada, CO

Nash 302-402H 10/17/19

Sample Id: **SS04**
Lab Sample Id: 641591-004

Matrix: Soil
Date Collected: 10.30.19 12.05

Date Received: 10.30.19 14.56
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3105981

Date Prep: 10.30.19 16.10

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4240	499	mg/kg	10.30.19 17.25		50

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3106000

Date Prep: 10.30.19 15.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.30.19 20.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.30.19 20.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.30.19 20.13	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.30.19 20.13	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.30.19 20.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	10.30.19 20.13	
o-Terphenyl	84-15-1	112	%	70-135	10.30.19 20.13	



Certificate of Analytical Results 641591

LT Environmental, Inc., Arvada, CO

Nash 302-402H 10/17/19

Sample Id: **SS04**
Lab Sample Id: 641591-004

Matrix: Soil
Date Collected: 10.30.19 12.05

Date Received: 10.30.19 14.56
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 10.30.19 09.10

Basis: Wet Weight

Seq Number: 3105990

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.30.19 23.15	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.30.19 23.15	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.30.19 23.15	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.30.19 23.15	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.30.19 23.15	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.30.19 23.15	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.30.19 23.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	10.30.19 23.15		
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.30.19 23.15		



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



LT Environmental, Inc.

Nash 302-402H 10/17/19

Analytical Method: Chloride by EPA 300

Seq Number: 3105981

MB Sample Id: 7689261-1-BLK

Matrix: Solid

LCS Sample Id: 7689261-1-BKS

Prep Method: E300P

Date Prep: 10.30.19

LCSD Sample Id: 7689261-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	261	104	263	105	90-110	1	20	mg/kg	10.30.19 14:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3105981

Parent Sample Id: 641581-001

Matrix: Soil

MS Sample Id: 641581-001 S

Prep Method: E300P

Date Prep: 10.30.19

MSD Sample Id: 641581-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	170	247	427	104	433	106	90-110	1	20	mg/kg	10.30.19 16:09	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106000

MB Sample Id: 7689264-1-BLK

Matrix: Solid

LCS Sample Id: 7689264-1-BKS

Prep Method: SW8015P

Date Prep: 10.30.19

LCSD Sample Id: 7689264-1-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)	17.0	1000	859	86	870	87	70-135	1	35	mg/kg	10.30.19 17:54	
Diesel Range Organics (DRO)	36.4	1000	838	84	754	75	70-135	11	35	mg/kg	10.30.19 17:54	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag		LCSD %Rec	LCSD Flag	Limits		Units	Analysis Date	
1-Chlorooctane	134		134			134		70-135		%	10.30.19 17:54	
o-Terphenyl	127		126			130		70-135		%	10.30.19 17:54	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106000

Matrix: Solid

MB Sample Id: 7689264-1-BLK

Prep Method: SW8015P

Date Prep: 10.30.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.30.19 17:54	

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

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

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

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



LT Environmental, Inc.

Nash 302-402H 10/17/19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3106000

Parent Sample Id: 641581-001

Matrix: Soil

MS Sample Id: 641581-001 S

Prep Method: SW8015P

Date Prep: 10.30.19

MSD Sample Id: 641581-001 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)	30.0	993	822	80	760	74	70-135	8	35	mg/kg	10.30.19 18:34	
Diesel Range Organics (DRO)	2160	993	2870	72	2710	55	70-135	6	35	mg/kg	10.30.19 18:34	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	131		125		70-135	%	10.30.19 18:34
o-Terphenyl	134		124		70-135	%	10.30.19 18:34

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105990

MB Sample Id: 7689287-1-BLK

Matrix: Solid

LCS Sample Id: 7689287-1-BKS

Prep Method: SW5030B

Date Prep: 10.30.19

LCSD Sample Id: 7689287-1-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	0.100	0.105	105	0.102	102	70-130	3	35	mg/kg	10.30.19 17:41	
Toluene	<0.00100	0.100	0.106	106	0.104	104	70-130	2	35	mg/kg	10.30.19 17:41	
Ethylbenzene	<0.00100	0.100	0.111	111	0.110	110	71-129	1	35	mg/kg	10.30.19 17:41	
m,p-Xylenes	<0.00200	0.200	0.226	113	0.225	113	70-135	0	35	mg/kg	10.30.19 17:41	
o-Xylene	<0.00100	0.100	0.112	112	0.111	111	71-133	1	35	mg/kg	10.30.19 17:41	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		99		100		70-130	%	10.30.19 17:41
4-Bromofluorobenzene	109		107		111		70-130	%	10.30.19 17:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3105990

Parent Sample Id: 641581-006

Matrix: Soil

MS Sample Id: 641581-006 S

Prep Method: SW5030B

Date Prep: 10.30.19

MSD Sample Id: 641581-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.0778	77	0.0620	61	70-130	23	35	mg/kg	10.30.19 18:22	X
Toluene	<0.00101	0.101	0.0730	72	0.0577	57	70-130	23	35	mg/kg	10.30.19 18:22	X
Ethylbenzene	<0.00101	0.101	0.0620	61	0.0502	50	71-129	21	35	mg/kg	10.30.19 18:22	X
m,p-Xylenes	<0.00202	0.202	0.122	60	0.0996	49	70-135	20	35	mg/kg	10.30.19 18:22	X
o-Xylene	<0.00101	0.101	0.0630	62	0.0508	50	71-133	21	35	mg/kg	10.30.19 18:22	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		99		70-130	%	10.30.19 18:22
4-Bromofluorobenzene	122		120		70-130	%	10.30.19 18:22

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: 1631 591

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 Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	(432) 236-3849	Email:	lbaumbach@ltenv.com, dmoir@ltenv.com

Program: ☒ UST/PTST ☐ RP ☐ Growfields ☐ RC ☐ Superfund	
State of Project:	
Reporting Level: ☐ Level II ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV	
Deliverables: ☐ EDD ☐ ADAPT ☐ Other:	

Project Name:	NASH 302-302H 10/17/19	Turn Around	
Project Number:		Routine	☒
P.O. Number:	Eddy County	Rush:	
Sampler's Name:	Elizabeth Naka	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
	Temperature (°C):	1.8	Thermometer ID	
	Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2
	Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	4
	Sample Custody Seals:	Yes ☒ No ☐ N/A		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP	BTEX (E	Chloride																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							</
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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
Elizabeth Naka	James Byers	10/30/19 1450	James Byers	Elizabeth Naka	10/30/19 1456



Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10/30/2019 02:56:00 PM

Work Order #: 641591

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 10/30/2019

Checklist reviewed by:

Jessica Kramer

Date: 10/30/2019

Analytical Report 656670

for
LT Environmental, Inc.

Project Manager: Dan Moir

Nash 302-402H

012919258

25-MAR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

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



25-MAR-20

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

Reference: XENCO Report No(s): **656670**
Nash 302-402H
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 656670. 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. 656670 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 Manager

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 656670****LT Environmental, Inc., Arvada, CO**

Nash 302-402H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	03-21-20 10:15	2 ft	656670-001
FS02	S	03-21-20 12:45	3 ft	656670-002
FS03	S	03-21-20 13:50	3.5 ft	656670-003
SW01	S	03-21-20 11:00	0 - 3 ft	656670-004
SW02	S	03-21-20 10:35	0 - 3 ft	656670-005
SW03	S	03-21-20 11:45	0 - 3 ft	656670-006
SW04	S	03-21-20 11:40	0 - 3 ft	656670-007
SW05	S	03-21-20 14:10	0 - 4 ft	656670-008
SW06	S	03-21-20 14:00	0 - 4 ft	656670-009



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Nash 302-402H

Project ID: 012919258
Work Order Number(s): 656670

Report Date: 25-MAR-20
Date Received: 03/24/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3120853 BTEX by EPA 8021B

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

Certificate of Analysis Summary 656670



LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H

Project Id: 012919258

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Mar-24-20 01:40 pm

Report Date: 25-MAR-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	656670-001	656670-002	656670-003	656670-004	656670-005	656670-006
	<i>Field Id:</i>	FS01	FS02	FS03	SW01	SW02	SW03
	<i>Depth:</i>	2- ft	3- ft	3.5- ft	0-3 ft	0-3 ft	0-3 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-21-20 10:15	Mar-21-20 12:45	Mar-21-20 13:50	Mar-21-20 11:00	Mar-21-20 10:35	Mar-21-20 11:45
BTEX by EPA 8021B	<i>Extracted:</i>	Mar-24-20 14:37	Mar-24-20 14:37	Mar-24-20 14:37	Mar-24-20 14:37	Mar-24-20 14:37	Mar-24-20 14:37
	<i>Analyzed:</i>	Mar-24-20 18:32	Mar-24-20 18:52	Mar-24-20 19:12	Mar-24-20 19:33	Mar-24-20 19:53	Mar-24-20 20:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202
Toluene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202
m,p-Xylenes		<0.00403 0.00403	<0.00399 0.00399	<0.00399 0.00399	<0.00398 0.00398	<0.00402 0.00402	<0.00403 0.00403
o-Xylene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202
Total Xylenes		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202
Total BTEX		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	Mar-24-20 14:51	Mar-24-20 14:51	Mar-24-20 14:51	Mar-24-20 14:51	Mar-24-20 14:51	Mar-24-20 14:51
	<i>Analyzed:</i>	Mar-24-20 16:18	Mar-24-20 16:23	Mar-24-20 16:40	Mar-24-20 16:46	Mar-24-20 16:52	Mar-24-20 16:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		424 50.2	108 49.5	214 50.5	502 49.5	53.3 50.5	696 49.7
TPH by SW8015 Mod	<i>Extracted:</i>	Mar-24-20 17:20	Mar-24-20 17:20	Mar-24-20 17:20	Mar-24-20 17:20	Mar-24-20 17:20	Mar-24-20 17:20
	<i>Analyzed:</i>	Mar-24-20 19:08	Mar-24-20 20:26	Mar-24-20 21:07	Mar-24-20 21:27	Mar-24-20 21:47	Mar-24-20 22:07
	<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)		<49.8 49.8	<49.8 49.8	<49.8 49.8	<50.0 50.0	<50.0 50.0	<50.2 50.2
Diesel Range Organics (DRO)		<49.8 49.8	<49.8 49.8	<49.8 49.8	<50.0 50.0	<50.0 50.0	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.8 49.8	<49.8 49.8	<50.0 50.0	<50.0 50.0	<50.2 50.2
Total GRO-DRO		<49.8 49.8	<49.8 49.8	<49.8 49.8	<50.0 50.0	<50.0 50.0	<50.2 50.2
Total TPH		<49.8 49.8	<49.8 49.8	<49.8 49.8	<50.0 50.0	<50.0 50.0	<50.2 50.2

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

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

Jessica Kramer
Project Manager

Certificate of Analysis Summary 656670



LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H

Project Id: 012919258

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue Mar-24-20 01:40 pm

Report Date: 25-MAR-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	656670-007	656670-008	656670-009			
	Field Id:	SW04	SW05	SW06			
	Depth:	0-3 ft	0-4 ft	0-4 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Mar-21-20 11:40	Mar-21-20 14:10	Mar-21-20 14:00			
BTEX by EPA 8021B	Extracted:	Mar-24-20 14:37	Mar-24-20 14:37	Mar-24-20 14:37			
	Analyzed:	Mar-24-20 20:34	Mar-24-20 21:35	Mar-24-20 21:55			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
m,p-Xylenes		<0.00402 0.00402	<0.00401 0.00401	<0.00399 0.00399			
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200			
Chloride by EPA 300	Extracted:	Mar-24-20 14:51	Mar-24-20 14:51	Mar-24-20 14:51			
	Analyzed:	Mar-24-20 17:03	Mar-24-20 17:09	Mar-24-20 17:26			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		159 50.1	2150 50.1	137 50.2			
TPH by SW8015 Mod	Extracted:	Mar-24-20 17:20	Mar-24-20 17:20	Mar-24-20 17:30			
	Analyzed:	Mar-24-20 22:28	Mar-24-20 22:48	Mar-25-20 11:31			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.2 50.2	<50.2 50.2			
Diesel Range Organics (DRO)		<50.2 50.2	<50.2 50.2	<50.2 50.2			
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.2 50.2	<50.2 50.2			
Total GRO-DRO		<50.2 50.2	<50.2 50.2	<50.2 50.2			
Total TPH		<50.2 50.2	<50.2 50.2	<50.2 50.2			

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

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Jessica Kramer
Project Manager



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS01**
Lab Sample Id: 656670-001

Matrix: Soil
Date Collected: 03.21.20 10.15

Date Received: 03.24.20 13.40
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120867

Date Prep: 03.24.20 14.51

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	424	50.2	mg/kg	03.24.20 16.18		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120791

Date Prep: 03.24.20 17.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	03.24.20 19.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	03.24.20 19.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.24.20 19.08	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	03.24.20 19.08	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	03.24.20 19.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	03.24.20 19.08	
o-Terphenyl	84-15-1	113	%	70-135	03.24.20 19.08	



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS01**
Lab Sample Id: 656670-001

Matrix: Soil
Date Collected: 03.21.20 10.15

Date Received: 03.24.20 13.40
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.24.20 14.37

Basis: Wet Weight

Seq Number: 3120853

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.24.20 18.32	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.24.20 18.32	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.24.20 18.32	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.24.20 18.32	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.24.20 18.32	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.24.20 18.32	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.24.20 18.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	03.24.20 18.32		
1,4-Difluorobenzene	540-36-3	110	%	70-130	03.24.20 18.32		



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS02**
Lab Sample Id: 656670-002

Matrix: Soil
Date Collected: 03.21.20 12.45

Date Received: 03.24.20 13.40
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120867

Date Prep: 03.24.20 14.51

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	108	49.5	mg/kg	03.24.20 16.23		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120791

Date Prep: 03.24.20 17.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	03.24.20 20.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	03.24.20 20.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.24.20 20.26	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	03.24.20 20.26	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	03.24.20 20.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.24.20 20.26	
o-Terphenyl	84-15-1	118	%	70-135	03.24.20 20.26	



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS02**
Lab Sample Id: 656670-002

Matrix: Soil
Date Collected: 03.21.20 12.45

Date Received: 03.24.20 13.40
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.24.20 14.37

Basis: Wet Weight

Seq Number: 3120853

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.24.20 18.52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.24.20 18.52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.24.20 18.52	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.24.20 18.52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.24.20 18.52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.24.20 18.52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.24.20 18.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	03.24.20 18.52		
4-Bromofluorobenzene	460-00-4	93	%	70-130	03.24.20 18.52		



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS03**
Lab Sample Id: 656670-003

Matrix: Soil
Date Collected: 03.21.20 13.50

Date Received: 03.24.20 13.40
Sample Depth: 3.5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120867

Date Prep: 03.24.20 14.51

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	214	50.5	mg/kg	03.24.20 16.40		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120791

Date Prep: 03.24.20 17.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	03.24.20 21.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	03.24.20 21.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.24.20 21.07	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	03.24.20 21.07	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	03.24.20 21.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.24.20 21.07	
o-Terphenyl	84-15-1	116	%	70-135	03.24.20 21.07	



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS03**
Lab Sample Id: 656670-003

Matrix: Soil
Date Collected: 03.21.20 13.50

Date Received: 03.24.20 13.40
Sample Depth: 3.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.24.20 14.37

Basis: Wet Weight

Seq Number: 3120853

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.24.20 19.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.24.20 19.12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.24.20 19.12	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.24.20 19.12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.24.20 19.12	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.24.20 19.12	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.24.20 19.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.24.20 19.12		
1,4-Difluorobenzene	540-36-3	112	%	70-130	03.24.20 19.12		



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW01**
Lab Sample Id: 656670-004

Matrix: Soil
Date Collected: 03.21.20 11.00

Date Received: 03.24.20 13.40
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120867

Date Prep: 03.24.20 14.51

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	502	49.5	mg/kg	03.24.20 16.46		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120791

Date Prep: 03.24.20 17.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.24.20 21.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.24.20 21.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.24.20 21.27	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.24.20 21.27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.24.20 21.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	03.24.20 21.27	
o-Terphenyl	84-15-1	117	%	70-135	03.24.20 21.27	



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW01**
Lab Sample Id: 656670-004

Matrix: Soil
Date Collected: 03.21.20 11.00

Date Received: 03.24.20 13.40
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.24.20 14.37

Basis: Wet Weight

Seq Number: 3120853

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.24.20 19.33	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.24.20 19.33	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.24.20 19.33	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.24.20 19.33	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.24.20 19.33	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.24.20 19.33	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.24.20 19.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.24.20 19.33		
1,4-Difluorobenzene	540-36-3	112	%	70-130	03.24.20 19.33		



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW02**
Lab Sample Id: 656670-005

Matrix: Soil
Date Collected: 03.21.20 10.35

Date Received: 03.24.20 13.40
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120867

Date Prep: 03.24.20 14.51

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	53.3	50.5	mg/kg	03.24.20 16.52		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120791

Date Prep: 03.24.20 17.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.24.20 21.47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.24.20 21.47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.24.20 21.47	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.24.20 21.47	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.24.20 21.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	03.24.20 21.47	
o-Terphenyl	84-15-1	115	%	70-135	03.24.20 21.47	



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW02**
Lab Sample Id: 656670-005

Matrix: Soil
Date Collected: 03.21.20 10.35

Date Received: 03.24.20 13.40
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.24.20 14.37

Basis: Wet Weight

Seq Number: 3120853

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.24.20 19.53	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.24.20 19.53	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.24.20 19.53	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.24.20 19.53	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.24.20 19.53	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.24.20 19.53	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.24.20 19.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.24.20 19.53		
1,4-Difluorobenzene	540-36-3	111	%	70-130	03.24.20 19.53		



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW03**
Lab Sample Id: 656670-006

Matrix: Soil
Date Collected: 03.21.20 11.45

Date Received: 03.24.20 13.40
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120867

Date Prep: 03.24.20 14.51

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	696	49.7	mg/kg	03.24.20 16.57		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120791

Date Prep: 03.24.20 17.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.24.20 22.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.24.20 22.07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.24.20 22.07	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.24.20 22.07	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.24.20 22.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	03.24.20 22.07	
o-Terphenyl	84-15-1	132	%	70-135	03.24.20 22.07	



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW03**
Lab Sample Id: 656670-006

Matrix: Soil
Date Collected: 03.21.20 11.45

Date Received: 03.24.20 13.40
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3120853

Prep Method: SW5030B

% Moisture:

Date Prep: 03.24.20 14.37

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.24.20 20.14	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.24.20 20.14	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.24.20 20.14	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.24.20 20.14	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.24.20 20.14	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.24.20 20.14	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.24.20 20.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	03.24.20 20.14		
1,4-Difluorobenzene	540-36-3	112	%	70-130	03.24.20 20.14		



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW04**
Lab Sample Id: 656670-007

Matrix: Soil
Date Collected: 03.21.20 11.40

Date Received: 03.24.20 13.40
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120867

Date Prep: 03.24.20 14.51

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	159	50.1	mg/kg	03.24.20 17.03		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120791

Date Prep: 03.24.20 17.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.24.20 22.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.24.20 22.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.24.20 22.28	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.24.20 22.28	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.24.20 22.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.24.20 22.28	
o-Terphenyl	84-15-1	117	%	70-135	03.24.20 22.28	



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW04**
Lab Sample Id: 656670-007

Matrix: Soil
Date Collected: 03.21.20 11.40

Date Received: 03.24.20 13.40
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3120853

Prep Method: SW5030B

% Moisture:

Date Prep: 03.24.20 14.37

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.24.20 20.34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.24.20 20.34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.24.20 20.34	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.24.20 20.34	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.24.20 20.34	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.24.20 20.34	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.24.20 20.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	03.24.20 20.34		
1,4-Difluorobenzene	540-36-3	110	%	70-130	03.24.20 20.34		



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW05**
Lab Sample Id: 656670-008

Matrix: Soil
Date Collected: 03.21.20 14.10

Date Received: 03.24.20 13.40
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120867

Date Prep: 03.24.20 14.51

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2150	50.1	mg/kg	03.24.20 17.09		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120791

Date Prep: 03.24.20 17.20

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.24.20 22.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.24.20 22.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.24.20 22.48	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.24.20 22.48	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.24.20 22.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	03.24.20 22.48	
o-Terphenyl	84-15-1	114	%	70-135	03.24.20 22.48	



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW05**
Lab Sample Id: 656670-008

Matrix: Soil
Date Collected: 03.21.20 14.10

Date Received: 03.24.20 13.40
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3120853

Prep Method: SW5030B

% Moisture:

Date Prep: 03.24.20 14.37

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.24.20 21.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.24.20 21.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.24.20 21.35	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	03.24.20 21.35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.24.20 21.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.24.20 21.35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.24.20 21.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	03.24.20 21.35		
1,4-Difluorobenzene	540-36-3	110	%	70-130	03.24.20 21.35		



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW06**
Lab Sample Id: 656670-009

Matrix: Soil
Date Collected: 03.21.20 14.00

Date Received: 03.24.20 13.40
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3120867

Date Prep: 03.24.20 14.51

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	137	50.2	mg/kg	03.24.20 17.26		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3120922

Date Prep: 03.24.20 17.30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.25.20 11.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.25.20 11.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.25.20 11.31	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.25.20 11.31	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.25.20 11.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	03.25.20 11.31	
o-Terphenyl	84-15-1	122	%	70-135	03.25.20 11.31	



Certificate of Analytical Results 656670

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW06**
Lab Sample Id: 656670-009

Matrix: Soil
Date Collected: 03.21.20 14.00

Date Received: 03.24.20 13.40
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.24.20 14.37

Basis: Wet Weight

Seq Number: 3120853

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.24.20 21.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.24.20 21.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.24.20 21.55	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.24.20 21.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.24.20 21.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.24.20 21.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.24.20 21.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	03.24.20 21.55		
4-Bromofluorobenzene	460-00-4	97	%	70-130	03.24.20 21.55		



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



LT Environmental, Inc.

Nash 302-402H

Analytical Method: Chloride by EPA 300

Seq Number: 3120867

MB Sample Id: 7699626-1-BLK

Matrix: Solid

LCS Sample Id: 7699626-1-BKS

Prep Method: E300P

Date Prep: 03.24.20

LCSD Sample Id: 7699626-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	256	102	263	105	90-110	3	20	mg/kg	03.24.20 15:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3120867

Parent Sample Id: 656666-001

Matrix: Soil

MS Sample Id: 656666-001 S

Prep Method: E300P

Date Prep: 03.24.20

MSD Sample Id: 656666-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	688	200	892	102	876	96	90-110	2	20	mg/kg	03.24.20 15:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3120867

Parent Sample Id: 656670-008

Matrix: Soil

MS Sample Id: 656670-008 S

Prep Method: E300P

Date Prep: 03.24.20

MSD Sample Id: 656670-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2150	201	2350	100	2350	100	90-110	0	20	mg/kg	03.24.20 17:14	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120791

MB Sample Id: 7699645-1-BLK

Matrix: Solid

LCS Sample Id: 7699645-1-BKS

Prep Method: SW8015P

Date Prep: 03.24.20

LCSD Sample Id: 7699645-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1010	101	1050	105	70-135	4	35	mg/kg	03.24.20 13:44	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1140	114	70-135	4	35	mg/kg	03.24.20 13:44	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		124		128		70-135	%	03.24.20 13:44
o-Terphenyl	105		121		127		70-135	%	03.24.20 13:44

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



LT Environmental, Inc.

Nash 302-402H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120922

MB Sample Id: 7699702-1-BLK

Matrix: Solid

LCS Sample Id: 7699702-1-BKS

Prep Method: SW8015P

Date Prep: 03.24.20

LCSD Sample Id: 7699702-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	984	98	992	99	70-135	1	35	mg/kg	03.25.20 09:25	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1090	109	70-135	0	35	mg/kg	03.25.20 09:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		123		123		70-135	%	03.25.20 09:25
o-Terphenyl	112		121		122		70-135	%	03.25.20 09:25

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120791

Matrix: Solid

MB Sample Id: 7699645-1-BLK

Prep Method: SW8015P

Date Prep: 03.24.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.24.20 13:24	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120922

Matrix: Solid

MB Sample Id: 7699702-1-BLK

Prep Method: SW8015P

Date Prep: 03.24.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.25.20 14:56	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120791

Matrix: Soil

Parent Sample Id: 656458-132

MS Sample Id: 656458-132 S

Prep Method: SW8015P

Date Prep: 03.24.20

MSD Sample Id: 656458-132 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	965	97	904	90	70-135	7	35	mg/kg	03.24.20 15:24	
Diesel Range Organics (DRO)	<50.1	1000	1130	113	1030	103	70-135	9	35	mg/kg	03.24.20 15:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		116		70-135	%	03.24.20 15:24
o-Terphenyl	121		111		70-135	%	03.24.20 15:24

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

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

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

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



LT Environmental, Inc.

Nash 302-402H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120922

Parent Sample Id: 656666-001

Matrix: Soil

MS Sample Id: 656666-001 S

Prep Method: SW8015P

Date Prep: 03.24.20

MSD Sample Id: 656666-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	1010	101	912	91	70-135	10	35	mg/kg	03.25.20 10:50	
Diesel Range Organics (DRO)	<50.1	1000	1150	115	1030	103	70-135	11	35	mg/kg	03.25.20 10:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		119		70-135	%	03.25.20 10:50
o-Terphenyl	128		121		70-135	%	03.25.20 10:50

Analytical Method: BTEX by EPA 8021B

Seq Number: 3120853

MB Sample Id: 7699625-1-BLK

Matrix: Solid

LCS Sample Id: 7699625-1-BKS

Prep Method: SW5030B

Date Prep: 03.24.20

LCSD Sample Id: 7699625-1-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	0.113	113	0.114	114	70-130	1	35	mg/kg	03.24.20 15:48	
Toluene	<0.00200	0.100	0.108	108	0.110	110	70-130	2	35	mg/kg	03.24.20 15:48	
Ethylbenzene	<0.00200	0.100	0.102	102	0.104	104	71-129	2	35	mg/kg	03.24.20 15:48	
m,p-Xylenes	<0.00400	0.200	0.210	105	0.215	108	70-135	2	35	mg/kg	03.24.20 15:48	
o-Xylene	<0.00200	0.100	0.105	105	0.108	108	71-133	3	35	mg/kg	03.24.20 15:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		108		108		70-130	%	03.24.20 15:48
4-Bromofluorobenzene	95		88		91		70-130	%	03.24.20 15:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3120853

Parent Sample Id: 656666-001

Matrix: Soil

MS Sample Id: 656666-001 S

Prep Method: SW5030B

Date Prep: 03.24.20

MSD Sample Id: 656666-001 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	0.112	112	0.118	118	70-130	5	35	mg/kg	03.24.20 16:29	
Toluene	<0.00199	0.0996	0.107	107	0.114	114	70-130	6	35	mg/kg	03.24.20 16:29	
Ethylbenzene	<0.00199	0.0996	0.101	101	0.108	108	71-129	7	35	mg/kg	03.24.20 16:29	
m,p-Xylenes	<0.00398	0.199	0.208	105	0.223	112	70-135	7	35	mg/kg	03.24.20 16:29	
o-Xylene	<0.00199	0.0996	0.104	104	0.111	111	71-133	7	35	mg/kg	03.24.20 16:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		109		70-130	%	03.24.20 16:29
4-Bromofluorobenzene	94		93		70-130	%	03.24.20 16:29

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: 1651670

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 Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO-Energy
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carsbad, NM
Phone:	432.704.5178	Email:	dmair@xenco.com mcalfee@xenco.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:	Nash 302-402H	Turn Around	☐
Project Number:	012919258	Routine	☐
P.O. Number:		Rush: 4 day	
Sampler's Name:	Robert McAlfee	Due Date:	

Temperature (°C):	1.8	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☐ No ☒
Received Inlet:	Yes ☐ No ☒	Thermometer ID	TMM007		
Cooler Custody Seals:	Yes ☐ No ☒	Correction Factor:	-0.2		
Sample Custody Seals:	Yes ☐ No ☒	Total Containers:	9		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST											Work Order Notes
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)								
F501	S	03/21/20	1015	2'	1	X	X	X								TAT starts the day received by the lab, if received by 4:30pm Sample Comments Composite
F502			1245	3'		X	X	X								
F503			1350	3.5'		X	X	X								
SW01			1100	0-3'		X	X	X								
SW02			1035	0-3'		X	X	X								
SW03			1145	0-3'		X	X	X								
SW04			1140	0-3'		X	X	X								
SW05			1410	0-4'		X	X	X								
SW06			1400	0-4'		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	B	Cd	Ca	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U										
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 to Xenco. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.																																

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Bob Mays</i>	<i>[Signature]</i>	3/24/20 13:40			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.24.2020 01.40.00 PM

Work Order #: 656670

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 03.24.2020

Checklist reviewed by:



Jessica Kramer

Date: 03.25.2020



Analytical Report 657686

for

LT Environmental, Inc.

Project Manager: Dan Moir

Nash 302-402 H

012919258

04.06.2020

Collected By: Client

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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.06.2020

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

Reference: XENCO Report No(s): **657686**
Nash 302-402 H
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 657686. 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. 657686 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 Manager

A Small Business and Minority Company

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



Sample Cross Reference 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW07	S	03.28.2020 09:30	0 - 4 ft	657686-001
FS04	S	03.28.2020 11:00	6 ft	657686-002
SW08	S	03.28.2020 11:05	0 - 6 ft	657686-003
SW09	S	03.28.2020 10:30	0 - 5 ft	657686-004
FS05	S	03.28.2020 12:55	6 ft	657686-005
SW10	S	03.28.2020 12:15	0 - 5 ft	657686-006
SW11	S	03.28.2020 13:00	0 - 6 ft	657686-007



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 302-402 H*

Project ID: 012919258
Work Order Number(s): 657686

Report Date: 04.06.2020
Date Received: 04.02.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3121837 BTEX by EPA 8021B

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



Certificate of Analysis Summary 657686

LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402 H

Project Id: 012919258

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 04.02.2020 09:13

Report Date: 04.06.2020 13:45

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657686-001	657686-002	657686-003	657686-004	657686-005	657686-006
	<i>Field Id:</i>	SW07	FS04	SW08	SW09	FS05	SW10
	<i>Depth:</i>	0-4 ft	6- ft	0-6 ft	0-5 ft	6- ft	0-5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	03.28.2020 09:30	03.28.2020 11:00	03.28.2020 11:05	03.28.2020 10:30	03.28.2020 12:55	03.28.2020 12:15
BTEX by EPA 8021B	<i>Extracted:</i>	04.02.2020 17:35	04.02.2020 17:35	04.02.2020 17:35	04.02.2020 17:35	04.02.2020 17:35	04.02.2020 17:35
	<i>Analyzed:</i>	04.03.2020 03:40	04.03.2020 04:01	04.03.2020 04:21	04.03.2020 04:41	04.03.2020 05:02	04.03.2020 05:22
	<i>Units/RL:</i>	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	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201
m,p-Xylenes		<0.00398 0.00398	<0.00401 0.00401	<0.00399 0.00399	<0.00401 0.00401	<0.00397 0.00397	<0.00402 0.00402
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00201 0.00201
Chloride by EPA 300	<i>Extracted:</i>	04.05.2020 11:26	04.05.2020 11:26	04.05.2020 11:26	04.05.2020 11:26	04.05.2020 11:26	04.05.2020 11:26
	<i>Analyzed:</i>	04.05.2020 22:53	04.05.2020 23:06	04.05.2020 23:19	04.05.2020 23:32	04.06.2020 00:11	04.06.2020 00:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1520 49.9	526 49.9	594 50.0	617 50.0	472 50.1	234 50.4
TPH by SW8015 Mod	<i>Extracted:</i>	04.03.2020 18:15	04.03.2020 18:15	04.03.2020 18:15	04.03.2020 18:15	04.03.2020 18:15	04.03.2020 18:15
	<i>Analyzed:</i>	04.06.2020 00:57	04.06.2020 01:57	04.06.2020 02:17	04.06.2020 02:38	04.06.2020 02:58	04.06.2020 03:18
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.1 50.1	<49.9 49.9	<50.3 50.3	<49.9 49.9	<50.3 50.3
Diesel Range Organics (DRO)		<50.0 50.0	<50.1 50.1	<49.9 49.9	<50.3 50.3	<49.9 49.9	<50.3 50.3
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.1 50.1	<49.9 49.9	<50.3 50.3	<49.9 49.9	<50.3 50.3
Total GRO-DRO		<50.0 50.0	<50.1 50.1	<49.9 49.9	<50.3 50.3	<49.9 49.9	<50.3 50.3
Total TPH		<50.0 50.0	<50.1 50.1	<49.9 49.9	<50.3 50.3	<49.9 49.9	<50.3 50.3

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

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 657686

LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402 H

Project Id: 012919258

Contact: Dan Moir

Project Location:

Date Received in Lab: Thu 04.02.2020 09:13

Report Date: 04.06.2020 13:45

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	657686-007					
	Field Id:	SW11					
	Depth:	0-6 ft					
	Matrix:	SOIL					
	Sampled:	03.28.2020 13:00					
BTEX by EPA 8021B	Extracted:	04.02.2020 17:35					
	Analyzed:	04.03.2020 05:42					
	Units/RL:	mg/kg RL					
Benzene		<0.00201 0.00201					
Toluene		<0.00201 0.00201					
Ethylbenzene		<0.00201 0.00201					
m,p-Xylenes		<0.00402 0.00402					
o-Xylene		<0.00201 0.00201					
Total Xylenes		<0.00201 0.00201					
Total BTEX		<0.00201 0.00201					
Chloride by EPA 300	Extracted:	04.05.2020 11:26					
	Analyzed:	04.06.2020 00:36					
	Units/RL:	mg/kg RL					
Chloride		858 49.6					
TPH by SW8015 Mod	Extracted:	04.03.2020 18:15					
	Analyzed:	04.06.2020 03:38					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3					
Diesel Range Organics (DRO)		<50.3 50.3					
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3					
Total GRO-DRO		<50.3 50.3					
Total TPH		<50.3 50.3					

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

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Jessica Kramer
Project Manager



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **SW07** Matrix: Soil Date Received: 04.02.2020 09:13
 Lab Sample Id: 657686-001 Date Collected: 03.28.2020 09:30 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.05.2020 11:26 Basis: Wet Weight
 Seq Number: 3121974

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1520	49.9	mg/kg	04.05.2020 22:53		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.03.2020 18:15 Basis: Wet Weight
 Seq Number: 3122009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.06.2020 00:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.06.2020 00:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.06.2020 00:57	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.06.2020 00:57	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.06.2020 00:57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	04.06.2020 00:57	
o-Terphenyl	84-15-1	106	%	70-135	04.06.2020 00:57	



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **SW07**
Lab Sample Id: 657686-001

Matrix: Soil
Date Collected: 03.28.2020 09:30

Date Received: 04.02.2020 09:13
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.02.2020 17:35

Basis: Wet Weight

Seq Number: 3121837

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.03.2020 03:40	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.03.2020 03:40	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.03.2020 03:40	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.03.2020 03:40	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.03.2020 03:40	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.03.2020 03:40	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.03.2020 03:40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.03.2020 03:40		
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.03.2020 03:40		



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **FS04** Matrix: Soil Date Received: 04.02.2020 09:13
 Lab Sample Id: 657686-002 Date Collected: 03.28.2020 11:00 Sample Depth: 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.05.2020 11:26 Basis: Wet Weight
 Seq Number: 3121974

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	526	49.9	mg/kg	04.05.2020 23:06		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.03.2020 18:15 Basis: Wet Weight
 Seq Number: 3122009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.06.2020 01:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.06.2020 01:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.06.2020 01:57	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.06.2020 01:57	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.06.2020 01:57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	04.06.2020 01:57	
o-Terphenyl	84-15-1	105	%	70-135	04.06.2020 01:57	



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **FS04**
Lab Sample Id: 657686-002

Matrix: Soil
Date Collected: 03.28.2020 11:00

Date Received: 04.02.2020 09:13
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.02.2020 17:35

Basis: Wet Weight

Seq Number: 3121837

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.03.2020 04:01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.03.2020 04:01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.03.2020 04:01	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.03.2020 04:01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.03.2020 04:01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.03.2020 04:01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.03.2020 04:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.03.2020 04:01	
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.03.2020 04:01	



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **SW08** Matrix: Soil Date Received: 04.02.2020 09:13
 Lab Sample Id: 657686-003 Date Collected: 03.28.2020 11:05 Sample Depth: 0 - 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.05.2020 11:26 Basis: Wet Weight
 Seq Number: 3121974

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	594	50.0	mg/kg	04.05.2020 23:19		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.03.2020 18:15 Basis: Wet Weight
 Seq Number: 3122009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.06.2020 02:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.06.2020 02:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.06.2020 02:17	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.06.2020 02:17	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.06.2020 02:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	04.06.2020 02:17	
o-Terphenyl	84-15-1	106	%	70-135	04.06.2020 02:17	



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **SW08**
Lab Sample Id: 657686-003

Matrix: Soil
Date Collected: 03.28.2020 11:05

Date Received: 04.02.2020 09:13
Sample Depth: 0 - 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.02.2020 17:35

Basis: Wet Weight

Seq Number: 3121837

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.03.2020 04:21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.03.2020 04:21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.03.2020 04:21	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.03.2020 04:21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.03.2020 04:21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.03.2020 04:21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.03.2020 04:21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	04.03.2020 04:21		
1,4-Difluorobenzene	540-36-3	110	%	70-130	04.03.2020 04:21		



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **SW09** Matrix: Soil Date Received: 04.02.2020 09:13
 Lab Sample Id: 657686-004 Date Collected: 03.28.2020 10:30 Sample Depth: 0 - 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.05.2020 11:26 Basis: Wet Weight
 Seq Number: 3121974

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	617	50.0	mg/kg	04.05.2020 23:32		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.03.2020 18:15 Basis: Wet Weight
 Seq Number: 3122009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.06.2020 02:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.06.2020 02:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.06.2020 02:38	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.06.2020 02:38	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.06.2020 02:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	04.06.2020 02:38	
o-Terphenyl	84-15-1	119	%	70-135	04.06.2020 02:38	



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **SW09**
Lab Sample Id: 657686-004

Matrix: Soil
Date Collected: 03.28.2020 10:30

Date Received: 04.02.2020 09:13
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.02.2020 17:35

Basis: Wet Weight

Seq Number: 3121837

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.03.2020 04:41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.03.2020 04:41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.03.2020 04:41	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.03.2020 04:41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.03.2020 04:41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.03.2020 04:41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.03.2020 04:41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	04.03.2020 04:41		
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.03.2020 04:41		



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **FS05** Matrix: Soil Date Received: 04.02.2020 09:13
 Lab Sample Id: 657686-005 Date Collected: 03.28.2020 12:55 Sample Depth: 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.05.2020 11:26 Basis: Wet Weight
 Seq Number: 3121974

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	472	50.1	mg/kg	04.06.2020 00:11		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.03.2020 18:15 Basis: Wet Weight
 Seq Number: 3122009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.06.2020 02:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.06.2020 02:58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.06.2020 02:58	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.06.2020 02:58	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.06.2020 02:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	04.06.2020 02:58	
o-Terphenyl	84-15-1	108	%	70-135	04.06.2020 02:58	



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **FS05**
Lab Sample Id: 657686-005

Matrix: Soil
Date Collected: 03.28.2020 12:55

Date Received: 04.02.2020 09:13
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.02.2020 17:35

Basis: Wet Weight

Seq Number: 3121837

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.03.2020 05:02	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.03.2020 05:02	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.03.2020 05:02	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.03.2020 05:02	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.03.2020 05:02	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.03.2020 05:02	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.03.2020 05:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	04.03.2020 05:02		
1,4-Difluorobenzene	540-36-3	114	%	70-130	04.03.2020 05:02		



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **SW10** Matrix: Soil Date Received: 04.02.2020 09:13
 Lab Sample Id: 657686-006 Date Collected: 03.28.2020 12:15 Sample Depth: 0 - 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.05.2020 11:26 Basis: Wet Weight
 Seq Number: 3121974

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	234	50.4	mg/kg	04.06.2020 00:23		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.03.2020 18:15 Basis: Wet Weight
 Seq Number: 3122009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.06.2020 03:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.06.2020 03:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.06.2020 03:18	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.06.2020 03:18	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.06.2020 03:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	04.06.2020 03:18	
o-Terphenyl	84-15-1	117	%	70-135	04.06.2020 03:18	



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **SW10**
Lab Sample Id: 657686-006

Matrix: Soil
Date Collected: 03.28.2020 12:15

Date Received: 04.02.2020 09:13
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3121837

Prep Method: SW5030B

% Moisture:

Date Prep: 04.02.2020 17:35

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.03.2020 05:22	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.03.2020 05:22	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.03.2020 05:22	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.03.2020 05:22	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.03.2020 05:22	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.03.2020 05:22	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.03.2020 05:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	114	%	70-130	04.03.2020 05:22	
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.03.2020 05:22	



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **SW11** Matrix: Soil Date Received: 04.02.2020 09:13
 Lab Sample Id: 657686-007 Date Collected: 03.28.2020 13:00 Sample Depth: 0 - 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.05.2020 11:26 Basis: Wet Weight
 Seq Number: 3121974

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	858	49.6	mg/kg	04.06.2020 00:36		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.03.2020 18:15 Basis: Wet Weight
 Seq Number: 3122009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.06.2020 03:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.06.2020 03:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.06.2020 03:38	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.06.2020 03:38	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.06.2020 03:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	04.06.2020 03:38	
o-Terphenyl	84-15-1	105	%	70-135	04.06.2020 03:38	



Certificate of Analytical Results 657686

LT Environmental, Inc., Arvada, CO

Nash 302-402 H

Sample Id: **SW11**
Lab Sample Id: 657686-007

Matrix: Soil
Date Collected: 03.28.2020 13:00

Date Received: 04.02.2020 09:13
Sample Depth: 0 - 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.02.2020 17:35

Basis: Wet Weight

Seq Number: 3121837

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.03.2020 05:42	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.03.2020 05:42	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.03.2020 05:42	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.03.2020 05:42	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.03.2020 05:42	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.03.2020 05:42	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.03.2020 05:42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.03.2020 05:42		
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.03.2020 05:42		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Nash 302-402 H

Analytical Method: Chloride by EPA 300

Seq Number: 3121974

MB Sample Id: 7700408-1-BLK

Matrix: Solid

LCS Sample Id: 7700408-1-BKS

Prep Method: E300P

Date Prep: 04.05.2020

LCSD Sample Id: 7700408-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	260	104	262	105	90-110	1	20	mg/kg	04.05.2020 21:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3121974

Parent Sample Id: 657683-021

Matrix: Soil

MS Sample Id: 657683-021 S

Prep Method: E300P

Date Prep: 04.05.2020

MSD Sample Id: 657683-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.2	399	429	104	427	103	90-110	0	20	mg/kg	04.05.2020 21:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3121974

Parent Sample Id: 657686-004

Matrix: Soil

MS Sample Id: 657686-004 S

Prep Method: E300P

Date Prep: 04.05.2020

MSD Sample Id: 657686-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	617	202	805	93	816	100	90-110	1	20	mg/kg	04.05.2020 23:45	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122009

MB Sample Id: 7700582-1-BLK

Matrix: Solid

LCS Sample Id: 7700582-1-BKS

Prep Method: SW8015P

Date Prep: 04.03.2020

LCSD Sample Id: 7700582-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1030	103	1020	102	70-135	1	35	mg/kg	04.06.2020 00:17	
Diesel Range Organics (DRO)	<50.0	1000	1120	112	1110	111	70-135	1	35	mg/kg	04.06.2020 00:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		127		118		70-135	%	04.06.2020 00:17
o-Terphenyl	115		122		118		70-135	%	04.06.2020 00:17

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122009

Matrix: Solid

MB Sample Id: 7700582-1-BLK

Prep Method: SW8015P

Date Prep: 04.03.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.04.2020 01:12	

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

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

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

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



LT Environmental, Inc.

Nash 302-402 H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122009

Parent Sample Id: 657686-001

Matrix: Soil

MS Sample Id: 657686-001 S

Prep Method: SW8015P

Date Prep: 04.03.2020

MSD Sample Id: 657686-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	987	99	989	99	70-135	0	35	mg/kg	04.06.2020 01:17	
Diesel Range Organics (DRO)	<50.2	1000	1040	104	1050	105	70-135	1	35	mg/kg	04.06.2020 01:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		118		70-135	%	04.06.2020 01:17
o-Terphenyl	112		114		70-135	%	04.06.2020 01:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121837

MB Sample Id: 7700411-1-BLK

Matrix: Solid

LCS Sample Id: 7700411-1-BKS

Prep Method: SW5030B

Date Prep: 04.02.2020

LCSD Sample Id: 7700411-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.110	110	0.118	118	70-130	7	35	mg/kg	04.02.2020 20:32	
Toluene	<0.00200	0.100	0.0999	100	0.107	107	70-130	7	35	mg/kg	04.02.2020 20:32	
Ethylbenzene	<0.00200	0.100	0.0921	92	0.100	100	71-129	8	35	mg/kg	04.02.2020 20:32	
m,p-Xylenes	<0.00400	0.200	0.179	90	0.196	98	70-135	9	35	mg/kg	04.02.2020 20:32	
o-Xylene	<0.00200	0.100	0.0919	92	0.100	100	71-133	8	35	mg/kg	04.02.2020 20:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		108		109		70-130	%	04.02.2020 20:32
4-Bromofluorobenzene	91		86		86		70-130	%	04.02.2020 20:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121837

Parent Sample Id: 657763-001

Matrix: Soil

MS Sample Id: 657763-001 S

Prep Method: SW5030B

Date Prep: 04.02.2020

MSD Sample Id: 657763-001 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	0.125	126	0.119	119	70-130	5	35	mg/kg	04.02.2020 21:12	
Toluene	<0.00199	0.0996	0.114	114	0.108	108	70-130	5	35	mg/kg	04.02.2020 21:12	
Ethylbenzene	<0.00199	0.0996	0.106	106	0.0980	98	71-129	8	35	mg/kg	04.02.2020 21:12	
m,p-Xylenes	<0.00398	0.199	0.205	103	0.190	95	70-135	8	35	mg/kg	04.02.2020 21:12	
o-Xylene	<0.00199	0.0996	0.104	104	0.0968	97	71-133	7	35	mg/kg	04.02.2020 21:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		70-130	%	04.02.2020 21:12
4-Bromofluorobenzene	86		88		70-130	%	04.02.2020 21:12

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: 657686

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 288-1111
Hobbs, NM (575-392-7550)

Page 1 of 1
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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A St. Bldg 1, Unit 222	Address:	3104 E Greene St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	(432) 701-2610	Email:	dmoir@ltenv.com mmcafee@ltenv.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ brownfields ☐ RC ☐ Superfund

State of Project: NM

Reporting Level I ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐

Deliverables: EDD ☐ ADAPT ☐ Other:

ANALYSIS REQUEST										Work Order Notes	
Project Name:		wash 302 - 402 H				Turn Around					
Project Number:		612919258				Routine		☐			
P.O. Number:						Rush:		3 day			
Sampler's Name:		Robert McAfee				Due Date:					
SAMPLE RECEIPT		Temp Blank:		Yes ☒ No ☐		Wet Ice:		☒ ☐ No			
Temperature (°C):		1.4		Thermometer ID							
Received Intact:		Yes ☒ No ☐		T-NM-007							
Cooler Custody Seals:		Yes ☒ No ☐		Correction Factor:		-0.2					
Sample Custody Seals:		Yes ☒ No ☐		Total Containers:		4					
Number of Containers											
A 8015)											
PA 8021)											
(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 (EP)	BTEX (E)	Chloride
Swo7	S	03/28/20	0930	0-4'	1	X	X	X
F504			1100	6'		X	X	X
Sw08			1105	0-6'		X	X	X
SWD4			1030	0-5'		X	X	X
F505			1255	6'		X	X	x
Sw10			1215	0-5'		X	X	X
Sw11	A	A	1300	0-6'	A	X	X	X

Total 2007 / 6010 2008 / 6000

ID# 11 received by 4:30pm
Sample Comments

Total 200.7 / 6010	200.8 / 6020:
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8RCRA 13PPM Texas 11 Al Sh As Ba Be B Cd Cs Cr Co Cu Ee Pb Mn Mo Ni K C-A C-200 N C 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2810

Circle Method(s) and Metal(s) to be analyzed

TcLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U
 1631 / 245.1 / 7470 / 7471: Hg

use, signature or 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 service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Paula M. Miller</i>	<i>Wintsky</i>	4/2/2019:00am	<i>Wintsky</i>	<i>Miller</i>	4/2/30 0913

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.02.2020 09.13.00 AM

Work Order #: 657686

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 04.02.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.02.2020



Analytical Report 659295

for

LT Environmental, Inc.

Project Manager: Dan Moir

Nash 302-402H

012919258

04.22.2020

Collected By: Client

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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.22.2020

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

Reference: XENCO Report No(s): **659295**
Nash 302-402H
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 659295. 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. 659295 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer
Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS06	S	04.18.2020 10:20	6 ft	659295-001
FS07	S	04.18.2020 13:10	6.5 ft	659295-002
SW12	S	04.18.2020 09:50	0 - 5.5 ft	659295-003
SW13	S	04.18.2020 09:50	0 - 5.5 ft	659295-004
SW14	S	04.18.2020 12:30	0 - 6 ft	659295-005
SW15	S	04.18.2020 13:00	0 - 6 ft	659295-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Nash 302-402H

Project ID: 012919258
Work Order Number(s): 659295

Report Date: 04.22.2020
Date Received: 04.20.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3123539 BTEX by EPA 8021B

Soil samples received in bulk containers.



Certificate of Analysis Summary 659295

LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H

Project Id: 012919258

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon 04.20.2020 14:35

Report Date: 04.22.2020 13:33

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	659295-001	659295-002	659295-003	659295-004	659295-005	659295-006
	<i>Field Id:</i>	FS06	FS07	SW12	SW13	SW14	SW15
	<i>Depth:</i>	6- ft	6.5- ft	0-5.5 ft	0-5.5 ft	0-6 ft	0-6 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	04.18.2020 10:20	04.18.2020 13:10	04.18.2020 09:50	04.18.2020 09:50	04.18.2020 12:30	04.18.2020 13:00
BTEX by EPA 8021B	<i>Extracted:</i>	04.20.2020 17:08	04.20.2020 17:08	04.20.2020 17:08	04.20.2020 17:08	04.20.2020 17:08	04.20.2020 17:08
	<i>Analyzed:</i>	04.21.2020 00:24	04.21.2020 00:44	04.21.2020 01:04	04.21.2020 01:25	04.21.2020 01:45	04.21.2020 03:07
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202
Toluene		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202
Ethylbenzene		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202
m,p-Xylenes		<0.00397 0.00397	<0.00404 0.00404	<0.00399 0.00399	<0.00397 0.00397	<0.00399 0.00399	<0.00404 0.00404
o-Xylene		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202
Total Xylenes		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202
Total BTEX		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *
	<i>Analyzed:</i>	04.20.2020 21:12	04.20.2020 21:18	04.20.2020 21:24	04.20.2020 21:30	04.20.2020 21:36	04.20.2020 21:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		404 100	425 100	115 99.2	1070 98.0	184 99.6	876 98.8
TPH by SW8015 Mod	<i>Extracted:</i>	04.20.2020 17:00	04.21.2020 15:45	04.20.2020 17:00	04.20.2020 17:00	04.20.2020 17:00	04.20.2020 17:00
	<i>Analyzed:</i>	04.20.2020 23:00	04.21.2020 15:46	04.21.2020 00:01	04.21.2020 00:21	04.21.2020 00:41	04.21.2020 01:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<50.3 50.3	<49.9 49.9	<50.2 50.2	<49.8 49.8
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<50.3 50.3	<49.9 49.9	<50.2 50.2	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<50.3 50.3	<49.9 49.9	<50.2 50.2	<49.8 49.8
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<50.3 50.3	<49.9 49.9	<50.2 50.2	<49.8 49.8
Total TPH		<50.0 50.0	<50.0 50.0	<50.3 50.3	<49.9 49.9	<50.2 50.2	<49.8 49.8

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS06** Matrix: Soil Date Received: 04.20.2020 14:35
 Lab Sample Id: 659295-001 Date Collected: 04.18.2020 10:20 Sample Depth: 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.20.2020 14:24 Basis: Wet Weight
 Seq Number: 3123547

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	404	100	mg/kg	04.20.2020 21:12		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.20.2020 17:00 Basis: Wet Weight
 Seq Number: 3123609

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.20.2020 23:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.20.2020 23:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.20.2020 23:00	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.20.2020 23:00	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.20.2020 23:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	04.20.2020 23:00	
o-Terphenyl	84-15-1	113	%	70-135	04.20.2020 23:00	



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS06**
Lab Sample Id: 659295-001

Matrix: Soil
Date Collected: 04.18.2020 10:20

Date Received: 04.20.2020 14:35
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 17:08

Basis: Wet Weight

Seq Number: 3123539

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.21.2020 00:24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.21.2020 00:24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.21.2020 00:24	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.21.2020 00:24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.21.2020 00:24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.21.2020 00:24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.21.2020 00:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.21.2020 00:24	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.21.2020 00:24	



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS07** Matrix: Soil Date Received: 04.20.2020 14:35
 Lab Sample Id: 659295-002 Date Collected: 04.18.2020 13:10 Sample Depth: 6.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.20.2020 14:24 Basis: Wet Weight
 Seq Number: 3123547

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	425	100	mg/kg	04.20.2020 21:18		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.21.2020 15:45 Basis: Wet Weight
 Seq Number: 3123744

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.21.2020 15:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.21.2020 15:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.21.2020 15:46	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.21.2020 15:46	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.21.2020 15:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	04.21.2020 15:46	
o-Terphenyl	84-15-1	109	%	70-135	04.21.2020 15:46	



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS07**
Lab Sample Id: 659295-002

Matrix: Soil
Date Collected: 04.18.2020 13:10

Date Received: 04.20.2020 14:35
Sample Depth: 6.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 17:08

Basis: Wet Weight

Seq Number: 3123539

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.21.2020 00:44	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.21.2020 00:44	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.21.2020 00:44	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.21.2020 00:44	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.21.2020 00:44	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.21.2020 00:44	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.21.2020 00:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.21.2020 00:44		
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.21.2020 00:44		



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW12** Matrix: Soil Date Received: 04.20.2020 14:35
 Lab Sample Id: 659295-003 Date Collected: 04.18.2020 09:50 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.20.2020 14:24 Basis: Wet Weight
 Seq Number: 3123547

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	115	99.2	mg/kg	04.20.2020 21:24		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.20.2020 17:00 Basis: Wet Weight
 Seq Number: 3123609

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.21.2020 00:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.21.2020 00:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.21.2020 00:01	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.21.2020 00:01	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.21.2020 00:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	04.21.2020 00:01	
o-Terphenyl	84-15-1	106	%	70-135	04.21.2020 00:01	



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW12**
Lab Sample Id: 659295-003

Matrix: Soil
Date Collected: 04.18.2020 09:50

Date Received: 04.20.2020 14:35
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 17:08

Basis: Wet Weight

Seq Number: 3123539

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.21.2020 01:04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.21.2020 01:04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.21.2020 01:04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.21.2020 01:04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.21.2020 01:04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.21.2020 01:04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.21.2020 01:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.21.2020 01:04	
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.21.2020 01:04	



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW13** Matrix: Soil Date Received: 04.20.2020 14:35
 Lab Sample Id: 659295-004 Date Collected: 04.18.2020 09:50 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.20.2020 14:24 Basis: Wet Weight
 Seq Number: 3123547

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1070	98.0	mg/kg	04.20.2020 21:30		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.20.2020 17:00 Basis: Wet Weight
 Seq Number: 3123609

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.21.2020 00:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.21.2020 00:21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.21.2020 00:21	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.21.2020 00:21	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.21.2020 00:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	04.21.2020 00:21	
o-Terphenyl	84-15-1	103	%	70-135	04.21.2020 00:21	



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW13**
Lab Sample Id: 659295-004

Matrix: Soil
Date Collected: 04.18.2020 09:50

Date Received: 04.20.2020 14:35
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 17:08

Basis: Wet Weight

Seq Number: 3123539

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.21.2020 01:25	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.21.2020 01:25	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.21.2020 01:25	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.21.2020 01:25	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.21.2020 01:25	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	04.21.2020 01:25	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.21.2020 01:25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.21.2020 01:25		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.21.2020 01:25		



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW14** Matrix: Soil Date Received: 04.20.2020 14:35
 Lab Sample Id: 659295-005 Date Collected: 04.18.2020 12:30 Sample Depth: 0 - 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.20.2020 14:24 Basis: Wet Weight
 Seq Number: 3123547

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	184	99.6	mg/kg	04.20.2020 21:36		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.20.2020 17:00 Basis: Wet Weight
 Seq Number: 3123609

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.21.2020 00:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.21.2020 00:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.21.2020 00:41	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.21.2020 00:41	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.21.2020 00:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	04.21.2020 00:41	
o-Terphenyl	84-15-1	107	%	70-135	04.21.2020 00:41	



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW14**
Lab Sample Id: 659295-005

Matrix: Soil
Date Collected: 04.18.2020 12:30

Date Received: 04.20.2020 14:35
Sample Depth: 0 - 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 17:08

Basis: Wet Weight

Seq Number: 3123539

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.21.2020 01:45	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.21.2020 01:45	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.21.2020 01:45	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.21.2020 01:45	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.21.2020 01:45	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.21.2020 01:45	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.21.2020 01:45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.21.2020 01:45		
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.21.2020 01:45		



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW15** Matrix: Soil Date Received: 04.20.2020 14:35
 Lab Sample Id: 659295-006 Date Collected: 04.18.2020 13:00 Sample Depth: 0 - 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.20.2020 14:24 Basis: Wet Weight
 Seq Number: 3123547

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	876	98.8	mg/kg	04.20.2020 21:41		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.20.2020 17:00 Basis: Wet Weight
 Seq Number: 3123609

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.21.2020 01:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.21.2020 01:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.21.2020 01:01	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.21.2020 01:01	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.21.2020 01:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	04.21.2020 01:01	
o-Terphenyl	84-15-1	105	%	70-135	04.21.2020 01:01	



Certificate of Analytical Results 659295

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW15**
Lab Sample Id: 659295-006

Matrix: Soil
Date Collected: 04.18.2020 13:00

Date Received: 04.20.2020 14:35
Sample Depth: 0 - 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.20.2020 17:08

Basis: Wet Weight

Seq Number: 3123539

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.21.2020 03:07	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.21.2020 03:07	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.21.2020 03:07	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.21.2020 03:07	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.21.2020 03:07	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.21.2020 03:07	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.21.2020 03:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	04.21.2020 03:07		
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.21.2020 03:07		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Nash 302-402H

Analytical Method: Chloride by EPA 300

Seq Number: 3123547

MB Sample Id: 7701592-1-BLK

Matrix: Solid

LCS Sample Id: 7701592-1-BKS

Prep Method: E300P

Date Prep: 04.20.2020

LCSD Sample Id: 7701592-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	274	110	270	108	90-110	1	20	mg/kg	04.20.2020 19:04	

Analytical Method: Chloride by EPA 300

Seq Number: 3123547

Parent Sample Id: 659247-003

Matrix: Soil

MS Sample Id: 659247-003 S

Prep Method: E300P

Date Prep: 04.20.2020

MSD Sample Id: 659247-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	18.1	200	233	107	233	108	90-110	0	20	mg/kg	04.20.2020 19:20	

Analytical Method: Chloride by EPA 300

Seq Number: 3123547

Parent Sample Id: 659247-013

Matrix: Soil

MS Sample Id: 659247-013 S

Prep Method: E300P

Date Prep: 04.20.2020

MSD Sample Id: 659247-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<9.98	200	215	108	216	108	90-110	0	20	mg/kg	04.20.2020 20:37	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3123609

MB Sample Id: 7701654-1-BLK

Matrix: Solid

LCS Sample Id: 7701654-1-BKS

Prep Method: SW8015P

Date Prep: 04.20.2020

LCSD Sample Id: 7701654-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	993	99	943	94	70-135	5	35	mg/kg	04.20.2020 22:19	
Diesel Range Organics (DRO)	<50.0	1000	1160	116	1070	107	70-135	8	35	mg/kg	04.20.2020 22:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		112		108		70-135	%	04.20.2020 22:19
o-Terphenyl	98		112		102		70-135	%	04.20.2020 22:19

Analytical Method: TPH by SW8015 Mod

Seq Number: 3123744

MB Sample Id: 7701768-1-BLK

Matrix: Solid

LCS Sample Id: 7701768-1-BKS

Prep Method: SW8015P

Date Prep: 04.21.2020

LCSD Sample Id: 7701768-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	853	85	862	86	70-135	1	35	mg/kg	04.21.2020 14:57	
Diesel Range Organics (DRO)	<50.0	1000	953	95	964	96	70-135	1	35	mg/kg	04.21.2020 14:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		114		113		70-135	%	04.21.2020 14:57
o-Terphenyl	111		113		113		70-135	%	04.21.2020 14:57

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



LT Environmental, Inc.

Nash 302-402H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3123609

Matrix: Solid

Prep Method: SW8015P

Date Prep: 04.20.2020

MB Sample Id: 7701654-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.20.2020 21:59	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3123744

Matrix: Solid

Prep Method: SW8015P

Date Prep: 04.21.2020

MB Sample Id: 7701768-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.21.2020 14:36	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3123609

Matrix: Soil

Prep Method: SW8015P

Date Prep: 04.20.2020

Parent Sample Id: 659295-001

MS Sample Id: 659295-001 S

MSD Sample Id: 659295-001 SD

Parameter

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	998	907	91	868	87	70-135	4	35	mg/kg	04.20.2020 23:20	
Diesel Range Organics (DRO)	<49.9	998	1010	101	955	96	70-135	6	35	mg/kg	04.20.2020 23:20	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		126		70-135	%	04.20.2020 23:20
o-Terphenyl	115		111		70-135	%	04.20.2020 23:20

Analytical Method: TPH by SW8015 Mod

Seq Number: 3123744

Matrix: Soil

Prep Method: SW8015P

Date Prep: 04.21.2020

Parent Sample Id: 659295-002

MS Sample Id: 659295-002 S

MSD Sample Id: 659295-002 SD

Parameter

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	919	92	942	94	70-135	2	35	mg/kg	04.21.2020 16:35	
Diesel Range Organics (DRO)	<50.2	1000	1040	104	1070	107	70-135	3	35	mg/kg	04.21.2020 16:35	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		124		70-135	%	04.21.2020 16:35
o-Terphenyl	122		125		70-135	%	04.21.2020 16:35

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

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

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

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3123539

MB Sample Id: 7701629-1-BLK

Matrix: Solid

LCS Sample Id: 7701629-1-BKS

Prep Method: SW5030B

Date Prep: 04.20.2020

LCSD Sample Id: 7701629-1-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	0.108	108	0.105	105	70-130	3	35	mg/kg	04.20.2020 22:01	
Toluene	<0.00200	0.100	0.103	103	0.101	101	70-130	2	35	mg/kg	04.20.2020 22:01	
Ethylbenzene	<0.00200	0.100	0.0958	96	0.0949	95	71-129	1	35	mg/kg	04.20.2020 22:01	
m,p-Xylenes	<0.00400	0.200	0.197	99	0.194	97	70-135	2	35	mg/kg	04.20.2020 22:01	
o-Xylene	<0.00200	0.100	0.100	100	0.0984	98	71-133	2	35	mg/kg	04.20.2020 22:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		104		104		70-130	%	04.20.2020 22:01
4-Bromofluorobenzene	94		92		93		70-130	%	04.20.2020 22:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3123539

Parent Sample Id: 659293-002

Matrix: Soil

MS Sample Id: 659293-002 S

Prep Method: SW5030B

Date Prep: 04.20.2020

MSD Sample Id: 659293-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.104	103	0.109	108	70-130	5	35	mg/kg	04.20.2020 22:42	
Toluene	<0.00202	0.101	0.0983	97	0.104	103	70-130	6	35	mg/kg	04.20.2020 22:42	
Ethylbenzene	<0.00202	0.101	0.0914	90	0.0973	96	71-129	6	35	mg/kg	04.20.2020 22:42	
m,p-Xylenes	<0.00403	0.202	0.186	92	0.200	100	70-135	7	35	mg/kg	04.20.2020 22:42	
o-Xylene	<0.00202	0.101	0.0943	93	0.100	99	71-133	6	35	mg/kg	04.20.2020 22:42	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		70-130	%	04.20.2020 22:42
4-Bromofluorobenzene	94		94		70-130	%	04.20.2020 22:42

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



Chain of Custody

Work Order No.:

659295

Houston, TX (281) 240-4120 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3333
Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 575-392-7550
Hobbs, NM (575-392-7550)

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 Energy
Address:	3300 North A St. Bldg 1, Unit 222	Address:	3104 E Greene St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	(432) 701-2610	Email:	dmoir@ltenv.com mmcafee@ltenv.com
Project Name:	A / 1 2 2 1 1 2 2 1 1		

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

Project Number:		Turn Around
P.O. Number:		Routine ☒
Sampler's Name:	Robert McAfee	Rush:
Due Date:		

SAMPLE RECEIPT					
	Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (^o C):	8.4				Thermometer ID
Received Inact:	Yes No				T-NM-007
Cooler Custody Seals:	Yes No N/A				Correction Factor:
Sample Custody Seals:	Yes No N/A		Total Containers:		-0.2

ANALYSIS REQUEST								Work Order Notes
of Containers								
A 8015)								
PA 8021)								
(EPA 300.0)								
								TAT starts the day received by the

[illegible]

Total	200.7 / 6010	200.8 / 6020:
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[illegible]

Circle Method(s) and Metal(s) to be analyzed

1631 / 245.1 / 7470 / 7471 : Hg

ice: 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 to Xenco. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		4/20/20 1435			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.20.2020 02:35.00 PM

Work Order #: 659295

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)?	2.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 04.20.2020

Checklist reviewed by:



Jessica Kramer

Date: 04.21.2020



Analytical Report 659819

for

LT Environmental, Inc.

Project Manager: Dan Moir

Nash Unit 302H-402H

012919258

04.28.2020

Collected By: Client

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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



04.28.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **659819**

Nash Unit 302H-402H

Project Address: Eddy

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) 659819. 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. 659819 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 659819

LT Environmental, Inc., Arvada, CO

Nash Unit 302H-402H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS08	S	04.25.2020 13:01	1 ft	659819-001
FS09	S	04.25.2020 13:13	1 ft	659819-002
FS10	S	04.25.2020 13:23	1 ft	659819-003
FS11	S	04.25.2020 13:48	1.5 ft	659819-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash Unit 302H-402H*

Project ID: 012919258
Work Order Number(s): 659819

Report Date: 04.28.2020
Date Received: 04.27.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 659819

LT Environmental, Inc., Arvada, CO

Project Name: Nash Unit 302H-402H

Project Id: 012919258

Contact: Dan Moir

Project Location: Eddy

Date Received in Lab: Mon 04.27.2020 08:50

Report Date: 04.28.2020 12:23

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	659819-001	659819-002	659819-003	659819-004		
	<i>Field Id:</i>	FS08	FS09	FS10	FS11		
	<i>Depth:</i>	1- ft	1- ft	1- ft	1.5- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	04.25.2020 13:01	04.25.2020 13:13	04.25.2020 13:23	04.25.2020 13:48		
BTEX by EPA 8021B	<i>Extracted:</i>	04.27.2020 10:00	04.27.2020 10:00	04.27.2020 10:00	04.27.2020 10:00		
	<i>Analyzed:</i>	04.27.2020 12:46	04.27.2020 13:07	04.27.2020 13:28	04.27.2020 13:50		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00402 0.00402	<0.00403 0.00403	<0.00401 0.00401	<0.00401 0.00401		
o-Xylene		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200		
Chloride by EPA 300	<i>Extracted:</i>	04.27.2020 11:07	04.27.2020 11:07	04.27.2020 11:07	04.27.2020 11:07		
	<i>Analyzed:</i>	04.27.2020 11:17	04.27.2020 11:34	04.27.2020 11:39	04.27.2020 11:45		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		176 49.8	98.4 49.9	354 49.9	777 49.6		
TPH by SW8015 Mod	<i>Extracted:</i>	04.27.2020 12:30	04.27.2020 12:30	04.27.2020 12:30	04.27.2020 12:30		
	<i>Analyzed:</i>	04.27.2020 13:41	04.27.2020 13:41	04.27.2020 15:02	04.27.2020 15:40		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0		
Diesel Range Organics (DRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0		
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0		
Total GRO-DRO		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0		
Total TPH		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0		

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
Project Manager



Certificate of Analytical Results 659819

LT Environmental, Inc., Arvada, CO

Nash Unit 302H-402H

Sample Id: **FS08**
Lab Sample Id: 659819-001

Matrix: Soil
Date Collected: 04.25.2020 13:01

Date Received: 04.27.2020 08:50
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124305

Date Prep: 04.27.2020 11:07

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	176	49.8	mg/kg	04.27.2020 11:17		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124321

Date Prep: 04.27.2020 12:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.27.2020 13:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.27.2020 13:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.27.2020 13:41	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.27.2020 13:41	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.27.2020 13:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	04.27.2020 13:41	
o-Terphenyl	84-15-1	107	%	70-135	04.27.2020 13:41	



Certificate of Analytical Results 659819

LT Environmental, Inc., Arvada, CO

Nash Unit 302H-402H

Sample Id: **FS08**
Lab Sample Id: 659819-001

Matrix: Soil
Date Collected: 04.25.2020 13:01

Date Received: 04.27.2020 08:50
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.27.2020 10:00

Basis: Wet Weight

Seq Number: 3124300

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.27.2020 12:46	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.27.2020 12:46	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.27.2020 12:46	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.27.2020 12:46	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.27.2020 12:46	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.27.2020 12:46	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.27.2020 12:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115	%	70-130	04.27.2020 12:46	
4-Bromofluorobenzene	460-00-4	108	%	70-130	04.27.2020 12:46	



Certificate of Analytical Results 659819

LT Environmental, Inc., Arvada, CO

Nash Unit 302H-402H

Sample Id: **FS09** Matrix: Soil Date Received: 04.27.2020 08:50
 Lab Sample Id: 659819-002 Date Collected: 04.25.2020 13:13 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.27.2020 11:07 Basis: Wet Weight
 Seq Number: 3124305

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	98.4	49.9	mg/kg	04.27.2020 11:34		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.27.2020 12:30 Basis: Wet Weight
 Seq Number: 3124331

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.27.2020 13:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.27.2020 13:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.27.2020 13:41	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.27.2020 13:41	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.27.2020 13:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	04.27.2020 13:41	
o-Terphenyl	84-15-1	105	%	70-135	04.27.2020 13:41	



Certificate of Analytical Results 659819

LT Environmental, Inc., Arvada, CO

Nash Unit 302H-402H

Sample Id: **FS09**
Lab Sample Id: 659819-002

Matrix: Soil
Date Collected: 04.25.2020 13:13

Date Received: 04.27.2020 08:50
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.27.2020 10:00

Basis: Wet Weight

Seq Number: 3124300

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.27.2020 13:07	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.27.2020 13:07	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.27.2020 13:07	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.27.2020 13:07	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.27.2020 13:07	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	04.27.2020 13:07	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.27.2020 13:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	107	%	70-130	04.27.2020 13:07		
1,4-Difluorobenzene	540-36-3	117	%	70-130	04.27.2020 13:07		



Certificate of Analytical Results 659819

LT Environmental, Inc., Arvada, CO

Nash Unit 302H-402H

Sample Id: **FS10**
Lab Sample Id: 659819-003

Matrix: Soil
Date Collected: 04.25.2020 13:23

Date Received: 04.27.2020 08:50
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3124305

Date Prep: 04.27.2020 11:07

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	354	49.9	mg/kg	04.27.2020 11:39		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3124321

Date Prep: 04.27.2020 12:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.27.2020 15:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.27.2020 15:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.27.2020 15:02	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.27.2020 15:02	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.27.2020 15:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	04.27.2020 15:02	
o-Terphenyl	84-15-1	108	%	70-135	04.27.2020 15:02	



Certificate of Analytical Results 659819

LT Environmental, Inc., Arvada, CO

Nash Unit 302H-402H

Sample Id: **FS10**
Lab Sample Id: 659819-003

Matrix: Soil
Date Collected: 04.25.2020 13:23

Date Received: 04.27.2020 08:50
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.27.2020 10:00

Basis: Wet Weight

Seq Number: 3124300

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.27.2020 13:28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.27.2020 13:28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.27.2020 13:28	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.27.2020 13:28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.27.2020 13:28	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.27.2020 13:28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.27.2020 13:28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	04.27.2020 13:28		
1,4-Difluorobenzene	540-36-3	116	%	70-130	04.27.2020 13:28		



Certificate of Analytical Results 659819

LT Environmental, Inc., Arvada, CO

Nash Unit 302H-402H

Sample Id: **FS11** Matrix: Soil Date Received: 04.27.2020 08:50
 Lab Sample Id: 659819-004 Date Collected: 04.25.2020 13:48 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.27.2020 11:07 Basis: Wet Weight
 Seq Number: 3124305

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	777	49.6	mg/kg	04.27.2020 11:45		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.27.2020 12:30 Basis: Wet Weight
 Seq Number: 3124321

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.27.2020 15:40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.27.2020 15:40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.27.2020 15:40	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.27.2020 15:40	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.27.2020 15:40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	04.27.2020 15:40	
o-Terphenyl	84-15-1	107	%	70-135	04.27.2020 15:40	



Certificate of Analytical Results 659819

LT Environmental, Inc., Arvada, CO

Nash Unit 302H-402H

Sample Id: **FS11**
Lab Sample Id: 659819-004

Matrix: Soil
Date Collected: 04.25.2020 13:48

Date Received: 04.27.2020 08:50
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.27.2020 10:00

Basis: Wet Weight

Seq Number: 3124300

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.27.2020 13:50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.27.2020 13:50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.27.2020 13:50	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.27.2020 13:50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.27.2020 13:50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.27.2020 13:50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.27.2020 13:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115	%	70-130	04.27.2020 13:50	
4-Bromofluorobenzene	460-00-4	106	%	70-130	04.27.2020 13:50	



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Nash Unit 302H-402H

Analytical Method: Chloride by EPA 300

Seq Number: 3124305

MB Sample Id: 7702087-1-BLK

Matrix: Solid

LCS Sample Id: 7702087-1-BKS

Prep Method: E300P

Date Prep: 04.27.2020

LCSD Sample Id: 7702087-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	250	100	250	100	90-110	0	20	mg/kg	04.27.2020 11:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3124305

Parent Sample Id: 659819-001

Matrix: Soil

MS Sample Id: 659819-001 S

Prep Method: E300P

Date Prep: 04.27.2020

MSD Sample Id: 659819-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	176	200	364	94	356	90	90-110	2	20	mg/kg	04.27.2020 11:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3124305

Parent Sample Id: 659820-007

Matrix: Soil

MS Sample Id: 659820-007 S

Prep Method: E300P

Date Prep: 04.27.2020

MSD Sample Id: 659820-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	39.2	199	243	102	243	102	90-110	0	20	mg/kg	04.27.2020 12:39	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124321

MB Sample Id: 7702167-1-BLK

Matrix: Solid

LCS Sample Id: 7702167-1-BKS

Prep Method: SW8015P

Date Prep: 04.27.2020

LCSD Sample Id: 7702167-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	858	86	967	97	70-135	12	35	mg/kg	04.27.2020 13:00	
Diesel Range Organics (DRO)	<50.0	1000	958	96	1090	109	70-135	13	35	mg/kg	04.27.2020 13:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		127		132		70-135	%	04.27.2020 13:00
o-Terphenyl	131		127		122		70-135	%	04.27.2020 13:00

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124331

MB Sample Id: 7702173-1-BLK

Matrix: Solid

LCS Sample Id: 7702173-1-BKS

Prep Method: SW8015P

Date Prep: 04.27.2020

LCSD Sample Id: 7702173-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	914	91	898	90	70-135	2	35	mg/kg	04.27.2020 14:22	
Diesel Range Organics (DRO)	<50.0	1000	1020	102	998	100	70-135	2	35	mg/kg	04.27.2020 14:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	86		130		131		70-135	%	04.27.2020 14:22
o-Terphenyl	91		116		132		70-135	%	04.27.2020 14:22

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

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

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

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



LT Environmental, Inc.

Nash Unit 302H-402H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124321

Matrix: Solid

Prep Method: SW8015P

Date Prep: 04.27.2020

MB Sample Id: 7702167-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

MB
Result

<50.0

Units

mg/kg

Analysis
Date

04.27.2020 12:40

Flag

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124331

Matrix: Solid

Prep Method: SW8015P

Date Prep: 04.27.2020

MB Sample Id: 7702173-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

MB
Result

<50.0

Units

mg/kg

Analysis
Date

04.27.2020 12:40

Flag

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124321

Matrix: Soil

Prep Method: SW8015P

Date Prep: 04.27.2020

Parent Sample Id: 659819-001

MS Sample Id: 659819-001 S

MSD Sample Id: 659819-001 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

Parent
Result

<50.3

Spike
Amount

1010

MS
Result

935

MS
%Rec

93

MSD
Result

935

MSD
%Rec

94

Limits

70-135

%RPD

0

RPD
Limit

35

Units

mg/kg

Analysis
Date

04.27.2020 14:01

Flag

Diesel Range Organics (DRO)

<50.3

1010

1060

105

1060

106

70-135

0

35

mg/kg

04.27.2020 14:01

Surrogate

1-Chlorooctane

MS
%Rec

118

MS
FlagMSD
%Rec

114

MSD
Flag

Limits

70-135

Units

%

Analysis
Date

04.27.2020 14:01

o-Terphenyl

115

114

70-135

%

04.27.2020 14:01

Analytical Method: TPH by SW8015 Mod

Seq Number: 3124331

Matrix: Soil

Prep Method: SW8015P

Date Prep: 04.27.2020

Parent Sample Id: 659819-002

MS Sample Id: 659819-002 S

MSD Sample Id: 659819-002 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

Parent
Result

<50.3

Spike
Amount

1010

MS
Result

812

MS
%Rec

80

MSD
Result

864

MSD
%Rec

86

Limits

70-135

%RPD

6

RPD
Limit

35

Units

mg/kg

Analysis
Date

04.27.2020 14:01

Flag

Diesel Range Organics (DRO)

<50.3

1010

877

87

971

97

70-135

10

35

mg/kg

04.27.2020 14:01

Surrogate

1-Chlorooctane

MS
%Rec

115

MS
FlagMSD
%Rec

105

MSD
Flag

Limits

70-135

Units

%

Analysis
Date

04.27.2020 14:01

o-Terphenyl

102

109

70-135

%

04.27.2020 14:01

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

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

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

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



LT Environmental, Inc.

Nash Unit 302H-402H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3124300

MB Sample Id: 7702088-1-BLK

Matrix: Solid

LCS Sample Id: 7702088-1-BKS

Prep Method: SW5035A

Date Prep: 04.27.2020

LCSD Sample Id: 7702088-1-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	0.123	123	0.124	124	70-130	1	35	mg/kg	04.27.2020 10:59	
Toluene	<0.00200	0.100	0.109	109	0.110	110	70-130	1	35	mg/kg	04.27.2020 10:59	
Ethylbenzene	<0.00200	0.100	0.101	101	0.102	102	71-129	1	35	mg/kg	04.27.2020 10:59	
m,p-Xylenes	<0.00400	0.200	0.196	98	0.196	98	70-135	0	35	mg/kg	04.27.2020 10:59	
o-Xylene	<0.00200	0.100	0.102	102	0.103	103	71-133	1	35	mg/kg	04.27.2020 10:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		108		111		70-130	%	04.27.2020 10:59
4-Bromofluorobenzene	102		97		98		70-130	%	04.27.2020 10:59

Analytical Method: BTEX by EPA 8021B

Seq Number: 3124300

Parent Sample Id: 659819-001

Matrix: Soil

MS Sample Id: 659819-001 S

Prep Method: SW5035A

Date Prep: 04.27.2020

MSD Sample Id: 659819-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0990	0.121	122	0.112	113	70-130	8	35	mg/kg	04.27.2020 11:41	
Toluene	<0.00198	0.0990	0.118	119	0.0994	100	70-130	17	35	mg/kg	04.27.2020 11:41	
Ethylbenzene	<0.00198	0.0990	0.112	113	0.0914	92	71-129	20	35	mg/kg	04.27.2020 11:41	
m,p-Xylenes	<0.00396	0.198	0.218	110	0.177	89	70-135	21	35	mg/kg	04.27.2020 11:41	
o-Xylene	<0.00198	0.0990	0.110	111	0.0922	93	71-133	18	35	mg/kg	04.27.2020 11:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		70-130	%	04.27.2020 11:41
4-Bromofluorobenzene	99		95		70-130	%	04.27.2020 11:41

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



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 281-1111
Hobbs, NM (575-392-7550)

Page 1 of 1

Chain of Custody

Work Order No: 00101

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

Work Order Comments									
Program: UST/PST ☐ RP ☐ Growntfields ☐ RC ☐ Spurfund ☐									
State of Project:									
Reporting: Level II ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐									
Deliverables: EDD ☐ ADAPT ☐ Other: ☐									

ANALYSIS REQUEST

WORK CIRCUMSTANCES

Project Name:		Routine	☒
Project Number:	M2919258	Rush:	
P.O. Number:	Eddy	Due Date:	
Sampler's Name:	William Mather		
SAMPLE RECEIPT		Temp Blank:	☒ Yes ☐ No
Temperature (°C):	1.3	Wet Ice:	☒ Yes ☐ No
Received In tact:	☒ Yes ☐ No	Thermometer ID	T-224-004
Cooler Custody Seals:	☒ Yes ☐ No	Correction Factor:	-0.2
Sample Custody Seals:	☒ Yes ☐ No	Total Containers:	4

[illegible][illegible]

Total	200.7 / 6010	200.8 / 6020:
-------	--------------	---------------

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Cl H₂O V Zn
1631/245.1/7470/7471:Hg

Circle Method(s) and Metal(s) to be analyzed

[illegible]

1631 / 245.1 / 7470 / 7471: Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	4/27/20 / 3:00 PM	<i>[Signature]</i>	<i>[Signature]</i>	050642
<i>[Signature]</i>					

Revised Date 05/4/18 Rev. 2016



Certificate of Analysis Summary 661295

LT Environmental, Inc., Arvada, CO

Project Name: Nash 302 -402

Project Id: 012919258

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 05.12.2020 14:01

Report Date: 05.15.2020 08:47

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	661295-001	661295-002	661295-003	661295-004	661295-005	661295-006
	<i>Field Id:</i>	FS11A	FS12	SW16	SW17	SW18	SW19
	<i>Depth:</i>	4.5- ft	5.5- ft	0-4 ft	0-4 ft	0-5.5 ft	0-5.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	05.09.2020 13:00	05.09.2020 14:01	05.09.2020 11:00	05.09.2020 11:05	05.09.2020 14:05	05.09.2020 14:10
BTEX by EPA 8021B	<i>Extracted:</i>	05.12.2020 15:00	05.12.2020 15:00	05.12.2020 15:00	05.12.2020 15:00	05.12.2020 15:00	05.12.2020 15:00
	<i>Analyzed:</i>	05.12.2020 22:45	05.12.2020 23:06	05.12.2020 23:28	05.12.2020 23:49	05.13.2020 00:11	05.13.2020 00:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00402 0.00402	<0.00402 0.00402	<0.00396 0.00396	<0.00403 0.00403	<0.00401 0.00401
o-Xylene		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	05.12.2020 17:00	05.12.2020 17:00	05.12.2020 17:00	05.12.2020 17:00	05.12.2020 17:00	05.12.2020 17:00
	<i>Analyzed:</i>	05.12.2020 23:55	05.13.2020 00:01	05.13.2020 00:07	05.13.2020 00:24	05.13.2020 00:30	05.13.2020 00:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		78.4 10.1	159 100	1150 99.6	289 101	1540 101	427 50.1
TPH by SW8015 Mod	<i>Extracted:</i>	05.13.2020 11:40	05.13.2020 11:40	05.13.2020 11:40	05.13.2020 11:40	05.13.2020 11:40	05.13.2020 11:40
	<i>Analyzed:</i>	05.14.2020 00:09	05.14.2020 00:30	05.14.2020 00:50	05.14.2020 01:11	05.14.2020 01:32	05.14.2020 01:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2	<50.2 50.2
Diesel Range Organics (DRO)		<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2	<50.2 50.2
Total GRO-DRO		<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2	<50.2 50.2
Total TPH		<50.1 50.1	<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2	<50.2 50.2

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

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

Jessica Kramer
Project Manager



Analytical Report 661295

for

LT Environmental, Inc.

Project Manager: Dan Moir

Nash 302 -402

012919258

05.15.2020

Collected By: Client

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

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

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

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



05.15.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **661295**

Nash 302 -402

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 661295. 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. 661295 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 Manager

A Small Business and Minority Company

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



Sample Cross Reference 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS11A	S	05.09.2020 13:00	4.5 ft	661295-001
FS12	S	05.09.2020 14:01	5.5 ft	661295-002
SW16	S	05.09.2020 11:00	0 - 4 ft	661295-003
SW17	S	05.09.2020 11:05	0 - 4 ft	661295-004
SW18	S	05.09.2020 14:05	0 - 5.5 ft	661295-005
SW19	S	05.09.2020 14:10	0 - 5.5 ft	661295-006



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 302 -402*

Project ID: 012919258
Work Order Number(s): 661295

Report Date: 05.15.2020
Date Received: 05.12.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **FS11A** Matrix: Soil Date Received: 05.12.2020 14:01
 Lab Sample Id: 661295-001 Date Collected: 05.09.2020 13:00 Sample Depth: 4.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.12.2020 17:00 Basis: Wet Weight
 Seq Number: 3125748

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	78.4	10.1	mg/kg	05.12.2020 23:55		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.13.2020 11:40 Basis: Wet Weight
 Seq Number: 3125908

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.14.2020 00:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	05.14.2020 00:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.14.2020 00:09	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	05.14.2020 00:09	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	05.14.2020 00:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	05.14.2020 00:09	
o-Terphenyl	84-15-1	115	%	70-135	05.14.2020 00:09	



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **FS11A**
Lab Sample Id: 661295-001

Matrix: Soil
Date Collected: 05.09.2020 13:00

Date Received: 05.12.2020 14:01
Sample Depth: 4.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3125753

Prep Method: SW5035A

% Moisture:

Date Prep: 05.12.2020 15:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.12.2020 22:45	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.12.2020 22:45	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.12.2020 22:45	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.12.2020 22:45	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.12.2020 22:45	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.12.2020 22:45	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.12.2020 22:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	05.12.2020 22:45	
4-Bromofluorobenzene	460-00-4	108	%	70-130	05.12.2020 22:45	



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **FS12** Matrix: Soil Date Received: 05.12.2020 14:01
 Lab Sample Id: 661295-002 Date Collected: 05.09.2020 14:01 Sample Depth: 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.12.2020 17:00 Basis: Wet Weight
 Seq Number: 3125748

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	159	100	mg/kg	05.13.2020 00:01		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.13.2020 11:40 Basis: Wet Weight
 Seq Number: 3125908

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.14.2020 00:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.14.2020 00:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.14.2020 00:30	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	05.14.2020 00:30	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.14.2020 00:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	05.14.2020 00:30	
o-Terphenyl	84-15-1	118	%	70-135	05.14.2020 00:30	



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **FS12**
Lab Sample Id: 661295-002

Matrix: Soil
Date Collected: 05.09.2020 14:01

Date Received: 05.12.2020 14:01
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3125753

Prep Method: SW5035A

% Moisture:

Date Prep: 05.12.2020 15:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.12.2020 23:06	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.12.2020 23:06	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.12.2020 23:06	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.12.2020 23:06	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.12.2020 23:06	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.12.2020 23:06	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.12.2020 23:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.12.2020 23:06	
4-Bromofluorobenzene	460-00-4	105	%	70-130	05.12.2020 23:06	



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **SW16** Matrix: Soil Date Received: 05.12.2020 14:01
 Lab Sample Id: 661295-003 Date Collected: 05.09.2020 11:00 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.12.2020 17:00 Basis: Wet Weight
 Seq Number: 3125748

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1150	99.6	mg/kg	05.13.2020 00:07		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.13.2020 11:40 Basis: Wet Weight
 Seq Number: 3125908

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.14.2020 00:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.14.2020 00:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.14.2020 00:50	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	05.14.2020 00:50	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.14.2020 00:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	05.14.2020 00:50	
o-Terphenyl	84-15-1	112	%	70-135	05.14.2020 00:50	



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **SW16**
Lab Sample Id: 661295-003

Matrix: Soil
Date Collected: 05.09.2020 11:00

Date Received: 05.12.2020 14:01
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.12.2020 15:00

Basis: Wet Weight

Seq Number: 3125753

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.12.2020 23:28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.12.2020 23:28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.12.2020 23:28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.12.2020 23:28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.12.2020 23:28	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.12.2020 23:28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.12.2020 23:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	05.12.2020 23:28	
4-Bromofluorobenzene	460-00-4	107	%	70-130	05.12.2020 23:28	



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **SW17** Matrix: Soil Date Received: 05.12.2020 14:01
 Lab Sample Id: 661295-004 Date Collected: 05.09.2020 11:05 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.12.2020 17:00 Basis: Wet Weight
 Seq Number: 3125748

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	289	101	mg/kg	05.13.2020 00:24		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.13.2020 11:40 Basis: Wet Weight
 Seq Number: 3125908

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.14.2020 01:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	05.14.2020 01:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.14.2020 01:11	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	05.14.2020 01:11	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	05.14.2020 01:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	05.14.2020 01:11	
o-Terphenyl	84-15-1	116	%	70-135	05.14.2020 01:11	



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **SW17**
Lab Sample Id: 661295-004

Matrix: Soil
Date Collected: 05.09.2020 11:05

Date Received: 05.12.2020 14:01
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.12.2020 15:00

Basis: Wet Weight

Seq Number: 3125753

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.12.2020 23:49	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.12.2020 23:49	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.12.2020 23:49	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	05.12.2020 23:49	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.12.2020 23:49	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.12.2020 23:49	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.12.2020 23:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	05.12.2020 23:49	
4-Bromofluorobenzene	460-00-4	106	%	70-130	05.12.2020 23:49	



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **SW18** Matrix: Soil Date Received: 05.12.2020 14:01
 Lab Sample Id: 661295-005 Date Collected: 05.09.2020 14:05 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.12.2020 17:00 Basis: Wet Weight
 Seq Number: 3125748

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1540	101	mg/kg	05.13.2020 00:30		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.13.2020 11:40 Basis: Wet Weight
 Seq Number: 3125908

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.14.2020 01:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.14.2020 01:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.14.2020 01:32	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	05.14.2020 01:32	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.14.2020 01:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	05.14.2020 01:32	
o-Terphenyl	84-15-1	112	%	70-135	05.14.2020 01:32	



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **SW18**
Lab Sample Id: 661295-005

Matrix: Soil
Date Collected: 05.09.2020 14:05

Date Received: 05.12.2020 14:01
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.12.2020 15:00

Basis: Wet Weight

Seq Number: 3125753

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.13.2020 00:11	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.13.2020 00:11	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.13.2020 00:11	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.13.2020 00:11	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.13.2020 00:11	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.13.2020 00:11	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.13.2020 00:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	05.13.2020 00:11	
4-Bromofluorobenzene	460-00-4	108	%	70-130	05.13.2020 00:11	



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **SW19** Matrix: Soil Date Received: 05.12.2020 14:01
 Lab Sample Id: 661295-006 Date Collected: 05.09.2020 14:10 Sample Depth: 0 - 5.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.12.2020 17:00 Basis: Wet Weight
 Seq Number: 3125748

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	427	50.1	mg/kg	05.13.2020 00:48		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.13.2020 11:40 Basis: Wet Weight
 Seq Number: 3125908

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.14.2020 01:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.14.2020 01:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.14.2020 01:53	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	05.14.2020 01:53	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.14.2020 01:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	05.14.2020 01:53	
o-Terphenyl	84-15-1	118	%	70-135	05.14.2020 01:53	



Certificate of Analytical Results 661295

LT Environmental, Inc., Arvada, CO

Nash 302 -402

Sample Id: **SW19**
Lab Sample Id: 661295-006

Matrix: Soil
Date Collected: 05.09.2020 14:10

Date Received: 05.12.2020 14:01
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3125753

Prep Method: SW5035A

% Moisture:

Date Prep: 05.12.2020 15:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.13.2020 00:32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.13.2020 00:32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.13.2020 00:32	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.13.2020 00:32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.13.2020 00:32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.13.2020 00:32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.13.2020 00:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	05.13.2020 00:32	
4-Bromofluorobenzene	460-00-4	105	%	70-130	05.13.2020 00:32	



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Nash 302 -402

Analytical Method: Chloride by EPA 300

Seq Number: 3125748

MB Sample Id: 7703192-1-BLK

Matrix: Solid

LCS Sample Id: 7703192-1-BKS

Prep Method: E300P

Date Prep: 05.12.2020

LCSD Sample Id: 7703192-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	251	100	250	100	90-110	0	20	mg/kg	05.12.2020 22:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3125748

Parent Sample Id: 661220-014

Matrix: Soil

MS Sample Id: 661220-014 S

Prep Method: E300P

Date Prep: 05.12.2020

MSD Sample Id: 661220-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	55.9	200	251	98	253	98	90-110	1	20	mg/kg	05.12.2020 22:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3125748

Parent Sample Id: 661295-003

Matrix: Soil

MS Sample Id: 661295-003 S

Prep Method: E300P

Date Prep: 05.12.2020

MSD Sample Id: 661295-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1150	201	1330	90	1350	99	90-110	1	20	mg/kg	05.13.2020 00:13	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3125908

MB Sample Id: 7703305-1-BLK

Matrix: Solid

LCS Sample Id: 7703305-1-BKS

Prep Method: SW8015P

Date Prep: 05.13.2020

LCSD Sample Id: 7703305-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	991	99	996	100	70-135	1	35	mg/kg	05.14.2020 09:59	
Diesel Range Organics (DRO)	<50.0	1000	1110	111	1090	109	70-135	2	35	mg/kg	05.14.2020 09:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	135		123		122		70-135	%	05.14.2020 09:59
o-Terphenyl	135		124		121		70-135	%	05.14.2020 09:59

Analytical Method: TPH by SW8015 Mod

Seq Number: 3125908

Matrix: Solid

MB Sample Id: 7703305-1-BLK

Prep Method: SW8015P

Date Prep: 05.13.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	05.13.2020 12:23	

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



LT Environmental, Inc.

Nash 302 -402

Analytical Method: TPH by SW8015 Mod

Seq Number: 3125908

Parent Sample Id: 661180-001

Matrix: Soil

MS Sample Id: 661180-001 S

Prep Method: SW8015P

Date Prep: 05.13.2020

MSD Sample Id: 661180-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	1010	101	1040	104	70-135	3	35	mg/kg	05.13.2020 23:07	
Diesel Range Organics (DRO)	1090	1000	2130	104	2300	121	70-135	8	35	mg/kg	05.13.2020 23:07	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		122		70-135	%	05.13.2020 23:07
o-Terphenyl	107		110		70-135	%	05.13.2020 23:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3125753

MB Sample Id: 7703187-1-BLK

Matrix: Solid

LCS Sample Id: 7703187-1-BKS

Prep Method: SW5035A

Date Prep: 05.12.2020

LCSD Sample Id: 7703187-1-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	0.111	111	0.112	113	70-130	1	35	mg/kg	05.12.2020 15:14	
Toluene	<0.00200	0.100	0.101	101	0.103	104	70-130	2	35	mg/kg	05.12.2020 15:14	
Ethylbenzene	<0.00200	0.100	0.0937	94	0.0960	97	71-129	2	35	mg/kg	05.12.2020 15:14	
m,p-Xylenes	<0.00400	0.200	0.181	91	0.185	93	70-135	2	35	mg/kg	05.12.2020 15:14	
o-Xylene	<0.00200	0.100	0.0941	94	0.0961	97	71-133	2	35	mg/kg	05.12.2020 15:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		106		108		70-130	%	05.12.2020 15:14
4-Bromofluorobenzene	106		99		100		70-130	%	05.12.2020 15:14

Analytical Method: BTEX by EPA 8021B

Seq Number: 3125753

Parent Sample Id: 661220-008

Matrix: Soil

MS Sample Id: 661220-008 S

Prep Method: SW5035A

Date Prep: 05.12.2020

MSD Sample Id: 661220-008 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	0.130	130	0.127	127	70-130	2	35	mg/kg	05.12.2020 15:57	
Toluene	<0.00200	0.0998	0.118	118	0.115	115	70-130	3	35	mg/kg	05.12.2020 15:57	
Ethylbenzene	<0.00200	0.0998	0.111	111	0.109	109	71-129	2	35	mg/kg	05.12.2020 15:57	
m,p-Xylenes	<0.00399	0.200	0.216	108	0.212	106	70-135	2	35	mg/kg	05.12.2020 15:57	
o-Xylene	<0.00200	0.0998	0.110	110	0.108	108	71-133	2	35	mg/kg	05.12.2020 15:57	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		107		70-130	%	05.12.2020 15:57
4-Bromofluorobenzene	102		101		70-130	%	05.12.2020 15:57

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

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

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

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



Chain of Custody

Work Order No:

1601295

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) 449-8900 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 Energy
Address:	3300 North A St. Bldg 1, Unit 222	Address:	3104 E Greene St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	(432) 701-2610	Email:	dmoir@ltenv.com mcafee@ltenv.com

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

Project Name:	Nash 302-402	Turn Around	
Project Number:	012919258	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
	Temperature (°C):	4.0	Thermometer ID	
	Received Inact:	Yes ☒ No ☐	Correction Factor:	
	Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	
	Sample Custody Seals:	Yes ☒ No ☐ N/A	0	

6:12 AM

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP	BTEX (E	Chloride	Sample Comments										
FS11A	S	05/09/20	1300	4.5'	1	X	X	X											
FS12			1401	5.5'		X	X	X											
SW16			1100	0-4'		X	X	X											
SW17			1105	0-4'		X	X	X											
SW18			1405	0-5.5'		X	X	X											
SW19			1410	0-5.5'		X	X	X											
										Composite									

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

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 to Xenco. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		5/12/20 14:00			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 05.12.2020 02.01.00 PM

Work Order #: 661295

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

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

Samples received in bulk containers.

* 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: 05.12.2020

Checklist reviewed by:



Jessica Kramer

Date: 05.14.2020



Certificate of Analysis Summary 661912

LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H

Project Id: 012919258

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon 05.18.2020 17:00

Report Date: 05.20.2020 08:40

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	661912-001	661912-002	661912-003	661912-004		
	<i>Field Id:</i>	FS13	FS14	SW20	SW21		
	<i>Depth:</i>	3- ft	3- ft	0-3 ft	0-3 ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	05.17.2020 14:25	05.17.2020 14:27	05.17.2020 14:22	05.17.2020 14:30		
BTEX by EPA 8021B	<i>Extracted:</i>	05.18.2020 17:37	05.18.2020 17:37	05.18.2020 17:37	05.18.2020 17:37		
	<i>Analyzed:</i>	05.19.2020 03:01	05.19.2020 03:21	05.19.2020 03:42	05.19.2020 04:02		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
Toluene		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
m,p-Xylenes		<0.00398 0.00398	<0.00402 0.00402	<0.00398 0.00398	<0.00398 0.00398		
o-Xylene		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
Total Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
Total BTEX		<0.00199 0.00199	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199		
Chloride by EPA 300	<i>Extracted:</i>	05.18.2020 17:31	05.18.2020 17:31	05.18.2020 17:31	05.18.2020 17:31		
	<i>Analyzed:</i>	05.18.2020 20:02	05.18.2020 20:08	05.18.2020 20:26	05.18.2020 20:32		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		21.5 9.92	342 49.7	28.7 9.92	320 50.1		
TPH by SW8015 Mod	<i>Extracted:</i>	05.18.2020 17:30	05.18.2020 17:30	05.18.2020 17:30	05.18.2020 17:30		
	<i>Analyzed:</i>	05.18.2020 21:42	05.18.2020 22:03	05.18.2020 22:24	05.18.2020 22:03		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.0 50.0		
Diesel Range Organics (DRO)		<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.0 50.0		
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.0 50.0		
Total GRO-DRO		<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.0 50.0		
Total TPH		<50.1 50.1	<50.1 50.1	<50.2 50.2	<50.0 50.0		

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
Project Manager



Analytical Report 661912

for

LT Environmental, Inc.

Project Manager: Dan Moir

Nash 302-402H

012919258

05.20.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

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

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



05.20.2020

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

Reference: XENCO Report No(s): **661912**
Nash 302-402H
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 661912. 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. 661912 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 Manager

A Small Business and Minority Company

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



Sample Cross Reference 661912

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS13	S	05.17.2020 14:25	3 ft	661912-001
FS14	S	05.17.2020 14:27	3 ft	661912-002
SW20	S	05.17.2020 14:22	0 - 3 ft	661912-003
SW21	S	05.17.2020 14:30	0 - 3 ft	661912-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 302-402H*

Project ID: 012919258
Work Order Number(s): 661912

Report Date: 05.20.2020
Date Received: 05.18.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 661912

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS13** Matrix: Soil Date Received: 05.18.2020 17:00
 Lab Sample Id: 661912-001 Date Collected: 05.17.2020 14:25 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.18.2020 17:31 Basis: Wet Weight
 Seq Number: 3126324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.5	9.92	mg/kg	05.18.2020 20:02		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.18.2020 17:30 Basis: Wet Weight
 Seq Number: 3126291

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.18.2020 21:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	05.18.2020 21:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.18.2020 21:42	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	05.18.2020 21:42	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	05.18.2020 21:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	05.18.2020 21:42	
o-Terphenyl	84-15-1	132	%	70-135	05.18.2020 21:42	



Certificate of Analytical Results 661912

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS13**
Lab Sample Id: 661912-001

Matrix: Soil
Date Collected: 05.17.2020 14:25

Date Received: 05.18.2020 17:00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.18.2020 17:37

Basis: Wet Weight

Seq Number: 3126321

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.19.2020 03:01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.19.2020 03:01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.19.2020 03:01	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.19.2020 03:01	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.19.2020 03:01	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.19.2020 03:01	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.19.2020 03:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	05.19.2020 03:01	
4-Bromofluorobenzene	460-00-4	101	%	70-130	05.19.2020 03:01	



Certificate of Analytical Results 661912

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS14** Matrix: Soil Date Received: 05.18.2020 17:00
 Lab Sample Id: 661912-002 Date Collected: 05.17.2020 14:27 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.18.2020 17:31 Basis: Wet Weight
 Seq Number: 3126324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	342	49.7	mg/kg	05.18.2020 20:08		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.18.2020 17:30 Basis: Wet Weight
 Seq Number: 3126291

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.18.2020 22:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	05.18.2020 22:03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.18.2020 22:03	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	05.18.2020 22:03	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	05.18.2020 22:03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	05.18.2020 22:03	
o-Terphenyl	84-15-1	125	%	70-135	05.18.2020 22:03	



Certificate of Analytical Results 661912

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS14**
Lab Sample Id: 661912-002

Matrix: Soil
Date Collected: 05.17.2020 14:27

Date Received: 05.18.2020 17:00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.18.2020 17:37

Basis: Wet Weight

Seq Number: 3126321

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.19.2020 03:21	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.19.2020 03:21	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.19.2020 03:21	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.19.2020 03:21	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.19.2020 03:21	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.19.2020 03:21	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.19.2020 03:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	05.19.2020 03:21	
1,4-Difluorobenzene	540-36-3	106	%	70-130	05.19.2020 03:21	



Certificate of Analytical Results 661912

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW20** Matrix: Soil Date Received: 05.18.2020 17:00
 Lab Sample Id: 661912-003 Date Collected: 05.17.2020 14:22 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.18.2020 17:31 Basis: Wet Weight
 Seq Number: 3126324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28.7	9.92	mg/kg	05.18.2020 20:26		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.18.2020 17:30 Basis: Wet Weight
 Seq Number: 3126291

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.18.2020 22:24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.18.2020 22:24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.18.2020 22:24	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	05.18.2020 22:24	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.18.2020 22:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	05.18.2020 22:24	
o-Terphenyl	84-15-1	131	%	70-135	05.18.2020 22:24	



Certificate of Analytical Results 661912

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW20**
Lab Sample Id: 661912-003

Matrix: Soil
Date Collected: 05.17.2020 14:22

Date Received: 05.18.2020 17:00
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.18.2020 17:37

Basis: Wet Weight

Seq Number: 3126321

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.19.2020 03:42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.19.2020 03:42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.19.2020 03:42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.19.2020 03:42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.19.2020 03:42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.19.2020 03:42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.19.2020 03:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	05.19.2020 03:42	
1,4-Difluorobenzene	540-36-3	104	%	70-130	05.19.2020 03:42	



Certificate of Analytical Results 661912

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW21** Matrix: Soil Date Received: 05.18.2020 17:00
 Lab Sample Id: 661912-004 Date Collected: 05.17.2020 14:30 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.18.2020 17:31 Basis: Wet Weight
 Seq Number: 3126324

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	320	50.1	mg/kg	05.18.2020 20:32		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.18.2020 17:30 Basis: Wet Weight
 Seq Number: 3126293

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.18.2020 22:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.18.2020 22:03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.18.2020 22:03	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	05.18.2020 22:03	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.18.2020 22:03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	05.18.2020 22:03	
o-Terphenyl	84-15-1	121	%	70-135	05.18.2020 22:03	



Certificate of Analytical Results 661912

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW21**
Lab Sample Id: 661912-004

Matrix: Soil
Date Collected: 05.17.2020 14:30

Date Received: 05.18.2020 17:00
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.18.2020 17:37

Basis: Wet Weight

Seq Number: 3126321

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.19.2020 04:02	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.19.2020 04:02	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.19.2020 04:02	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.19.2020 04:02	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.19.2020 04:02	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.19.2020 04:02	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.19.2020 04:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	05.19.2020 04:02	
1,4-Difluorobenzene	540-36-3	105	%	70-130	05.19.2020 04:02	



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. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Nash 302-402H

Analytical Method: Chloride by EPA 300

Seq Number: 3126324

MB Sample Id: 7703550-1-BLK

Matrix: Solid

LCS Sample Id: 7703550-1-BKS

Prep Method: E300P

Date Prep: 05.18.2020

LCSD Sample Id: 7703550-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	250	100	248	99	90-110	1	20	mg/kg	05.18.2020 16:41	

Analytical Method: Chloride by EPA 300

Seq Number: 3126324

Parent Sample Id: 661850-007

Matrix: Soil

MS Sample Id: 661850-007 S

Prep Method: E300P

Date Prep: 05.18.2020

MSD Sample Id: 661850-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	139	200	348	105	348	105	90-110	0	20	mg/kg	05.18.2020 16:59	

Analytical Method: Chloride by EPA 300

Seq Number: 3126324

Parent Sample Id: 661912-002

Matrix: Soil

MS Sample Id: 661912-002 S

Prep Method: E300P

Date Prep: 05.18.2020

MSD Sample Id: 661912-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	342	201	524	91	523	90	90-110	0	20	mg/kg	05.18.2020 20:14	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126291

MB Sample Id: 7703566-1-BLK

Matrix: Solid

LCS Sample Id: 7703566-1-BKS

Prep Method: SW8015P

Date Prep: 05.18.2020

LCSD Sample Id: 7703566-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1060	106	988	99	70-135	7	35	mg/kg	05.18.2020 14:48	
Diesel Range Organics (DRO)	<50.0	1000	1210	121	1120	112	70-135	8	35	mg/kg	05.18.2020 14:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		129		127		70-135	%	05.18.2020 14:48
o-Terphenyl	116		134		131		70-135	%	05.18.2020 14:48

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126293

MB Sample Id: 7703561-1-BLK

Matrix: Solid

LCS Sample Id: 7703561-1-BKS

Prep Method: SW8015P

Date Prep: 05.18.2020

LCSD Sample Id: 7703561-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	976	98	920	92	70-135	6	35	mg/kg	05.18.2020 14:48	
Diesel Range Organics (DRO)	<50.0	1000	1130	113	1080	108	70-135	5	35	mg/kg	05.18.2020 14:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		122		115		70-135	%	05.18.2020 14:48
o-Terphenyl	109		129		123		70-135	%	05.18.2020 14:48

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

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

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

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



LT Environmental, Inc.

Nash 302-402H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126291

Matrix: Solid

Prep Method: SW8015P

Date Prep: 05.18.2020

MB Sample Id: 7703566-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

MB
Result

<50.0

Units

mg/kg

Analysis
Date

05.18.2020 14:27

Flag

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126293

Matrix: Solid

Prep Method: SW8015P

Date Prep: 05.18.2020

MB Sample Id: 7703561-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

MB
Result

<50.0

Units

mg/kg

Analysis
Date

05.18.2020 14:27

Flag

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126291

Matrix: Soil

Prep Method: SW8015P

Date Prep: 05.18.2020

Parent Sample Id: 661821-007

MS Sample Id: 661821-007 S

MSD Sample Id: 661821-007 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

Parent
Result

<50.2

Spike
Amount

1000

MS
Result

980

MS
%Rec

98

MSD
Result

990

MSD
%Rec

99

Limits

70-135

%RPD

1

RPD
Limit

35

Units

mg/kg

Analysis
Date

05.18.2020 15:50

Flag

Diesel Range Organics (DRO)

<50.2

1000

1130

113

1090

110

70-135

4

35

mg/kg

05.18.2020 15:50

Surrogate

1-Chlorooctane

MS
%Rec

129

MS
FlagMSD
%Rec

129

MSD
Flag

Limits

70-135

Units

%

Analysis
Date

05.18.2020 15:50

o-Terphenyl

126

129

70-135

%

05.18.2020 15:50

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126293

Matrix: Soil

Prep Method: SW8015P

Date Prep: 05.18.2020

Parent Sample Id: 661821-001

MS Sample Id: 661821-001 S

MSD Sample Id: 661821-001 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

Parent
Result

<50.0

Spike
Amount

999

MS
Result

921

MS
%Rec

92

MSD
Result

945

MSD
%Rec

95

Limits

70-135

%RPD

3

RPD
Limit

35

Units

mg/kg

Analysis
Date

05.18.2020 15:50

Flag

Diesel Range Organics (DRO)

<50.0

999

1070

107

1080

108

70-135

1

35

mg/kg

05.18.2020 15:50

Surrogate

1-Chlorooctane

MS
%Rec

123

MS
FlagMSD
%Rec

126

MSD
Flag

Limits

70-135

Units

%

Analysis
Date

05.18.2020 15:50

o-Terphenyl

129

127

70-135

%

05.18.2020 15:50

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 Result

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3126321

MB Sample Id: 7703568-1-BLK

Matrix: Solid

LCS Sample Id: 7703568-1-BKS

Prep Method: SW5035A

Date Prep: 05.18.2020

LCSD Sample Id: 7703568-1-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	0.104	104	0.0966	97	70-130	7	35	mg/kg	05.19.2020 00:18	
Toluene	<0.00200	0.100	0.100	100	0.0916	92	70-130	9	35	mg/kg	05.19.2020 00:18	
Ethylbenzene	<0.00200	0.100	0.0930	93	0.0859	86	71-129	8	35	mg/kg	05.19.2020 00:18	
m,p-Xylenes	<0.00400	0.200	0.191	96	0.176	88	70-135	8	35	mg/kg	05.19.2020 00:18	
o-Xylene	<0.00200	0.100	0.0973	97	0.0894	89	71-133	8	35	mg/kg	05.19.2020 00:18	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		103		104		70-130	%	05.19.2020 00:18
4-Bromofluorobenzene	97		93		94		70-130	%	05.19.2020 00:18

Analytical Method: BTEX by EPA 8021B

Seq Number: 3126321

Parent Sample Id: 661872-004

Matrix: Soil

MS Sample Id: 661872-004 S

Prep Method: SW5035A

Date Prep: 05.18.2020

MSD Sample Id: 661872-004 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	0.110	110	0.0931	93	70-130	17	35	mg/kg	05.19.2020 00:59	
Toluene	<0.00199	0.0996	0.103	103	0.0911	91	70-130	12	35	mg/kg	05.19.2020 00:59	
Ethylbenzene	<0.00199	0.0996	0.0952	96	0.0857	86	71-129	11	35	mg/kg	05.19.2020 00:59	
m,p-Xylenes	<0.00398	0.199	0.194	97	0.177	89	70-135	9	35	mg/kg	05.19.2020 00:59	
o-Xylene	<0.00199	0.0996	0.0984	99	0.0879	88	71-133	11	35	mg/kg	05.19.2020 00:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		102		70-130	%	05.19.2020 00:59
4-Bromofluorobenzene	96		95		70-130	%	05.19.2020 00:59

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:

201912

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 (480-555-0900) 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 Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A St. Bldg 1, Unit 222	Address:	3104 E Greene St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	(432) 701-2610	Email:	dmoir@xenco.com kmlittlell@xenco.com

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

Project Name:	Nash 302-402 H	Turn Around		ANALYSIS REQUEST	Work Order Notes													
Project Number:	012919258	Routine	☒															
P.O. Number:		Rush:																
Sampler's Name:	Robert McAfee	Due Date:																
SAMPLE RECEIPT Temperature (°C): 11.4 Received Intact: ☒ Yes ☐ No Cooler Custody Seals: Yes ☒ No ☐ N/A Sample Custody Seals: Yes ☒ No ☐ N/A Thermometer ID: T-200007 Correction Factor: -0.2 Total Containers: 4																		
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)										
FS13	S	05/17/20	1425	3'	1	X	X	X										
FS14			1427	3'		X	X	X										
SW20			1422	0-3'		X	X	X										
SW21			1430	0-3'		X	X	X										
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: 5/18/20 1700																		

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 Cr Co Cu Pb Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471 : Hg

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.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 05.18.2020 05.00.00 PM

Work Order #: 661912

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

Samples recieved in bulk containers.

* 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: 05.18.2020

Checklist reviewed by:



Jessica Kramer

Date: 05.19.2020



Certificate of Analysis Summary 662594

LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H

Project Id: 012919258

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 05.26.2020 16:40

Report Date: 05.30.2020 23:47

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	662594-001	662594-002	662594-003	662594-004	662594-005	662594-006
	<i>Field Id:</i>	FS15	FS16	FS17	FS18	FS19	FS20
	<i>Depth:</i>	5- ft	5- ft	5- ft	5- ft	5- ft	5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	05.22.2020 14:27	05.22.2020 14:31	05.22.2020 14:38	05.22.2020 14:42	05.22.2020 14:48	05.22.2020 14:53
BTEX by EPA 8021B	<i>Extracted:</i>	05.26.2020 18:00	05.26.2020 18:00	05.26.2020 18:00	05.26.2020 18:00	05.26.2020 18:00	05.26.2020 18:00
	<i>Analyzed:</i>	05.27.2020 07:32	05.27.2020 07:52	05.27.2020 08:13	05.27.2020 08:33	05.27.2020 08:54	05.27.2020 09:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
Toluene		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
Ethylbenzene		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
m,p-Xylenes		<0.00403 0.00403	<0.00402 0.00402	<0.00404 0.00404	<0.00403 0.00403	<0.00403 0.00403	<0.00403 0.00403
o-Xylene		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
Total Xylenes		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
Total BTEX		<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	05.26.2020 17:26	05.26.2020 17:26	05.26.2020 17:26	05.26.2020 17:26	05.26.2020 17:26	05.26.2020 17:26
	<i>Analyzed:</i>	05.26.2020 21:12	05.26.2020 21:18	05.26.2020 21:24	05.26.2020 21:30	05.26.2020 21:35	05.26.2020 21:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		413 50.4	284 50.4	168 50.4	99.0 49.9	377 49.8	261 50.1
TPH by SW8015 Mod	<i>Extracted:</i>	05.26.2020 17:00	05.26.2020 17:00	05.26.2020 17:00	05.26.2020 17:00	05.26.2020 17:00	05.26.2020 17:00
	<i>Analyzed:</i>	05.26.2020 18:53	05.26.2020 19:14	05.26.2020 19:34	05.26.2020 19:54	05.26.2020 20:15	05.26.2020 20:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.1 50.1
Diesel Range Organics (DRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.1 50.1
Total GRO-DRO		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.1 50.1
Total TPH		<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.1 50.1

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

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

Jessica Kramer
Project Manager



Certificate of Analysis Summary 662594

LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H

Project Id: 012919258

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 05.26.2020 16:40

Report Date: 05.30.2020 23:47

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	662594-007	662594-008	662594-009	662594-010		
	Field Id:	FS21	SW22	SW23	SW24		
	Depth:	5- ft	0-5 ft	0-5 ft	0-5 ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	05.22.2020 14:57	05.22.2020 15:10	05.22.2020 15:04	05.22.2020 15:01		
BTEX by EPA 8021B	Extracted:	05.26.2020 18:00	05.26.2020 18:00	05.26.2020 18:00	05.27.2020 14:02		
	Analyzed:	05.27.2020 09:35	05.27.2020 09:55	05.27.2020 10:15	05.27.2020 16:39		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200		
Toluene		<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200		
Ethylbenzene		<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200		
m,p-Xylenes		<0.00402 0.00402	<0.00403 0.00403	<0.00402 0.00402	<0.00401 0.00401		
o-Xylene		<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200		
Total Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200		
Total BTEX		<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00200 0.00200		
Chloride by EPA 300	Extracted:	05.26.2020 17:26	05.26.2020 17:26	05.26.2020 17:26	05.27.2020 12:10		
	Analyzed:	05.26.2020 21:47	05.26.2020 21:53	05.26.2020 21:59	05.27.2020 18:49		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		158 49.9	349 50.3	155 50.1	168 49.6		
TPH by SW8015 Mod	Extracted:	05.26.2020 17:00	05.26.2020 17:00	05.26.2020 17:00	05.27.2020 12:30		
	Analyzed:	05.26.2020 20:55	05.26.2020 21:16	05.26.2020 21:36	05.27.2020 16:04		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<49.9 49.9	<50.3 50.3	<50.0 50.0		
Diesel Range Organics (DRO)		<50.3 50.3	<49.9 49.9	<50.3 50.3	<50.0 50.0		
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<49.9 49.9	<50.3 50.3	<50.0 50.0		
Total GRO-DRO		<50.3 50.3	<49.9 49.9	<50.3 50.3	<50.0 50.0		
Total TPH		<50.3 50.3	<49.9 49.9	<50.3 50.3	<50.0 50.0		

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 Manager



Analytical Report 662594

for

LT Environmental, Inc.

Project Manager: Dan Moir

Nash 302-402H

012919258

05.30.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-6)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



05.30.2020

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

Reference: XENCO Report No(s): **662594**
Nash 302-402H
Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 662594. 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. 662594 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 Manager

A Small Business and Minority Company

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

**Sample Cross Reference 662594****LT Environmental, Inc., Arvada, CO**

Nash 302-402H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS15	S	05.22.2020 14:27	5 ft	662594-001
FS16	S	05.22.2020 14:31	5 ft	662594-002
FS17	S	05.22.2020 14:38	5 ft	662594-003
FS18	S	05.22.2020 14:42	5 ft	662594-004
FS19	S	05.22.2020 14:48	5 ft	662594-005
FS20	S	05.22.2020 14:53	5 ft	662594-006
FS21	S	05.22.2020 14:57	5 ft	662594-007
SW22	S	05.22.2020 15:10	0 - 5 ft	662594-008
SW23	S	05.22.2020 15:04	0 - 5 ft	662594-009
SW24	S	05.22.2020 15:01	0 - 5 ft	662594-010



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 302-402H*

Project ID: 012919258
Work Order Number(s): 662594

Report Date: 05.30.2020
Date Received: 05.26.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 662594

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS15** Matrix: Soil Date Received: 05.26.2020 16:40
 Lab Sample Id: 662594-001 Date Collected: 05.22.2020 14:27 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.26.2020 17:26 Basis: Wet Weight
 Seq Number: 3127049

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	413	50.4	mg/kg	05.26.2020 21:12		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.26.2020 17:00 Basis: Wet Weight
 Seq Number: 3127053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.26.2020 18:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	05.26.2020 18:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.26.2020 18:53	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	05.26.2020 18:53	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	05.26.2020 18:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	05.26.2020 18:53	
o-Terphenyl	84-15-1	78	%	70-135	05.26.2020 18:53	



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LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS15**
Lab Sample Id: 662594-001

Matrix: Soil
Date Collected: 05.22.2020 14:27

Date Received: 05.26.2020 16:40
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3127099

Prep Method: SW5035A

% Moisture:

Date Prep: 05.26.2020 18:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.27.2020 07:32	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.27.2020 07:32	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.27.2020 07:32	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.27.2020 07:32	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.27.2020 07:32	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.27.2020 07:32	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.27.2020 07:32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	05.27.2020 07:32		
1,4-Difluorobenzene	540-36-3	113	%	70-130	05.27.2020 07:32		



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LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS16** Matrix: Soil Date Received: 05.26.2020 16:40
 Lab Sample Id: 662594-002 Date Collected: 05.22.2020 14:31 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.26.2020 17:26 Basis: Wet Weight
 Seq Number: 3127049

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	284	50.4	mg/kg	05.26.2020 21:18		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.26.2020 17:00 Basis: Wet Weight
 Seq Number: 3127053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	05.26.2020 19:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	05.26.2020 19:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	05.26.2020 19:14	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	05.26.2020 19:14	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	05.26.2020 19:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	05.26.2020 19:14	
o-Terphenyl	84-15-1	83	%	70-135	05.26.2020 19:14	



Certificate of Analytical Results 662594

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS16**
Lab Sample Id: 662594-002

Matrix: Soil
Date Collected: 05.22.2020 14:31

Date Received: 05.26.2020 16:40
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.26.2020 18:00

Basis: Wet Weight

Seq Number: 3127099

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.27.2020 07:52	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.27.2020 07:52	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.27.2020 07:52	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.27.2020 07:52	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.27.2020 07:52	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.27.2020 07:52	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.27.2020 07:52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	05.27.2020 07:52		
1,4-Difluorobenzene	540-36-3	109	%	70-130	05.27.2020 07:52		



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LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS17** Matrix: Soil Date Received: 05.26.2020 16:40
 Lab Sample Id: 662594-003 Date Collected: 05.22.2020 14:38 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.26.2020 17:26 Basis: Wet Weight
 Seq Number: 3127049

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	168	50.4	mg/kg	05.26.2020 21:24		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.26.2020 17:00 Basis: Wet Weight
 Seq Number: 3127053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.26.2020 19:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.26.2020 19:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.26.2020 19:34	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	05.26.2020 19:34	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.26.2020 19:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	05.26.2020 19:34	
o-Terphenyl	84-15-1	85	%	70-135	05.26.2020 19:34	



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LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS17**
Lab Sample Id: 662594-003

Matrix: Soil
Date Collected: 05.22.2020 14:38

Date Received: 05.26.2020 16:40
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3127099

Prep Method: SW5035A

% Moisture:

Date Prep: 05.26.2020 18:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.27.2020 08:13	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.27.2020 08:13	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.27.2020 08:13	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	05.27.2020 08:13	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.27.2020 08:13	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.27.2020 08:13	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.27.2020 08:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	05.27.2020 08:13	
4-Bromofluorobenzene	460-00-4	95	%	70-130	05.27.2020 08:13	



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LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS18**
Lab Sample Id: 662594-004

Matrix: Soil
Date Collected: 05.22.2020 14:42

Date Received: 05.26.2020 16:40
Sample Depth: 5 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3127049

Date Prep: 05.26.2020 17:26

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	99.0	49.9	mg/kg	05.26.2020 21:30		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3127053

Date Prep: 05.26.2020 17:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.26.2020 19:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.26.2020 19:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.26.2020 19:54	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	05.26.2020 19:54	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.26.2020 19:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	05.26.2020 19:54	
o-Terphenyl	84-15-1	75	%	70-135	05.26.2020 19:54	



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LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS18**
Lab Sample Id: 662594-004

Matrix: Soil
Date Collected: 05.22.2020 14:42

Date Received: 05.26.2020 16:40
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.26.2020 18:00

Basis: Wet Weight

Seq Number: 3127099

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.27.2020 08:33	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.27.2020 08:33	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.27.2020 08:33	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.27.2020 08:33	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.27.2020 08:33	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.27.2020 08:33	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.27.2020 08:33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	05.27.2020 08:33		
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.27.2020 08:33		



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LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS19** Matrix: Soil Date Received: 05.26.2020 16:40
 Lab Sample Id: 662594-005 Date Collected: 05.22.2020 14:48 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.26.2020 17:26 Basis: Wet Weight
 Seq Number: 3127049

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	377	49.8	mg/kg	05.26.2020 21:35		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.26.2020 17:00 Basis: Wet Weight
 Seq Number: 3127053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.26.2020 20:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	05.26.2020 20:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.26.2020 20:15	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	05.26.2020 20:15	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	05.26.2020 20:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	74	%	70-135	05.26.2020 20:15	
o-Terphenyl	84-15-1	73	%	70-135	05.26.2020 20:15	



Certificate of Analytical Results 662594

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS19**
Lab Sample Id: 662594-005

Matrix: Soil
Date Collected: 05.22.2020 14:48

Date Received: 05.26.2020 16:40
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.26.2020 18:00

Basis: Wet Weight

Seq Number: 3127099

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.27.2020 08:54	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.27.2020 08:54	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.27.2020 08:54	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.27.2020 08:54	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.27.2020 08:54	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.27.2020 08:54	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.27.2020 08:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	05.27.2020 08:54		
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.27.2020 08:54		



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LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS20** Matrix: Soil Date Received: 05.26.2020 16:40
 Lab Sample Id: 662594-006 Date Collected: 05.22.2020 14:53 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.26.2020 17:26 Basis: Wet Weight
 Seq Number: 3127049

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	261	50.1	mg/kg	05.26.2020 21:41		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.26.2020 17:00 Basis: Wet Weight
 Seq Number: 3127053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.26.2020 20:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	05.26.2020 20:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.26.2020 20:35	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	05.26.2020 20:35	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	05.26.2020 20:35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	05.26.2020 20:35	
o-Terphenyl	84-15-1	85	%	70-135	05.26.2020 20:35	



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LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS20**
Lab Sample Id: 662594-006

Matrix: Soil
Date Collected: 05.22.2020 14:53

Date Received: 05.26.2020 16:40
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.26.2020 18:00

Basis: Wet Weight

Seq Number: 3127099

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.27.2020 09:14	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.27.2020 09:14	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.27.2020 09:14	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.27.2020 09:14	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.27.2020 09:14	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.27.2020 09:14	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.27.2020 09:14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	05.27.2020 09:14		
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.27.2020 09:14		



Certificate of Analytical Results 662594

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS21** Matrix: Soil Date Received: 05.26.2020 16:40
 Lab Sample Id: 662594-007 Date Collected: 05.22.2020 14:57 Sample Depth: 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.26.2020 17:26 Basis: Wet Weight
 Seq Number: 3127049

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	158	49.9	mg/kg	05.26.2020 21:47		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.26.2020 17:00 Basis: Wet Weight
 Seq Number: 3127053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	05.26.2020 20:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	05.26.2020 20:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	05.26.2020 20:55	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	05.26.2020 20:55	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	05.26.2020 20:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	05.26.2020 20:55	
o-Terphenyl	84-15-1	71	%	70-135	05.26.2020 20:55	



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LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **FS21**
Lab Sample Id: 662594-007

Matrix: Soil
Date Collected: 05.22.2020 14:57

Date Received: 05.26.2020 16:40
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.26.2020 18:00

Basis: Wet Weight

Seq Number: 3127099

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.27.2020 09:35	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.27.2020 09:35	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.27.2020 09:35	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.27.2020 09:35	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.27.2020 09:35	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.27.2020 09:35	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.27.2020 09:35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	05.27.2020 09:35		
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.27.2020 09:35		



Certificate of Analytical Results 662594

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW22** Matrix: Soil Date Received: 05.26.2020 16:40
 Lab Sample Id: 662594-008 Date Collected: 05.22.2020 15:10 Sample Depth: 0 - 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.26.2020 17:26 Basis: Wet Weight
 Seq Number: 3127049

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	349	50.3	mg/kg	05.26.2020 21:53		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.26.2020 17:00 Basis: Wet Weight
 Seq Number: 3127053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.26.2020 21:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	05.26.2020 21:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.26.2020 21:16	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	05.26.2020 21:16	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	05.26.2020 21:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	05.26.2020 21:16	
o-Terphenyl	84-15-1	72	%	70-135	05.26.2020 21:16	



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LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW22**
Lab Sample Id: 662594-008

Matrix: Soil
Date Collected: 05.22.2020 15:10

Date Received: 05.26.2020 16:40
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.26.2020 18:00

Basis: Wet Weight

Seq Number: 3127099

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.27.2020 09:55	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.27.2020 09:55	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.27.2020 09:55	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.27.2020 09:55	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.27.2020 09:55	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.27.2020 09:55	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.27.2020 09:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	05.27.2020 09:55	
4-Bromofluorobenzene	460-00-4	95	%	70-130	05.27.2020 09:55	



Certificate of Analytical Results 662594

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW23** Matrix: Soil Date Received: 05.26.2020 16:40
 Lab Sample Id: 662594-009 Date Collected: 05.22.2020 15:04 Sample Depth: 0 - 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.26.2020 17:26 Basis: Wet Weight
 Seq Number: 3127049

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	155	50.1	mg/kg	05.26.2020 21:59		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.26.2020 17:00 Basis: Wet Weight
 Seq Number: 3127053

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	05.26.2020 21:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	05.26.2020 21:36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	05.26.2020 21:36	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	05.26.2020 21:36	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	05.26.2020 21:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-135	05.26.2020 21:36	
o-Terphenyl	84-15-1	72	%	70-135	05.26.2020 21:36	



Certificate of Analytical Results 662594

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW23**
Lab Sample Id: 662594-009

Matrix: Soil
Date Collected: 05.22.2020 15:04

Date Received: 05.26.2020 16:40
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3127099

Prep Method: SW5035A

% Moisture:

Date Prep: 05.26.2020 18:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.27.2020 10:15	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.27.2020 10:15	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.27.2020 10:15	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.27.2020 10:15	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.27.2020 10:15	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.27.2020 10:15	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.27.2020 10:15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	05.27.2020 10:15		
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.27.2020 10:15		



Certificate of Analytical Results 662594

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW24** Matrix: Soil Date Received: 05.26.2020 16:40
 Lab Sample Id: 662594-010 Date Collected: 05.22.2020 15:01 Sample Depth: 0 - 5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.27.2020 12:10 Basis: Wet Weight
 Seq Number: 3127161

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	168	49.6	mg/kg	05.27.2020 18:49		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.27.2020 12:30 Basis: Wet Weight
 Seq Number: 3127168

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.27.2020 16:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.27.2020 16:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.27.2020 16:04	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	05.27.2020 16:04	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.27.2020 16:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	05.27.2020 16:04	
o-Terphenyl	84-15-1	75	%	70-135	05.27.2020 16:04	



Certificate of Analytical Results 662594

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **SW24**
Lab Sample Id: 662594-010

Matrix: Soil
Date Collected: 05.22.2020 15:01

Date Received: 05.26.2020 16:40
Sample Depth: 0 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.27.2020 14:02

Basis: Wet Weight

Seq Number: 3127163

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.27.2020 16:39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.27.2020 16:39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.27.2020 16:39	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.27.2020 16:39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.27.2020 16:39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.27.2020 16:39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.27.2020 16:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	05.27.2020 16:39	
4-Bromofluorobenzene	460-00-4	95	%	70-130	05.27.2020 16:39	



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. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: Chloride by EPA 300

Seq Number: 3127049

MB Sample Id: 7704118-1-BLK

Matrix: Solid

LCS Sample Id: 7704118-1-BKS

Prep Method: E300P

Date Prep: 05.26.2020

LCSD Sample Id: 7704118-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	251	100	249	100	90-110	1	20	mg/kg	05.26.2020 18:45	

Analytical Method: Chloride by EPA 300

Seq Number: 3127161

MB Sample Id: 7704166-1-BLK

Matrix: Solid

LCS Sample Id: 7704166-1-BKS

Prep Method: E300P

Date Prep: 05.27.2020

LCSD Sample Id: 7704166-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	256	102	90-110	0	20	mg/kg	05.27.2020 18:35	

Analytical Method: Chloride by EPA 300

Seq Number: 3127049

Parent Sample Id: 662582-010

Matrix: Soil

MS Sample Id: 662582-010 S

Prep Method: E300P

Date Prep: 05.26.2020

MSD Sample Id: 662582-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	241	200	432	96	432	96	90-110	0	20	mg/kg	05.26.2020 19:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3127049

Parent Sample Id: 662582-019

Matrix: Soil

MS Sample Id: 662582-019 S

Prep Method: E300P

Date Prep: 05.26.2020

MSD Sample Id: 662582-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1880	202	2080	99	2090	106	90-110	0	20	mg/kg	05.26.2020 20:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3127161

Parent Sample Id: 662594-010

Matrix: Soil

MS Sample Id: 662594-010 S

Prep Method: E300P

Date Prep: 05.27.2020

MSD Sample Id: 662594-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	168	101	264	95	264	95	90-110	0	20	mg/kg	05.27.2020 18:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3127161

Parent Sample Id: 662641-004

Matrix: Soil

MS Sample Id: 662641-004 S

Prep Method: E300P

Date Prep: 05.27.2020

MSD Sample Id: 662641-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3380	200	3570	95	3570	95	90-110	0	20	mg/kg	05.27.2020 20:41	

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

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

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

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127053

MB Sample Id: 7704130-1-BLK

Matrix: Solid

LCS Sample Id: 7704130-1-BKS

Prep Method: SW8015P

Date Prep: 05.26.2020

LCSD Sample Id: 7704130-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	993	99	1090	109	70-135	9	35	mg/kg	05.26.2020 12:42	
Diesel Range Organics (DRO)	<50.0	1000	1050	105	1140	114	70-135	8	35	mg/kg	05.26.2020 12:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		114		121		70-135	%	05.26.2020 12:42
o-Terphenyl	108		108		114		70-135	%	05.26.2020 12:42

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127168

MB Sample Id: 7704221-1-BLK

Matrix: Solid

LCS Sample Id: 7704221-1-BKS

Prep Method: SW8015P

Date Prep: 05.27.2020

LCSD Sample Id: 7704221-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1070	107	1010	101	70-135	6	35	mg/kg	05.27.2020 13:00	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1040	104	70-135	5	35	mg/kg	05.27.2020 13:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		128		114		70-135	%	05.27.2020 13:00
o-Terphenyl	101		106		102		70-135	%	05.27.2020 13:00

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127053

Matrix: Solid

MB Sample Id: 7704130-1-BLK

Prep Method: SW8015P

Date Prep: 05.26.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	05.26.2020 12:22	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127168

Matrix: Solid

MB Sample Id: 7704221-1-BLK

Prep Method: SW8015P

Date Prep: 05.27.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	05.27.2020 12:39	

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127053

Parent Sample Id: 662565-001

Matrix: Soil

MS Sample Id: 662565-001 S

Prep Method: SW8015P

Date Prep: 05.26.2020

MSD Sample Id: 662565-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	964	96	1020	102	70-135	6	35	mg/kg	05.26.2020 14:29	
Diesel Range Organics (DRO)	<50.1	1000	984	98	1020	102	70-135	4	35	mg/kg	05.26.2020 14:29	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		110		70-135	%	05.26.2020 14:29
o-Terphenyl	78		84		70-135	%	05.26.2020 14:29

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127168

Parent Sample Id: 662641-002

Matrix: Soil

MS Sample Id: 662641-002 S

Prep Method: SW8015P

Date Prep: 05.27.2020

MSD Sample Id: 662641-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1240	124	1050	105	70-135	17	35	mg/kg	05.27.2020 14:01	
Diesel Range Organics (DRO)	<50.0	1000	1260	126	1060	106	70-135	17	35	mg/kg	05.27.2020 14:01	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		115		70-135	%	05.27.2020 14:01
o-Terphenyl	99		84		70-135	%	05.27.2020 14:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3127099

MB Sample Id: 7704119-1-BLK

Matrix: Solid

LCS Sample Id: 7704119-1-BKS

Prep Method: SW5035A

Date Prep: 05.26.2020

LCSD Sample Id: 7704119-1-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	0.109	109	0.106	106	70-130	3	35	mg/kg	05.27.2020 01:25	
Toluene	<0.00200	0.100	0.103	103	0.0989	99	70-130	4	35	mg/kg	05.27.2020 01:25	
Ethylbenzene	<0.00200	0.100	0.0939	94	0.0906	91	71-129	4	35	mg/kg	05.27.2020 01:25	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.183	92	70-135	3	35	mg/kg	05.27.2020 01:25	
o-Xylene	<0.00200	0.100	0.0984	98	0.0955	96	71-133	3	35	mg/kg	05.27.2020 01:25	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		105		106		70-130	%	05.27.2020 01:25
4-Bromofluorobenzene	96		91		90		70-130	%	05.27.2020 01:25

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

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

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

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3127163

Matrix: Solid

Prep Method: SW5035A

Date Prep: 05.27.2020

MB Sample Id: 7704174-1-BLK

LCS Sample Id: 7704174-1-BKS

LCSD Sample Id: 7704174-1-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	0.109	109	0.104	104	70-130	5	35	mg/kg	05.27.2020 14:57	
Toluene	<0.00200	0.100	0.104	104	0.101	101	70-130	3	35	mg/kg	05.27.2020 14:57	
Ethylbenzene	<0.00200	0.100	0.0982	98	0.0952	95	71-129	3	35	mg/kg	05.27.2020 14:57	
m,p-Xylenes	<0.00400	0.200	0.202	101	0.193	97	70-135	5	35	mg/kg	05.27.2020 14:57	
o-Xylene	<0.00200	0.100	0.101	101	0.0980	98	71-133	3	35	mg/kg	05.27.2020 14:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		107		108		70-130	%	05.27.2020 14:57
4-Bromofluorobenzene	96		89		91		70-130	%	05.27.2020 14:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3127099

Matrix: Soil

Prep Method: SW5035A

Date Prep: 05.26.2020

Parent Sample Id: 662582-009

MS Sample Id: 662582-009 S

MSD Sample Id: 662582-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.110	109	0.0963	95	70-130	13	35	mg/kg	05.27.2020 02:05	
Toluene	<0.00202	0.101	0.102	101	0.0898	89	70-130	13	35	mg/kg	05.27.2020 02:05	
Ethylbenzene	<0.00202	0.101	0.0931	92	0.0836	83	71-129	11	35	mg/kg	05.27.2020 02:05	
m,p-Xylenes	<0.00403	0.202	0.189	94	0.169	84	70-135	11	35	mg/kg	05.27.2020 02:05	
o-Xylene	<0.00202	0.101	0.0969	96	0.0862	85	71-133	12	35	mg/kg	05.27.2020 02:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		110		70-130	%	05.27.2020 02:05
4-Bromofluorobenzene	92		93		70-130	%	05.27.2020 02:05

Analytical Method: BTEX by EPA 8021B

Seq Number: 3127163

Matrix: Soil

Prep Method: SW5035A

Date Prep: 05.27.2020

Parent Sample Id: 662594-010

MS Sample Id: 662594-010 S

MSD Sample Id: 662594-010 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	0.110	110	0.109	108	70-130	1	35	mg/kg	05.27.2020 15:38	
Toluene	<0.00200	0.100	0.105	105	0.103	102	70-130	2	35	mg/kg	05.27.2020 15:38	
Ethylbenzene	<0.00200	0.100	0.0984	98	0.0945	94	71-129	4	35	mg/kg	05.27.2020 15:38	
m,p-Xylenes	<0.00401	0.200	0.202	101	0.194	97	70-135	4	35	mg/kg	05.27.2020 15:38	
o-Xylene	<0.00200	0.100	0.103	103	0.0986	98	71-133	4	35	mg/kg	05.27.2020 15:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		109		70-130	%	05.27.2020 15:38
4-Bromofluorobenzene	93		97		70-130	%	05.27.2020 15:38

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

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

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

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



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

Work Order No:

002594

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Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A St. Bldg 1, Unit 222	Address:	3104 E Greene St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	(432) 701-2610	Email:	dmair@xenco.com mcafee@xenco.com

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

Project Name:	Nash 302-402H	Turn Around	1
Project Number:	012919258	Routine	☒
P.O. Number:	00000000	Rush:	
Sampler's Name:	Robert McAfee	Due Date:	

SAMPLE RECEIPT		Temp Blank:		Wet Ice:		Thermometer ID	
Temperature (°C):	3.2	Yes	No	Yes	No		
Received Intact:	Yes	No					
Cooler Custody Seals:	Yes	No					
Sample Custody Seals:	Yes	No					
Correction Factor:	-0.2						
Total Containers:	10						

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
FS15	S	05/12/20	1427	5'	1	X	X	X		
FS16			1431			X	X	X		
FS17			1438			X	X	X		
FS18			1442			X	X	X		
FS19			1448			X	X	X		
FS20			1453			X	X	X		
FS21			1457			X	X	X		
SW22			1510	0-5'		X	X	X		
SW23			1504	0-5'		X	X	X		
SW24			1501	0-5'		X	X	X		

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

Total 200.7 / 6010 200.8 / 6020:

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Robert McAfee</i>	<i>[Signature]</i>	5/26/20 16:40			



Certificate of Analysis Summary 662622

LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H

Project Id: 012919258

Contact: Dan Moir

Project Location:

Date Received in Lab: Wed 05.27.2020 09:10

Report Date: 05.30.2020 23:43

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	662622-001	662622-002	662622-003	662622-004	662622-005	662622-006
	Field Id:	PH01	PH01A	PH02	PH02A	PH03	PH03A
	Depth:	1- ft	4- ft	2- ft	4- ft	1- ft	4- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	05.23.2020 09:40	05.23.2020 09:55	05.23.2020 10:25	05.23.2020 10:35	05.23.2020 10:45	05.23.2020 11:00
BTEX by EPA 8021B	Extracted:	05.27.2020 15:02	05.27.2020 15:02	05.27.2020 15:02	05.27.2020 15:02	05.27.2020 15:02	05.27.2020 15:02
	Analyzed:	05.27.2020 18:42	05.27.2020 19:02	05.27.2020 19:23	05.27.2020 19:43	05.27.2020 20:44	05.27.2020 21:05
	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	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00404 0.00404	<0.00403 0.00403	<0.00402 0.00402	<0.00404 0.00404	<0.00400 0.00400
o-Xylene		<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200
Chloride by EPA 300	Extracted:	05.27.2020 12:10	05.27.2020 12:10	05.27.2020 12:10	05.27.2020 12:10	05.27.2020 12:10	05.27.2020 12:10
	Analyzed:	05.27.2020 19:10	05.27.2020 19:17	05.27.2020 19:24	05.27.2020 19:31	05.27.2020 19:52	05.27.2020 19:59
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2150 99.0	114 9.96	440 49.8	693 50.0	178 50.2	1220 49.7
TPH by SW8015 Mod	Extracted:	05.27.2020 12:30	05.27.2020 12:30	05.27.2020 12:30	05.27.2020 12:30	05.27.2020 12:30	05.27.2020 12:30
	Analyzed:	05.27.2020 15:03	05.27.2020 15:23	05.27.2020 15:23	05.27.2020 15:44	05.27.2020 15:44	05.27.2020 16:04
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.3 50.3	<50.0 50.0	<50.2 50.2
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.3 50.3	<50.0 50.0	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.3 50.3	<50.0 50.0	<50.2 50.2
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.3 50.3	<50.0 50.0	<50.2 50.2
Total TPH		<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.3 50.3	<50.0 50.0	<50.2 50.2

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

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

Jessica Kramer
Project Manager



Analytical Report 662622

for

LT Environmental, Inc.

Project Manager: Dan Moir

Nash 302-402H

012919258

05.30.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-6)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



05.30.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **662622**

Nash 302-402H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 662622. 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. 662622 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 Manager

A Small Business and Minority Company

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



Sample Cross Reference 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	05.23.2020 09:40	1 ft	662622-001
PH01A	S	05.23.2020 09:55	4 ft	662622-002
PH02	S	05.23.2020 10:25	2 ft	662622-003
PH02A	S	05.23.2020 10:35	4 ft	662622-004
PH03	S	05.23.2020 10:45	1 ft	662622-005
PH03A	S	05.23.2020 11:00	4 ft	662622-006



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 302-402H*

Project ID: 012919258
Work Order Number(s): 662622

Report Date: 05.30.2020
Date Received: 05.27.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH01** Matrix: Soil Date Received: 05.27.2020 09:10
 Lab Sample Id: 662622-001 Date Collected: 05.23.2020 09:40 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.27.2020 12:10 Basis: Wet Weight
 Seq Number: 3127161

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2150	99.0	mg/kg	05.27.2020 19:10		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.27.2020 12:30 Basis: Wet Weight
 Seq Number: 3127168

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.27.2020 15:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.27.2020 15:03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.27.2020 15:03	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	05.27.2020 15:03	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.27.2020 15:03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	05.27.2020 15:03	
o-Terphenyl	84-15-1	75	%	70-135	05.27.2020 15:03	



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH01**
Lab Sample Id: 662622-001

Matrix: Soil
Date Collected: 05.23.2020 09:40

Date Received: 05.27.2020 09:10
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3127163

Prep Method: SW5035A

% Moisture:

Date Prep: 05.27.2020 15:02

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.27.2020 18:42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.27.2020 18:42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.27.2020 18:42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.27.2020 18:42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.27.2020 18:42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.27.2020 18:42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.27.2020 18:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.27.2020 18:42	
4-Bromofluorobenzene	460-00-4	96	%	70-130	05.27.2020 18:42	



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH01A** Matrix: Soil Date Received: 05.27.2020 09:10
 Lab Sample Id: 662622-002 Date Collected: 05.23.2020 09:55 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.27.2020 12:10 Basis: Wet Weight
 Seq Number: 3127161

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	114	9.96	mg/kg	05.27.2020 19:17		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.27.2020 12:30 Basis: Wet Weight
 Seq Number: 3127175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.27.2020 15:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.27.2020 15:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.27.2020 15:23	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	05.27.2020 15:23	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.27.2020 15:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	05.27.2020 15:23	
o-Terphenyl	84-15-1	74	%	70-135	05.27.2020 15:23	



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH01A**
Lab Sample Id: 662622-002

Matrix: Soil
Date Collected: 05.23.2020 09:55

Date Received: 05.27.2020 09:10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.27.2020 15:02

Basis: Wet Weight

Seq Number: 3127163

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.27.2020 19:02	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.27.2020 19:02	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.27.2020 19:02	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	05.27.2020 19:02	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.27.2020 19:02	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.27.2020 19:02	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.27.2020 19:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.27.2020 19:02	
4-Bromofluorobenzene	460-00-4	99	%	70-130	05.27.2020 19:02	



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH02** Matrix: Soil Date Received: 05.27.2020 09:10
 Lab Sample Id: 662622-003 Date Collected: 05.23.2020 10:25 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.27.2020 12:10 Basis: Wet Weight
 Seq Number: 3127161

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	440	49.8	mg/kg	05.27.2020 19:24		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.27.2020 12:30 Basis: Wet Weight
 Seq Number: 3127168

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.27.2020 15:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.27.2020 15:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.27.2020 15:23	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	05.27.2020 15:23	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.27.2020 15:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	05.27.2020 15:23	
o-Terphenyl	84-15-1	77	%	70-135	05.27.2020 15:23	



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH02**
Lab Sample Id: 662622-003

Matrix: Soil
Date Collected: 05.23.2020 10:25

Date Received: 05.27.2020 09:10
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.27.2020 15:02

Basis: Wet Weight

Seq Number: 3127163

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.27.2020 19:23	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.27.2020 19:23	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.27.2020 19:23	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.27.2020 19:23	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.27.2020 19:23	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.27.2020 19:23	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.27.2020 19:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	05.27.2020 19:23	
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.27.2020 19:23	



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH02A** Matrix: Soil Date Received: 05.27.2020 09:10
 Lab Sample Id: 662622-004 Date Collected: 05.23.2020 10:35 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.27.2020 12:10 Basis: Wet Weight
 Seq Number: 3127161

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	693	50.0	mg/kg	05.27.2020 19:31		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.27.2020 12:30 Basis: Wet Weight
 Seq Number: 3127175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	05.27.2020 15:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	05.27.2020 15:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	05.27.2020 15:44	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	05.27.2020 15:44	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	05.27.2020 15:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	05.27.2020 15:44	
o-Terphenyl	84-15-1	74	%	70-135	05.27.2020 15:44	



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH02A**
Lab Sample Id: 662622-004

Matrix: Soil
Date Collected: 05.23.2020 10:35

Date Received: 05.27.2020 09:10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.27.2020 15:02

Basis: Wet Weight

Seq Number: 3127163

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.27.2020 19:43	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.27.2020 19:43	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.27.2020 19:43	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.27.2020 19:43	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.27.2020 19:43	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.27.2020 19:43	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.27.2020 19:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.27.2020 19:43		
4-Bromofluorobenzene	460-00-4	97	%	70-130	05.27.2020 19:43		



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH03** Matrix: Soil Date Received: 05.27.2020 09:10
 Lab Sample Id: 662622-005 Date Collected: 05.23.2020 10:45 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.27.2020 12:10 Basis: Wet Weight
 Seq Number: 3127161

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	178	50.2	mg/kg	05.27.2020 19:52		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.27.2020 12:30 Basis: Wet Weight
 Seq Number: 3127168

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.27.2020 15:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.27.2020 15:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.27.2020 15:44	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	05.27.2020 15:44	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.27.2020 15:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	05.27.2020 15:44	
o-Terphenyl	84-15-1	89	%	70-135	05.27.2020 15:44	



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH03**
Lab Sample Id: 662622-005

Matrix: Soil
Date Collected: 05.23.2020 10:45

Date Received: 05.27.2020 09:10
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.27.2020 15:02

Basis: Wet Weight

Seq Number: 3127163

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.27.2020 20:44	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.27.2020 20:44	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.27.2020 20:44	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	05.27.2020 20:44	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.27.2020 20:44	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.27.2020 20:44	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.27.2020 20:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	05.27.2020 20:44		
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.27.2020 20:44		



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH03A** Matrix: Soil Date Received: 05.27.2020 09:10
 Lab Sample Id: 662622-006 Date Collected: 05.23.2020 11:00 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.27.2020 12:10 Basis: Wet Weight
 Seq Number: 3127161

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1220	49.7	mg/kg	05.27.2020 19:59		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.27.2020 12:30 Basis: Wet Weight
 Seq Number: 3127175

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.27.2020 16:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.27.2020 16:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.27.2020 16:04	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	05.27.2020 16:04	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.27.2020 16:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	79	%	70-135	05.27.2020 16:04	
o-Terphenyl	84-15-1	76	%	70-135	05.27.2020 16:04	



Certificate of Analytical Results 662622

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH03A**
Lab Sample Id: 662622-006

Matrix: Soil
Date Collected: 05.23.2020 11:00

Date Received: 05.27.2020 09:10
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 05.27.2020 15:02

Basis: Wet Weight

Seq Number: 3127163

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.27.2020 21:05	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.27.2020 21:05	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.27.2020 21:05	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.27.2020 21:05	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.27.2020 21:05	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.27.2020 21:05	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.27.2020 21:05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	05.27.2020 21:05		
4-Bromofluorobenzene	460-00-4	96	%	70-130	05.27.2020 21:05		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: Chloride by EPA 300

Seq Number: 3127161

MB Sample Id: 7704166-1-BLK

Matrix: Solid

LCS Sample Id: 7704166-1-BKS

Prep Method: E300P

Date Prep: 05.27.2020

LCSD Sample Id: 7704166-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	256	102	90-110	0	20	mg/kg	05.27.2020 18:35	

Analytical Method: Chloride by EPA 300

Seq Number: 3127161

Parent Sample Id: 662594-010

Matrix: Soil

MS Sample Id: 662594-010 S

Prep Method: E300P

Date Prep: 05.27.2020

MSD Sample Id: 662594-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	168	101	264	95	264	95	90-110	0	20	mg/kg	05.27.2020 18:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3127161

Parent Sample Id: 662641-004

Matrix: Soil

MS Sample Id: 662641-004 S

Prep Method: E300P

Date Prep: 05.27.2020

MSD Sample Id: 662641-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3380	200	3570	95	3570	95	90-110	0	20	mg/kg	05.27.2020 20:41	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127168

MB Sample Id: 7704221-1-BLK

Matrix: Solid

LCS Sample Id: 7704221-1-BKS

Prep Method: SW8015P

Date Prep: 05.27.2020

LCSD Sample Id: 7704221-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1070	107	1010	101	70-135	6	35	mg/kg	05.27.2020 13:00	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1040	104	70-135	5	35	mg/kg	05.27.2020 13:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		128		114		70-135	%	05.27.2020 13:00
o-Terphenyl	101		106		102		70-135	%	05.27.2020 13:00

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127175

MB Sample Id: 7704223-1-BLK

Matrix: Solid

LCS Sample Id: 7704223-1-BKS

Prep Method: SW8015P

Date Prep: 05.27.2020

LCSD Sample Id: 7704223-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	963	96	970	97	70-135	1	35	mg/kg	05.27.2020 13:00	
Diesel Range Organics (DRO)	<50.0	1000	1000	100	1050	105	70-135	5	35	mg/kg	05.27.2020 13:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		115		115		70-135	%	05.27.2020 13:00
o-Terphenyl	97		102		107		70-135	%	05.27.2020 13:00

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]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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



LT Environmental, Inc.

Nash 302-402H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127168

Matrix: Solid

Prep Method: SW8015P

Date Prep: 05.27.2020

MB Sample Id: 7704221-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

MB
Result

<50.0

Units

mg/kg

Analysis
Date

05.27.2020 12:39

Flag

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127175

Matrix: Solid

Prep Method: SW8015P

Date Prep: 05.27.2020

MB Sample Id: 7704223-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

MB
Result

<50.0

Units

mg/kg

Analysis
Date

05.27.2020 12:39

Flag

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127168

Matrix: Soil

Prep Method: SW8015P

Date Prep: 05.27.2020

Parent Sample Id: 662641-002

MS Sample Id: 662641-002 S

MSD Sample Id: 662641-002 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

Parent
Result

<50.0

Spike
Amount

1000

MS
Result

1240

MS
%Rec

124

MSD
Result

1050

MSD
%Rec

105

Limits

70-135

%RPD

17

RPD
Limit

35

Units

mg/kg

Analysis
Date

05.27.2020 14:01

Flag

Diesel Range Organics (DRO)

<50.0

1000

1260

126

1060

106

70-135

17

35

mg/kg

05.27.2020 14:01

Surrogate

1-Chlorooctane

MS
%Rec

114

MS
FlagMSD
%Rec

115

MSD
Flag

Limits

70-135

Units

%

Analysis
Date

05.27.2020 14:01

o-Terphenyl

99

84

70-135

%

05.27.2020 14:01

Analytical Method: TPH by SW8015 Mod

Seq Number: 3127175

Matrix: Soil

Prep Method: SW8015P

Date Prep: 05.27.2020

Parent Sample Id: 662641-001

MS Sample Id: 662641-001 S

MSD Sample Id: 662641-001 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

Parent
Result

<49.9

Spike
Amount

998

MS
Result

969

MS
%Rec

97

MSD
Result

960

MSD
%Rec

96

Limits

70-135

%RPD

1

RPD
Limit

35

Units

mg/kg

Analysis
Date

05.27.2020 14:01

Flag

Diesel Range Organics (DRO)

<49.9

998

998

100

997

100

70-135

0

35

mg/kg

05.27.2020 14:01

Surrogate

1-Chlorooctane

MS
%Rec

93

MS
FlagMSD
%Rec

92

MSD
Flag

Limits

70-135

Units

%

Analysis
Date

05.27.2020 14:01

o-Terphenyl

83

81

70-135

%

05.27.2020 14:01

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

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

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

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3127163

MB Sample Id: 7704174-1-BLK

Matrix: Solid

LCS Sample Id: 7704174-1-BKS

Prep Method: SW5035A

Date Prep: 05.27.2020

LCSD Sample Id: 7704174-1-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	0.109	109	0.104	104	70-130	5	35	mg/kg	05.27.2020 14:57	
Toluene	<0.00200	0.100	0.104	104	0.101	101	70-130	3	35	mg/kg	05.27.2020 14:57	
Ethylbenzene	<0.00200	0.100	0.0982	98	0.0952	95	71-129	3	35	mg/kg	05.27.2020 14:57	
m,p-Xylenes	<0.00400	0.200	0.202	101	0.193	97	70-135	5	35	mg/kg	05.27.2020 14:57	
o-Xylene	<0.00200	0.100	0.101	101	0.0980	98	71-133	3	35	mg/kg	05.27.2020 14:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		107		108		70-130	%	05.27.2020 14:57
4-Bromofluorobenzene	96		89		91		70-130	%	05.27.2020 14:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3127163

Parent Sample Id: 662594-010

Matrix: Soil

MS Sample Id: 662594-010 S

Prep Method: SW5035A

Date Prep: 05.27.2020

MSD Sample Id: 662594-010 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	0.110	110	0.109	108	70-130	1	35	mg/kg	05.27.2020 15:38	
Toluene	<0.00200	0.100	0.105	105	0.103	102	70-130	2	35	mg/kg	05.27.2020 15:38	
Ethylbenzene	<0.00200	0.100	0.0984	98	0.0945	94	71-129	4	35	mg/kg	05.27.2020 15:38	
m,p-Xylenes	<0.00401	0.200	0.202	101	0.194	97	70-135	4	35	mg/kg	05.27.2020 15:38	
o-Xylene	<0.00200	0.100	0.103	103	0.0986	98	71-133	4	35	mg/kg	05.27.2020 15:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		109		70-130	%	05.27.2020 15:38
4-Bromofluorobenzene	93		97		70-130	%	05.27.2020 15:38

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

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

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

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



Certificate of Analysis Summary 663727

LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H

Project Id: 012920091
Contact: Kyle Littrell
Project Location:

Date Received in Lab: Mon 06.08.2020 11:15
Report Date: 06.10.2020 16:02
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	663727-001	663727-002	663727-003	663727-004		
	<i>Field Id:</i>	PH04	PH04A	PH05	PH05A		
	<i>Depth:</i>	2- ft	2.5- ft	1- ft	4- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	06.06.2020 09:31	06.06.2020 09:40	06.06.2020 10:02	06.06.2020 10:17		
BTEX by EPA 8021B	<i>Extracted:</i>	06.09.2020 18:00	06.09.2020 18:00	06.09.2020 18:00	06.09.2020 18:00		
	<i>Analyzed:</i>	06.10.2020 00:02	06.10.2020 00:23	06.10.2020 00:43	06.10.2020 01:03		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00401 0.00401	<0.00396 0.00396		
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198		
Chloride by EPA 300	<i>Extracted:</i>	06.09.2020 11:00	06.09.2020 11:00	06.09.2020 12:31	06.09.2020 11:00		
	<i>Analyzed:</i>	06.09.2020 14:26	06.09.2020 14:32	06.09.2020 15:13	06.09.2020 14:38		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		1880 49.9	88.5 50.1	789 49.8	662 49.8		
TPH by SW8015 Mod	<i>Extracted:</i>	06.08.2020 17:30	06.09.2020 14:30	06.09.2020 14:30	06.09.2020 14:30		
	<i>Analyzed:</i>	06.09.2020 20:01	06.09.2020 23:26	06.09.2020 23:46	06.10.2020 00:07		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.3 50.3	<50.1 50.1	<50.2 50.2		
Diesel Range Organics (DRO)		<49.9 49.9	<50.3 50.3	<50.1 50.1	<50.2 50.2		
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.3 50.3	<50.1 50.1	<50.2 50.2		
Total GRO-DRO		<49.9 49.9	<50.3 50.3	<50.1 50.1	<50.2 50.2		
Total TPH		<49.9 49.9	<50.3 50.3	<50.1 50.1	<50.2 50.2		

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

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

Jessica Kramer
Project Manager



Analytical Report 663727

for

LT Environmental, Inc.

Project Manager: Kyle Littrell

Nash 302-402H

012920091

06.10.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.10.2020

Project Manager: **Kyle Littrell**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **663727**

Nash 302-402H

Project Address:

Kyle Littrell:

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) 663727. 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. 663727 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 Manager

A Small Business and Minority Company

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



Sample Cross Reference 663727

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH04	S	06.06.2020 09:31	2 ft	663727-001
PH04A	S	06.06.2020 09:40	2.5 ft	663727-002
PH05	S	06.06.2020 10:02	1 ft	663727-003
PH05A	S	06.06.2020 10:17	4 ft	663727-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 302-402H*

Project ID: 012920091
Work Order Number(s): 663727

Report Date: 06.10.2020
Date Received: 06.08.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 663727

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH04** Matrix: Soil Date Received: 06.08.2020 11:15
 Lab Sample Id: 663727-001 Date Collected: 06.06.2020 09:31 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 06.09.2020 11:00 Basis: Wet Weight
 Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1880	49.9	mg/kg	06.09.2020 14:26		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 06.08.2020 17:30 Basis: Wet Weight
 Seq Number: 3128399

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	06.09.2020 20:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	06.09.2020 20:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	06.09.2020 20:01	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	06.09.2020 20:01	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	06.09.2020 20:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	06.09.2020 20:01	
o-Terphenyl	84-15-1	127	%	70-135	06.09.2020 20:01	



Certificate of Analytical Results 663727

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH04**
Lab Sample Id: 663727-001

Matrix: Soil
Date Collected: 06.06.2020 09:31

Date Received: 06.08.2020 11:15
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3128515

Prep Method: SW5035A

% Moisture:

Date Prep: 06.09.2020 18:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.10.2020 00:02	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.10.2020 00:02	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.10.2020 00:02	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.10.2020 00:02	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.10.2020 00:02	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.10.2020 00:02	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.10.2020 00:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.10.2020 00:02		
1,4-Difluorobenzene	540-36-3	105	%	70-130	06.10.2020 00:02		



Certificate of Analytical Results 663727

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH04A** Matrix: Soil Date Received: 06.08.2020 11:15
 Lab Sample Id: 663727-002 Date Collected: 06.06.2020 09:40 Sample Depth: 2.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 06.09.2020 11:00 Basis: Wet Weight
 Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	88.5	50.1	mg/kg	06.09.2020 14:32		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 06.09.2020 14:30 Basis: Wet Weight
 Seq Number: 3128470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	06.09.2020 23:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	06.09.2020 23:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	06.09.2020 23:26	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	06.09.2020 23:26	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	06.09.2020 23:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	74	%	70-135	06.09.2020 23:26	
o-Terphenyl	84-15-1	73	%	70-135	06.09.2020 23:26	



Certificate of Analytical Results 663727

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH04A**
Lab Sample Id: 663727-002

Matrix: Soil
Date Collected: 06.06.2020 09:40

Date Received: 06.08.2020 11:15
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3128515

Prep Method: SW5035A

% Moisture:

Date Prep: 06.09.2020 18:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.10.2020 00:23	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.10.2020 00:23	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.10.2020 00:23	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.10.2020 00:23	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.10.2020 00:23	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.10.2020 00:23	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.10.2020 00:23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	06.10.2020 00:23		
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.10.2020 00:23		



Certificate of Analytical Results 663727

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH05** Matrix: Soil Date Received: 06.08.2020 11:15
 Lab Sample Id: 663727-003 Date Collected: 06.06.2020 10:02 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 06.09.2020 12:31 Basis: Wet Weight
 Seq Number: 3128473

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	789	49.8	mg/kg	06.09.2020 15:13		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 06.09.2020 14:30 Basis: Wet Weight
 Seq Number: 3128470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	06.09.2020 23:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	06.09.2020 23:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	06.09.2020 23:46	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	06.09.2020 23:46	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	06.09.2020 23:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	06.09.2020 23:46	
o-Terphenyl	84-15-1	87	%	70-135	06.09.2020 23:46	



Certificate of Analytical Results 663727

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH05**
Lab Sample Id: 663727-003

Matrix: Soil
Date Collected: 06.06.2020 10:02

Date Received: 06.08.2020 11:15
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 06.09.2020 18:00

Basis: Wet Weight

Seq Number: 3128515

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.10.2020 00:43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.10.2020 00:43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.10.2020 00:43	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	06.10.2020 00:43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.10.2020 00:43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.10.2020 00:43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.10.2020 00:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	06.10.2020 00:43		
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.10.2020 00:43		



Certificate of Analytical Results 663727

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH05A** Matrix: Soil Date Received: 06.08.2020 11:15
 Lab Sample Id: 663727-004 Date Collected: 06.06.2020 10:17 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 06.09.2020 11:00 Basis: Wet Weight
 Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	662	49.8	mg/kg	06.09.2020 14:38		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 06.09.2020 14:30 Basis: Wet Weight
 Seq Number: 3128470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	06.10.2020 00:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	06.10.2020 00:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	06.10.2020 00:07	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	06.10.2020 00:07	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	06.10.2020 00:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	77	%	70-135	06.10.2020 00:07	
o-Terphenyl	84-15-1	74	%	70-135	06.10.2020 00:07	



Certificate of Analytical Results 663727

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **PH05A**
Lab Sample Id: 663727-004

Matrix: Soil
Date Collected: 06.06.2020 10:17

Date Received: 06.08.2020 11:15
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 06.09.2020 18:00

Basis: Wet Weight

Seq Number: 3128515

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.10.2020 01:03	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.10.2020 01:03	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.10.2020 01:03	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	06.10.2020 01:03	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.10.2020 01:03	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.10.2020 01:03	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.10.2020 01:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.10.2020 01:03		
1,4-Difluorobenzene	540-36-3	109	%	70-130	06.10.2020 01:03		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: Chloride by EPA 300

Seq Number: 3128439

MB Sample Id: 7705093-1-BLK

Matrix: Solid

LCS Sample Id: 7705093-1-BKS

Prep Method: E300P

Date Prep: 06.09.2020

LCSD Sample Id: 7705093-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	251	100	253	101	90-110	1	20	mg/kg	06.09.2020 11:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3128473

MB Sample Id: 7705094-1-BLK

Matrix: Solid

LCS Sample Id: 7705094-1-BKS

Prep Method: E300P

Date Prep: 06.09.2020

LCSD Sample Id: 7705094-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	251	100	253	101	90-110	1	20	mg/kg	06.09.2020 15:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3128439

Parent Sample Id: 663802-001

Matrix: Soil

MS Sample Id: 663802-001 S

Prep Method: E300P

Date Prep: 06.09.2020

MSD Sample Id: 663802-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	205	201	387	91	388	91	90-110	0	20	mg/kg	06.09.2020 12:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3128439

Parent Sample Id: 663803-003

Matrix: Soil

MS Sample Id: 663803-003 S

Prep Method: E300P

Date Prep: 06.09.2020

MSD Sample Id: 663803-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	66.8	200	257	95	257	95	90-110	0	20	mg/kg	06.09.2020 13:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3128473

Parent Sample Id: 663727-003

Matrix: Soil

MS Sample Id: 663727-003 S

Prep Method: E300P

Date Prep: 06.09.2020

MSD Sample Id: 663727-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	789	202	971	90	972	91	90-110	0	20	mg/kg	06.09.2020 15:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3128473

Parent Sample Id: 663805-006

Matrix: Soil

MS Sample Id: 663805-006 S

Prep Method: E300P

Date Prep: 06.09.2020

MSD Sample Id: 663805-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	61.0	199	245	92	248	93	90-110	1	20	mg/kg	06.09.2020 16:39	

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3128399

MB Sample Id: 7705004-1-BLK

Matrix: Solid

LCS Sample Id: 7705004-1-BKS

Prep Method: SW8015P

Date Prep: 06.08.2020

LCSD Sample Id: 7705004-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	944	94	974	97	70-135	3	35	mg/kg	06.09.2020 11:47	
Diesel Range Organics (DRO)	<50.0	1000	1010	101	1040	104	70-135	3	35	mg/kg	06.09.2020 11:47	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		104		104		70-135	%	06.09.2020 11:47
o-Terphenyl	94		96		96		70-135	%	06.09.2020 11:47

Analytical Method: TPH by SW8015 Mod

Seq Number: 3128470

MB Sample Id: 7705090-1-BLK

Matrix: Solid

LCS Sample Id: 7705090-1-BKS

Prep Method: SW8015P

Date Prep: 06.09.2020

LCSD Sample Id: 7705090-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	969	97	980	98	70-135	1	35	mg/kg	06.09.2020 21:23	
Diesel Range Organics (DRO)	<50.0	1000	1060	106	1070	107	70-135	1	35	mg/kg	06.09.2020 21:23	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		107		105		70-135	%	06.09.2020 21:23
o-Terphenyl	92		102		99		70-135	%	06.09.2020 21:23

Analytical Method: TPH by SW8015 Mod

Seq Number: 3128399

Matrix: Solid

MB Sample Id: 7705004-1-BLK

Prep Method: SW8015P

Date Prep: 06.08.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	06.09.2020 11:27	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3128470

Matrix: Solid

MB Sample Id: 7705090-1-BLK

Prep Method: SW8015P

Date Prep: 06.09.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	06.09.2020 21:02	

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

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

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

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3128399

Parent Sample Id: 663709-001

Matrix: Soil

MS Sample Id: 663709-001 S

Prep Method: SW8015P

Date Prep: 06.08.2020

MSD Sample Id: 663709-001 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)	<49.9	998	996	100	1020	102	70-135	2	35	mg/kg	06.09.2020 12:49	
Diesel Range Organics (DRO)	<49.9	998	1060	106	1100	110	70-135	4	35	mg/kg	06.09.2020 12:49	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		123		70-135	%	06.09.2020 12:49
o-Terphenyl	111		116		70-135	%	06.09.2020 12:49

Analytical Method: TPH by SW8015 Mod

Seq Number: 3128470

Parent Sample Id: 663823-001

Matrix: Soil

MS Sample Id: 663823-001 S

Prep Method: SW8015P

Date Prep: 06.09.2020

MSD Sample Id: 663823-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	998	100	966	97	70-135	3	35	mg/kg	06.09.2020 22:24	
Diesel Range Organics (DRO)	<50.0	999	1080	108	1040	104	70-135	4	35	mg/kg	06.09.2020 22:24	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		96		70-135	%	06.09.2020 22:24
o-Terphenyl	88		85		70-135	%	06.09.2020 22:24

Analytical Method: BTEX by EPA 8021B

Seq Number: 3128515

MB Sample Id: 7705158-1-BLK

Matrix: Solid

LCS Sample Id: 7705158-1-BKS

Prep Method: SW5035A

Date Prep: 06.09.2020

LCSD Sample Id: 7705158-1-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	0.103	103	0.107	107	70-130	4	35	mg/kg	06.09.2020 22:20	
Toluene	<0.00200	0.100	0.0978	98	0.101	101	70-130	3	35	mg/kg	06.09.2020 22:20	
Ethylbenzene	<0.00200	0.100	0.0915	92	0.0949	95	71-129	4	35	mg/kg	06.09.2020 22:20	
m,p-Xylenes	<0.00400	0.200	0.187	94	0.192	96	70-135	3	35	mg/kg	06.09.2020 22:20	
o-Xylene	<0.00200	0.100	0.0951	95	0.0989	99	71-133	4	35	mg/kg	06.09.2020 22:20	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		107		106		70-130	%	06.09.2020 22:20
4-Bromofluorobenzene	98		94		90		70-130	%	06.09.2020 22:20

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

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

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

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3128515

Parent Sample Id: 663727-001

Matrix: Soil

MS Sample Id: 663727-001 S

Prep Method: SW5035A

Date Prep: 06.09.2020

MSD Sample Id: 663727-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.118	117	0.111	111	70-130	6	35	mg/kg	06.09.2020 23:01	
Toluene	<0.00202	0.101	0.111	110	0.104	104	70-130	7	35	mg/kg	06.09.2020 23:01	
Ethylbenzene	<0.00202	0.101	0.105	104	0.0968	97	71-129	8	35	mg/kg	06.09.2020 23:01	
m,p-Xylenes	<0.00403	0.202	0.216	107	0.199	100	70-135	8	35	mg/kg	06.09.2020 23:01	
o-Xylene	<0.00202	0.101	0.108	107	0.0994	100	71-133	8	35	mg/kg	06.09.2020 23:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		106		70-130	%	06.09.2020 23:01
4-Bromofluorobenzene	89		92		70-130	%	06.09.2020 23:01

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: 663727

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 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A St. Bldg 1, Unit 222	Address:	3104 E Greene St.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:	(432) 701-2610	Email:	dmoir@xenco.com kmcatee@xenco.com

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

Project Name:	Nash 302-402H	Turn Around	☒
Project Number:	012919258	Rush:	☐
P.O. Number:		Due Date:	
Sampler's Name:	Robert McAtfee		

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	3.0					
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	Number	TPH (EP)	BTEX (EP)	Chloride											lab, if received by 4:30pm						
PH04	S	06/06/20	0931	2'	1	X	X	X											discrete ↓						
PH04A			0940	2.5'		X	X	X																	
PH05			1002	1'		X	X	X																	
PH05A			1017	4'		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

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06.08.2020 11.15.00 AM

Work Order #: 663727

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T NM 007

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

Samples received in bulk containers.

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Martha Castro

Date: 06.08.2020

Checklist reviewed by:



Jessica Kramer

Date: 06.08.2020



Certificate of Analysis Summary 663729

LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H

Project Id: 012920091

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon 06.08.2020 11:15

Report Date: 06.10.2020 15:30

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	663729-001	663729-002	663729-003	663729-004		
	<i>Field Id:</i>	BH01	BH01A	BH02	BH02A		
	<i>Depth:</i>	1-FT	4-FT	1-FT	3-FT		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	06.06.2020 10:40	06.06.2020 11:08	06.06.2020 11:00	06.06.2020 11:12		
BTEX by EPA 8021B	<i>Extracted:</i>	06.09.2020 13:30	06.09.2020 13:30	06.09.2020 13:30	06.09.2020 13:30		
	<i>Analyzed:</i>	06.09.2020 19:58	06.09.2020 20:18	06.09.2020 20:38	06.09.2020 20:59		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199		
Toluene		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199		
Ethylbenzene		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199		
m,p-Xylenes		<0.00397 0.00397	<0.00398 0.00398	<0.00397 0.00397	<0.00398 0.00398		
o-Xylene		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199		
Total Xylenes		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199		
Total BTEX		<0.00198 0.00198	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199		
Chloride by EPA 300	<i>Extracted:</i>	06.09.2020 11:00	06.09.2020 11:00	06.09.2020 11:00	06.09.2020 11:00		
	<i>Analyzed:</i>	06.09.2020 14:03	06.09.2020 14:09	06.09.2020 14:14	06.09.2020 14:20		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		1490 49.5	811 49.9	1620 49.4	864 49.4		
TPH by SW8015 Mod	<i>Extracted:</i>	06.09.2020 14:30	06.09.2020 14:30	06.09.2020 14:30	06.09.2020 14:30		
	<i>Analyzed:</i>	06.10.2020 00:48	06.10.2020 01:08	06.10.2020 01:29	06.10.2020 01:49		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.3 50.3		
Diesel Range Organics (DRO)		<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.3 50.3		
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.3 50.3		
Total GRO-DRO		<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.3 50.3		
Total TPH		<50.1 50.1	<50.2 50.2	<50.0 50.0	<50.3 50.3		

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

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

Jessica Kramer
Project Manager



Analytical Report 663729

for

LT Environmental, Inc.

Project Manager: Dan Moir

Nash 302-402H

012920091

06.10.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-32), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



06.10.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **663729**

Nash 302-402H

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 663729. 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. 663729 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 663729

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01	S	06.06.2020 10:40	1 - FT	663729-001
BH01A	S	06.06.2020 11:08	4 - FT	663729-002
BH02	S	06.06.2020 11:00	1 - FT	663729-003
BH02A	S	06.06.2020 11:12	3 - FT	663729-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 302-402H*

Project ID: 012920091
Work Order Number(s): 663729

Report Date: 06.10.2020
Date Received: 06.08.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 663729

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **BH01** Matrix: Soil Date Received: 06.08.2020 11:15
 Lab Sample Id: 663729-001 Date Collected: 06.06.2020 10:40 Sample Depth: 1 - FT
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 06.09.2020 11:00 Basis: Wet Weight
 Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1490	49.5	mg/kg	06.09.2020 14:03		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 06.09.2020 14:30 Basis: Wet Weight
 Seq Number: 3128470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	06.10.2020 00:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	06.10.2020 00:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	06.10.2020 00:48	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	06.10.2020 00:48	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	06.10.2020 00:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	75	%	70-135	06.10.2020 00:48	
o-Terphenyl	84-15-1	70	%	70-135	06.10.2020 00:48	



Certificate of Analytical Results 663729

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **BH01**
Lab Sample Id: 663729-001

Matrix: Soil
Date Collected: 06.06.2020 10:40

Date Received: 06.08.2020 11:15
Sample Depth: 1 - FT

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3128511

Prep Method: SW5035A

% Moisture:

Date Prep: 06.09.2020 13:30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.09.2020 19:58	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.09.2020 19:58	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.09.2020 19:58	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.09.2020 19:58	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.09.2020 19:58	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.09.2020 19:58	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.09.2020 19:58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	06.09.2020 19:58		
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.09.2020 19:58		



Certificate of Analytical Results 663729

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **BH01A** Matrix: Soil Date Received: 06.08.2020 11:15
 Lab Sample Id: 663729-002 Date Collected: 06.06.2020 11:08 Sample Depth: 4 - FT
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 06.09.2020 11:00 Basis: Wet Weight
 Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	811	49.9	mg/kg	06.09.2020 14:09		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 06.09.2020 14:30 Basis: Wet Weight
 Seq Number: 3128470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	06.10.2020 01:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	06.10.2020 01:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	06.10.2020 01:08	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	06.10.2020 01:08	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	06.10.2020 01:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	06.10.2020 01:08	
o-Terphenyl	84-15-1	73	%	70-135	06.10.2020 01:08	



Certificate of Analytical Results 663729

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **BH01A**
Lab Sample Id: 663729-002

Matrix: Soil
Date Collected: 06.06.2020 11:08

Date Received: 06.08.2020 11:15
Sample Depth: 4 - FT

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 06.09.2020 13:30

Basis: Wet Weight

Seq Number: 3128511

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.09.2020 20:18	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.09.2020 20:18	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.09.2020 20:18	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.09.2020 20:18	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.09.2020 20:18	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.09.2020 20:18	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.09.2020 20:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.09.2020 20:18	
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.09.2020 20:18	



Certificate of Analytical Results 663729

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **BH02** Matrix: Soil Date Received: 06.08.2020 11:15
 Lab Sample Id: 663729-003 Date Collected: 06.06.2020 11:00 Sample Depth: 1 - FT
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 06.09.2020 11:00 Basis: Wet Weight
 Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1620	49.4	mg/kg	06.09.2020 14:14		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 06.09.2020 14:30 Basis: Wet Weight
 Seq Number: 3128470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	06.10.2020 01:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	06.10.2020 01:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	06.10.2020 01:29	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	06.10.2020 01:29	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	06.10.2020 01:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	06.10.2020 01:29	
o-Terphenyl	84-15-1	72	%	70-135	06.10.2020 01:29	



Certificate of Analytical Results 663729

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **BH02**
Lab Sample Id: 663729-003

Matrix: Soil
Date Collected: 06.06.2020 11:00

Date Received: 06.08.2020 11:15
Sample Depth: 1 - FT

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 06.09.2020 13:30

Basis: Wet Weight

Seq Number: 3128511

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	06.09.2020 20:38	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	06.09.2020 20:38	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	06.09.2020 20:38	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	06.09.2020 20:38	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	06.09.2020 20:38	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	06.09.2020 20:38	U	1
Total BTEX		<0.00198	0.00198	mg/kg	06.09.2020 20:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.09.2020 20:38	
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.09.2020 20:38	



Certificate of Analytical Results 663729

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **BH02A** Matrix: Soil Date Received: 06.08.2020 11:15
 Lab Sample Id: 663729-004 Date Collected: 06.06.2020 11:12 Sample Depth: 3 - FT
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 06.09.2020 11:00 Basis: Wet Weight
 Seq Number: 3128439

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	864	49.4	mg/kg	06.09.2020 14:20		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 06.09.2020 14:30 Basis: Wet Weight
 Seq Number: 3128470

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	06.10.2020 01:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	06.10.2020 01:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	06.10.2020 01:49	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	06.10.2020 01:49	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	06.10.2020 01:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	76	%	70-135	06.10.2020 01:49	
o-Terphenyl	84-15-1	74	%	70-135	06.10.2020 01:49	



Certificate of Analytical Results 663729

LT Environmental, Inc., Arvada, CO

Nash 302-402H

Sample Id: **BH02A**
Lab Sample Id: 663729-004

Matrix: Soil
Date Collected: 06.06.2020 11:12

Date Received: 06.08.2020 11:15
Sample Depth: 3 - FT

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 06.09.2020 13:30

Basis: Wet Weight

Seq Number: 3128511

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.09.2020 20:59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.09.2020 20:59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.09.2020 20:59	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.09.2020 20:59	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.09.2020 20:59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.09.2020 20:59	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.09.2020 20:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	06.09.2020 20:59	
1,4-Difluorobenzene	540-36-3	111	%	70-130	06.09.2020 20:59	



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: Chloride by EPA 300

Seq Number: 3128439

MB Sample Id: 7705093-1-BLK

Matrix: Solid

LCS Sample Id: 7705093-1-BKS

Prep Method: E300P

Date Prep: 06.09.2020

LCSD Sample Id: 7705093-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	251	100	253	101	90-110	1	20	mg/kg	06.09.2020 11:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3128439

Parent Sample Id: 663802-001

Matrix: Soil

MS Sample Id: 663802-001 S

Prep Method: E300P

Date Prep: 06.09.2020

MSD Sample Id: 663802-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	205	201	387	91	388	91	90-110	0	20	mg/kg	06.09.2020 12:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3128439

Parent Sample Id: 663803-003

Matrix: Soil

MS Sample Id: 663803-003 S

Prep Method: E300P

Date Prep: 06.09.2020

MSD Sample Id: 663803-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	66.8	200	257	95	257	95	90-110	0	20	mg/kg	06.09.2020 13:28	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3128470

MB Sample Id: 7705090-1-BLK

Matrix: Solid

LCS Sample Id: 7705090-1-BKS

Prep Method: SW8015P

Date Prep: 06.09.2020

LCSD Sample Id: 7705090-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	969	97	980	98	70-135	1	35	mg/kg	06.09.2020 21:23	
Diesel Range Organics (DRO)	<50.0	1000	1060	106	1070	107	70-135	1	35	mg/kg	06.09.2020 21:23	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		107		105		70-135	%	06.09.2020 21:23
o-Terphenyl	92		102		99		70-135	%	06.09.2020 21:23

Analytical Method: TPH by SW8015 Mod

Seq Number: 3128470

Matrix: Solid

MB Sample Id: 7705090-1-BLK

Prep Method: SW8015P

Date Prep: 06.09.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	06.09.2020 21:02	

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

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

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

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



LT Environmental, Inc.
Nash 302-402H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3128470

Parent Sample Id: 663823-001

Matrix: Soil

MS Sample Id: 663823-001 S

Prep Method: SW8015P

Date Prep: 06.09.2020

MSD Sample Id: 663823-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	998	100	966	97	70-135	3	35	mg/kg	06.09.2020 22:24	
Diesel Range Organics (DRO)	<50.0	999	1080	108	1040	104	70-135	4	35	mg/kg	06.09.2020 22:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		96		70-135	%	06.09.2020 22:24
o-Terphenyl	88		85		70-135	%	06.09.2020 22:24

Analytical Method: BTEX by EPA 8021B

Seq Number: 3128511

MB Sample Id: 7705083-1-BLK

Matrix: Solid

LCS Sample Id: 7705083-1-BKS

Prep Method: SW5035A

Date Prep: 06.09.2020

LCSD Sample Id: 7705083-1-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	0.107	107	0.107	107	70-130	0	35	mg/kg	06.09.2020 11:27	
Toluene	<0.00200	0.100	0.100	100	0.101	101	70-130	1	35	mg/kg	06.09.2020 11:27	
Ethylbenzene	<0.00200	0.100	0.0932	93	0.0944	94	71-129	1	35	mg/kg	06.09.2020 11:27	
m,p-Xylenes	<0.00400	0.200	0.191	96	0.194	97	70-135	2	35	mg/kg	06.09.2020 11:27	
o-Xylene	<0.00200	0.100	0.0980	98	0.0992	99	71-133	1	35	mg/kg	06.09.2020 11:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		105		107		70-130	%	06.09.2020 11:27
4-Bromofluorobenzene	95		91		92		70-130	%	06.09.2020 11:27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3128511

Parent Sample Id: 663802-001

Matrix: Soil

MS Sample Id: 663802-001 S

Prep Method: SW5035A

Date Prep: 06.09.2020

MSD Sample Id: 663802-001 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	0.0917	92	0.112	112	70-130	20	35	mg/kg	06.09.2020 12:49	
Toluene	<0.00200	0.100	0.0875	88	0.106	106	70-130	19	35	mg/kg	06.09.2020 12:49	
Ethylbenzene	<0.00200	0.100	0.0829	83	0.101	101	71-129	20	35	mg/kg	06.09.2020 12:49	
m,p-Xylenes	<0.00401	0.200	0.173	87	0.208	104	70-135	18	35	mg/kg	06.09.2020 12:49	
o-Xylene	<0.00200	0.100	0.0851	85	0.103	103	71-133	19	35	mg/kg	06.09.2020 12:49	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		108		70-130	%	06.09.2020 12:49
4-Bromofluorobenzene	96		92		70-130	%	06.09.2020 12:49

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: 6637 2-9

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) 365-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813)

Page _____ of _____

Project Manager:		Dan Moir		Bill to: (if different)		Kyle Littlell	
Company Name:		LT Environmental, Inc., Permian office		Company Name:		XTO Energy	
Address:		3300 North A St. Bldg 1, Unit 222		Address:		3104 E Greene St.	
City, State ZIP:		Midland, TX 79705		City, State ZIP:		Carlsbad, NM	
Phone:		(432) 701-2610		Email:		dmoir@ltenv.com mcafee@ltenv.com	

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

ANALYSIS REQUEST						Work Order Notes	
Project Name:	Nasik 302-402H						
Project Number:	012919258					Routine	☒
P.O. Number:						Rush:	
Sampler's Name:	Robert McAfee					Due Date:	

SAMPLE RECEIPT		Temp Blank:		Yes	No	Wet Ice:	Yes	No
Temperature (°C):	3.0	Thermometer ID						
Received Intact:	Yes No	TMM007						
Cooler Custody Seals:	Yes No N/A	Correction Factor: -0.2						
Sample Custody Seals:	Yes No N/A	Total Containers: 4						

Number of Containers

PA 8015)

EPA 8021)

e (EPA 300.0)

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

[illegible]

Total 200.7 / 6010	200.8 / 6020.	8RCRA	13PPM	Texas	11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO2	Na	Sr	Ti	Sn	U	V	Zn
<i>Circle Method(s) and Metal(s) to be analyzed</i>		TCLP	/ SPLP	6010:	8RCRA	Sb	As	Ba	Be	B	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 \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.																																	
		1631 / 245.1 / 7470 / 7471 : Hg																															

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		6/8/20 11:15			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 06.08.2020 11.15.00 AM

Work Order #: 663729

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T NM 007

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

Samples received in bulk containers.

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Martha Castro

Date: 06.08.2020

Checklist reviewed by:



Jessica Kramer

Date: 06.10.2020



Xenco

Certificate of Analysis Summary 666235

LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H Frac 10-17-19

Project Id: 012919258

Contact: Dan Moir

Project Location: Eddy

Date Received in Lab: Thu 07.02.2020 12:45

Report Date: 07.08.2020 07:44

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	666235-001	666235-002				
	Field Id:	BH02B	BH01B				
	Depth:	6-	6-				
	Matrix:	SOIL	SOIL				
	Sampled:	07.02.2020 10:03	07.02.2020 10:28				
BTEX by EPA 8021B	Extracted:	07.02.2020 13:09	07.02.2020 13:09				
	Analyzed:	07.02.2020 15:52	07.02.2020 16:14				
	Units/RL:	mg/kg RL	mg/kg RL				
		<0.00202 0.00202	<0.00202 0.00202				
Benzene		<0.00202 0.00202	<0.00202 0.00202				
Toluene		<0.00202 0.00202	<0.00202 0.00202				
Ethylbenzene		<0.00202 0.00202	<0.00202 0.00202				
m,p-Xylenes		<0.00403 0.00403	<0.00403 0.00403				
o-Xylene		<0.00202 0.00202	<0.00202 0.00202				
Total Xylenes		<0.00202 0.00202	<0.00202 0.00202				
Total BTEX		<0.00202 0.00202	<0.00202 0.00202				
Chloride by EPA 300	Extracted:	07.02.2020 14:00	07.02.2020 14:00				
	Analyzed:	07.02.2020 16:26	07.02.2020 16:32				
	Units/RL:	mg/kg RL	mg/kg RL				
		326 49.9	196 49.8				
Chloride							
TPH by SW8015 Mod	Extracted:	07.02.2020 14:00	07.02.2020 15:00				
	Analyzed:	07.02.2020 14:44	07.02.2020 15:45				
	Units/RL:	mg/kg RL	mg/kg RL				
		<50.2 50.2	<49.9 49.9				
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<49.9 49.9				
Diesel Range Organics (DRO)		<50.2 50.2	<49.9 49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<49.9 49.9				
Total GRO-DRO		<50.2 50.2	<49.9 49.9				
Total TPH		<50.2 50.2	<49.9 49.9				

BRL - Below Reporting Limit

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



Xenco

Analytical Report 666235

for

LT Environmental, Inc.

Project Manager: Dan Moir

Nash 302-402H Frac 10-17-19

012919258

07.08.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



07.08.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **666235**

Nash 302-402H Frac 10-17-19

Project Address: Eddy

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 Eurofins Xenco, LLC Report Number(s) 666235. 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 Eurofins Xenco, LLC. 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. 666235 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 Eurofins Xenco, LLC 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, appearing to read "JB", written over a light blue rectangular background.

John Builes
Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 666235

LT Environmental, Inc., Arvada, CO

Nash 302-402H Frac 10-17-19

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH02B	S	07.02.2020 10:03	6	666235-001
BH01B	S	07.02.2020 10:28	6	666235-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 302-402H Frac 10-17-19*

Project ID: 012919258
Work Order Number(s): 666235

Report Date: 07.08.2020
Date Received: 07.02.2020

Sample receipt non conformances and comments:

Revised report issued to correct sample IDs per client request. JB 7/8/20

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 666235

LT Environmental, Inc., Arvada, CO

Nash 302-402H Frac 10-17-19

Sample Id: **BH02B**
Lab Sample Id: 666235-001

Matrix: Soil
Date Collected: 07.02.2020 10:03

Date Received: 07.02.2020 12:45
Sample Depth: 6

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3130685

Date Prep: 07.02.2020 14:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	326	49.9	mg/kg	07.02.2020 16:26		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3130683

Date Prep: 07.02.2020 14:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	07.02.2020 14:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	07.02.2020 14:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	07.02.2020 14:44	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	07.02.2020 14:44	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	07.02.2020 14:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	07.02.2020 14:44	
o-Terphenyl	84-15-1	82	%	70-135	07.02.2020 14:44	



Certificate of Analytical Results 666235

LT Environmental, Inc., Arvada, CO

Nash 302-402H Frac 10-17-19

Sample Id: **BH02B**
Lab Sample Id: 666235-001

Matrix: Soil
Date Collected: 07.02.2020 10:03

Date Received: 07.02.2020 12:45
Sample Depth: 6

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 07.02.2020 13:09

Basis: Wet Weight

Seq Number: 3130687

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.02.2020 15:52	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.02.2020 15:52	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.02.2020 15:52	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	07.02.2020 15:52	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.02.2020 15:52	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.02.2020 15:52	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.02.2020 15:52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	07.02.2020 15:52		
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.02.2020 15:52		



Certificate of Analytical Results 666235

LT Environmental, Inc., Arvada, CO

Nash 302-402H Frac 10-17-19

Sample Id: **BH01B**
Lab Sample Id: 666235-002

Matrix: Soil
Date Collected: 07.02.2020 10:28

Date Received: 07.02.2020 12:45
Sample Depth: 6

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3130685

Date Prep: 07.02.2020 14:00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	196	49.8	mg/kg	07.02.2020 16:32		5

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3130683

Date Prep: 07.02.2020 15:00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	07.02.2020 15:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	07.02.2020 15:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	07.02.2020 15:45	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	07.02.2020 15:45	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	07.02.2020 15:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	07.02.2020 15:45	
o-Terphenyl	84-15-1	81	%	70-135	07.02.2020 15:45	



Certificate of Analytical Results 666235

LT Environmental, Inc., Arvada, CO

Nash 302-402H Frac 10-17-19

Sample Id: **BH01B**
Lab Sample Id: 666235-002

Matrix: Soil
Date Collected: 07.02.2020 10:28

Date Received: 07.02.2020 12:45
Sample Depth: 6

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 07.02.2020 13:09

Basis: Wet Weight

Seq Number: 3130687

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	07.02.2020 16:14	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	07.02.2020 16:14	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	07.02.2020 16:14	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	07.02.2020 16:14	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	07.02.2020 16:14	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	07.02.2020 16:14	U	1
Total BTEX		<0.00202	0.00202	mg/kg	07.02.2020 16:14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	07.02.2020 16:14		
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.02.2020 16:14		

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

LT Environmental, Inc.

Nash 302-402H Frac 10-17-19

Analytical Method: Chloride by EPA 300

Seq Number: 3130685

MB Sample Id: 7706678-1-BLK

Matrix: Solid

LCS Sample Id: 7706678-1-BKS

Prep Method: E300P

Date Prep: 07.02.2020

LCSD Sample Id: 7706678-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	258	103	266	106	90-110	3	20	mg/kg	07.02.2020 14:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3130685

Parent Sample Id: 666198-001

Matrix: Soil

MS Sample Id: 666198-001 S

Prep Method: E300P

Date Prep: 07.02.2020

MSD Sample Id: 666198-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	174	201	360	93	360	93	90-110	0	20	mg/kg	07.02.2020 15:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3130683

MB Sample Id: 7706690-1-BLK

Matrix: Solid

LCS Sample Id: 7706690-1-BKS

Prep Method: SW8015P

Date Prep: 07.02.2020

LCSD Sample Id: 7706690-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	978	98	999	100	70-135	2	35	mg/kg	07.02.2020 13:27	
Diesel Range Organics (DRO)	<50.0	1000	1060	106	1070	107	70-135	1	35	mg/kg	07.02.2020 13:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	81		116		116		70-135	%	07.02.2020 13:27
o-Terphenyl	77		103		103		70-135	%	07.02.2020 13:27

Analytical Method: TPH by SW8015 Mod

Seq Number: 3130683

Matrix: Solid

MB Sample Id: 7706690-1-BLK

Prep Method: SW8015P

Date Prep: 07.02.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	07.02.2020 13:06	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3130683

Matrix: Soil

Parent Sample Id: 666235-001

MS Sample Id: 666235-001 S

Prep Method: SW8015P

Date Prep: 07.02.2020

MSD Sample Id: 666235-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	969	96	992	99	70-135	2	35	mg/kg	07.02.2020 15:04	
Diesel Range Organics (DRO)	<50.3	1010	1060	105	1100	110	70-135	4	35	mg/kg	07.02.2020 15:04	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	89		94		70-135	%	07.02.2020 15:04
o-Terphenyl	79		84		70-135	%	07.02.2020 15:04

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

LT Environmental, Inc.

Nash 302-402H Frac 10-17-19

Analytical Method: BTEX by EPA 8021B

Seq Number: 3130687

MB Sample Id: 7706683-1-BLK

Matrix: Solid

LCS Sample Id: 7706683-1-BKS

Prep Method: SW5035A

Date Prep: 07.02.2020

LCSD Sample Id: 7706683-1-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	0.108	108	0.105	105	70-130	3	35	mg/kg	07.02.2020 13:32	
Toluene	<0.00200	0.100	0.104	104	0.104	104	70-130	0	35	mg/kg	07.02.2020 13:32	
Ethylbenzene	<0.00200	0.100	0.0990	99	0.101	101	71-129	2	35	mg/kg	07.02.2020 13:32	
m,p-Xylenes	<0.00400	0.200	0.200	100	0.206	103	70-135	3	35	mg/kg	07.02.2020 13:32	
o-Xylene	<0.00200	0.100	0.0992	99	0.102	102	71-133	3	35	mg/kg	07.02.2020 13:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		98		70-130	%	07.02.2020 13:32
4-Bromofluorobenzene	95		101		106		70-130	%	07.02.2020 13:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3130687

Parent Sample Id: 666198-001

Matrix: Soil

MS Sample Id: 666198-001 S

Prep Method: SW5035A

Date Prep: 07.02.2020

MSD Sample Id: 666198-001 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	0.112	112	0.0984	97	70-130	13	35	mg/kg	07.02.2020 14:15	
Toluene	<0.00200	0.0998	0.109	109	0.0962	95	70-130	12	35	mg/kg	07.02.2020 14:15	
Ethylbenzene	<0.00200	0.0998	0.105	105	0.0919	91	71-129	13	35	mg/kg	07.02.2020 14:15	
m,p-Xylenes	<0.00399	0.200	0.213	107	0.187	93	70-135	13	35	mg/kg	07.02.2020 14:15	
o-Xylene	<0.00200	0.0998	0.104	104	0.0915	91	71-133	13	35	mg/kg	07.02.2020 14:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		70-130	%	07.02.2020 14:15
4-Bromofluorobenzene	103		104		70-130	%	07.02.2020 14:15

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 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

Certificate of Analysis Summary 669089



LT Environmental, Inc., Arvada, CO

Project Name: Nash 302-402H Frac

Project Id: 012919258

Contact: Dan Moir

Project Location:

Date Received in Lab: Tue 08.04.2020 14:36

Report Date: 08.05.2020 13:38

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	669089-001	669089-002				
	Field Id:	BH04	BH04A				
	Depth:	1- ft	4- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	08.04.2020 10:53	08.04.2020 11:30				
BTEX by EPA 8021B	Extracted:	08.04.2020 17:00	08.04.2020 17:00				
	Analyzed:	08.05.2020 02:01	08.05.2020 02:24				
	Units/RL:	mg/kg RL	mg/kg RL				
		<0.00199 0.00199	<0.00200 0.00200				
Benzene		<0.00199 0.00199	<0.00200 0.00200				
Toluene		<0.00199 0.00199	<0.00200 0.00200				
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200				
m,p-Xylenes		<0.00398 0.00398	<0.00401 0.00401				
o-Xylene		<0.00199 0.00199	<0.00200 0.00200				
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200				
Total BTEX		<0.00199 0.00199	<0.00200 0.00200				
Chloride by EPA 300	Extracted:	08.04.2020 17:40	08.04.2020 17:40				
	Analyzed:	08.05.2020 08:56	08.04.2020 22:32				
	Units/RL:	mg/kg RL	mg/kg RL				
		107 10.0	336 9.98				
Chloride							
TPH by SW8015 Mod	Extracted:	08.04.2020 16:30	08.04.2020 17:30				
	Analyzed:	08.04.2020 21:43	08.05.2020 02:07				
	Units/RL:	mg/kg RL	mg/kg RL				
		<50.0 50.0	<49.9 49.9				
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9				
Diesel Range Organics (DRO)		<50.0 50.0	<49.9 49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9				
Total GRO-DRO		<50.0 50.0	<49.9 49.9				
Total TPH		<50.0 50.0	<49.9 49.9				

BRL - Below Reporting Limit

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



Analytical Report 669089

for

LT Environmental, Inc.

Project Manager: Dan Moir

Nash 302-402H Frac

012919258

08.05.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



08.05.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **669089**

Nash 302-402H Frac

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 669089. 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 Eurofins Xenco, LLC. 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. 669089 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

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

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 669089

LT Environmental, Inc., Arvada, CO

Nash 302-402H Frac

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH04	S	08.04.2020 10:53	1 ft	669089-001
BH04A	S	08.04.2020 11:30	4 ft	669089-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 302-402H Frac*

Project ID: 012919258
Work Order Number(s): 669089

Report Date: 08.05.2020
Date Received: 08.04.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 669089

LT Environmental, Inc., Arvada, CO

Nash 302-402H Frac

Sample Id: **BH04** Matrix: Soil Date Received: 08.04.2020 14:36
 Lab Sample Id: 669089-001 Date Collected: 08.04.2020 10:53 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.04.2020 17:40 Basis: Wet Weight
 Seq Number: 3133578

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	107	10.0	mg/kg	08.05.2020 08:56		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.04.2020 16:30 Basis: Wet Weight
 Seq Number: 3133557

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	08.04.2020 21:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	08.04.2020 21:43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	08.04.2020 21:43	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	08.04.2020 21:43	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	08.04.2020 21:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	08.04.2020 21:43	
o-Terphenyl	84-15-1	105	%	70-135	08.04.2020 21:43	



Certificate of Analytical Results 669089

LT Environmental, Inc., Arvada, CO

Nash 302-402H Frac

Sample Id: **BH04**
Lab Sample Id: 669089-001

Matrix: Soil
Date Collected: 08.04.2020 10:53

Date Received: 08.04.2020 14:36
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 08.04.2020 17:00

Basis: Wet Weight

Seq Number: 3133569

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.05.2020 02:01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.05.2020 02:01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.05.2020 02:01	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.05.2020 02:01	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.05.2020 02:01	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.05.2020 02:01	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.05.2020 02:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	08.05.2020 02:01	
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.05.2020 02:01	



Certificate of Analytical Results 669089

LT Environmental, Inc., Arvada, CO

Nash 302-402H Frac

Sample Id: **BH04A** Matrix: Soil Date Received: 08.04.2020 14:36
 Lab Sample Id: 669089-002 Date Collected: 08.04.2020 11:30 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 08.04.2020 17:40 Basis: Wet Weight
 Seq Number: 3133578

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	336	9.98	mg/kg	08.04.2020 22:32		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 08.04.2020 17:30 Basis: Wet Weight
 Seq Number: 3133550

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	08.05.2020 02:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	08.05.2020 02:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	08.05.2020 02:07	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	08.05.2020 02:07	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	08.05.2020 02:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	08.05.2020 02:07	
o-Terphenyl	84-15-1	103	%	70-135	08.05.2020 02:07	



Certificate of Analytical Results 669089

LT Environmental, Inc., Arvada, CO

Nash 302-402H Frac

Sample Id: **BH04A**
Lab Sample Id: 669089-002

Matrix: Soil
Date Collected: 08.04.2020 11:30

Date Received: 08.04.2020 14:36
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 08.04.2020 17:00

Basis: Wet Weight

Seq Number: 3133569

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.05.2020 02:24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.05.2020 02:24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.05.2020 02:24	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.05.2020 02:24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.05.2020 02:24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.05.2020 02:24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.05.2020 02:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	08.05.2020 02:24	
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.05.2020 02:24	

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Nash 302-402H Frac

Analytical Method: Chloride by EPA 300

Seq Number: 3133578

MB Sample Id: 7708740-1-BLK

Matrix: Solid

LCS Sample Id: 7708740-1-BKS

Prep Method: E300P

Date Prep: 08.04.2020

LCSD Sample Id: 7708740-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	269	108	268	107	90-110	0	20	mg/kg	08.04.2020 21:14	

Analytical Method: Chloride by EPA 300

Seq Number: 3133578

Parent Sample Id: 669080-011

Matrix: Soil

MS Sample Id: 669080-011 S

Prep Method: E300P

Date Prep: 08.04.2020

MSD Sample Id: 669080-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	20.2	200	225	102	225	102	90-110	0	20	mg/kg	08.04.2020 21:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3133578

Parent Sample Id: 669107-002

Matrix: Soil

MS Sample Id: 669107-002 S

Prep Method: E300P

Date Prep: 08.04.2020

MSD Sample Id: 669107-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	399	201	604	102	619	109	90-110	2	20	mg/kg	08.04.2020 22:49	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3133557

MB Sample Id: 7708701-1-BLK

Matrix: Solid

LCS Sample Id: 7708701-1-BKS

Prep Method: SW8015P

Date Prep: 08.04.2020

LCSD Sample Id: 7708701-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1060	106	1020	102	70-135	4	35	mg/kg	08.04.2020 12:46	
Diesel Range Organics (DRO)	<50.0	1000	1150	115	1110	111	70-135	4	35	mg/kg	08.04.2020 12:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		131		125		70-135	%	08.04.2020 12:46
o-Terphenyl	108		120		115		70-135	%	08.04.2020 12:46

Analytical Method: TPH by SW8015 Mod

Seq Number: 3133550

MB Sample Id: 7708721-1-BLK

Matrix: Solid

LCS Sample Id: 7708721-1-BKS

Prep Method: SW8015P

Date Prep: 08.04.2020

LCSD Sample Id: 7708721-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	961	96	947	95	70-135	1	35	mg/kg	08.05.2020 01:26	
Diesel Range Organics (DRO)	<50.0	1000	1030	103	1010	101	70-135	2	35	mg/kg	08.05.2020 01:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		117		114		70-135	%	08.05.2020 01:26
o-Terphenyl	100		110		107		70-135	%	08.05.2020 01:26

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

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

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

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



LT Environmental, Inc.

Nash 302-402H Frac

Analytical Method: TPH by SW8015 Mod

Seq Number: 3133557

Matrix: Solid

Prep Method: SW8015P

Date Prep: 08.04.2020

MB Sample Id: 7708701-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	08.04.2020 12:25	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3133550

Matrix: Solid

Prep Method: SW8015P

Date Prep: 08.04.2020

MB Sample Id: 7708721-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	08.05.2020 01:06	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3133557

Matrix: Soil

Prep Method: SW8015P

Date Prep: 08.04.2020

Parent Sample Id: 669020-011

MS Sample Id: 669020-011 S

MSD Sample Id: 669020-011 SD

Parameter

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.3	1010	993	98	914	91	70-135	8	35	mg/kg	08.04.2020 13:46	
Diesel Range Organics (DRO)	<50.3	1010	1080	107	1000	100	70-135	8	35	mg/kg	08.04.2020 13:46	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		111		70-135	%	08.04.2020 13:46
o-Terphenyl	112		103		70-135	%	08.04.2020 13:46

Analytical Method: TPH by SW8015 Mod

Seq Number: 3133550

Matrix: Soil

Prep Method: SW8015P

Date Prep: 08.04.2020

Parent Sample Id: 669089-002

MS Sample Id: 669089-002 S

MSD Sample Id: 669089-002 SD

Parameter

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	901	90	878	88	70-135	3	35	mg/kg	08.05.2020 02:27	
Diesel Range Organics (DRO)	<50.1	1000	949	95	930	93	70-135	2	35	mg/kg	08.05.2020 02:27	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		110		70-135	%	08.05.2020 02:27
o-Terphenyl	104		104		70-135	%	08.05.2020 02:27

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

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

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

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



LT Environmental, Inc.
Nash 302-402H Frac

Analytical Method: BTEX by EPA 8021B

Seq Number: 3133569

Matrix: Solid

Prep Method: SW5035A

Date Prep: 08.04.2020

MB Sample Id: 7708724-1-BLK

LCS Sample Id: 7708724-1-BKS

LCSD Sample Id: 7708724-1-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	0.115	115	0.107	107	70-130	7	35	mg/kg	08.04.2020 15:00	
Toluene	<0.00200	0.100	0.109	109	0.101	101	70-130	8	35	mg/kg	08.04.2020 15:00	
Ethylbenzene	<0.00200	0.100	0.102	102	0.0946	95	71-129	8	35	mg/kg	08.04.2020 15:00	
m,p-Xylenes	<0.00400	0.200	0.207	104	0.193	97	70-135	7	35	mg/kg	08.04.2020 15:00	
o-Xylene	<0.00200	0.100	0.101	101	0.0941	94	71-133	7	35	mg/kg	08.04.2020 15:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		100		70-130	%	08.04.2020 15:00
4-Bromofluorobenzene	95		102		103		70-130	%	08.04.2020 15:00

Analytical Method: BTEX by EPA 8021B

Seq Number: 3133569

Matrix: Soil

Prep Method: SW5035A

Date Prep: 08.04.2020

Parent Sample Id: 669020-001

MS Sample Id: 669020-001 S

MSD Sample Id: 669020-001 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	0.128	127	0.126	126	70-130	2	35	mg/kg	08.04.2020 15:45	
Toluene	0.00273	0.101	0.124	120	0.122	119	70-130	2	35	mg/kg	08.04.2020 15:45	
Ethylbenzene	0.00199	0.101	0.115	112	0.127	125	71-129	10	35	mg/kg	08.04.2020 15:45	
m,p-Xylenes	0.00331	0.201	0.233	114	0.226	111	70-135	3	35	mg/kg	08.04.2020 15:45	
o-Xylene	<0.00201	0.101	0.113	112	0.111	111	71-133	2	35	mg/kg	08.04.2020 15:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		70-130	%	08.04.2020 15:45
4-Bromofluorobenzene	105		117		70-130	%	08.04.2020 15:45

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.:

6009089

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 _____ of _____

Project Manager:		Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:		LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:		3300 North A St. Bldg 1, Unit 222	Address:	3104 E Greene St.
City, State ZIP:		Midland, TX 79705	City, State ZIP:	Carlsbad, NM
Phone:		(432) 701-2610	Email:	dmoir@ltenv.com mccafee@ltenv.com

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

[illegible][illegible]

Total 200.7 / 6010 200.8 / 6020:

8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	Tl	Sn	U	V	Zn
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[illegible]

Signature of this document and reimbursement of samples constitutes a valid purchase order from client company to Xencro, its affiliates and subcontractors. It assigns standard terms and conditions service. Xencro will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xencro. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xencro, 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
		8/4/20 1430			

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 08.04.2020 02:36.00 PM

Work Order #: 669089

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)?	2.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

Samples received in bulk containers.

*** 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: 08.04.2020

Checklist reviewed by:



Jessica Kramer

Date: 08.04.2020

ATTACHMENT 4: LITHOLOGIC / SOIL SAMPLING LOG



Released to Imaging: 2/16/2021 1:53:56 PM

[illegible]

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP		BH or MW Name:		Date:					
		BH02		7/2/2020					
		Site Name: Nash 302-402H Frac 10-17-19							
		RP or Incident Number: NVV2002841074							
		LTE Job Number: 12919258							
LITHOLOGIC / SOIL SAMPLING LOG									
Lat/Long:		Field Screening:		Hole Diameter:					
		Chloride, PID		1.5'					
				Total Depth: 6'					
				Depth to Water: -					
Backfill or Well Construction Materials / Comments:									
Pothole started at 5' bgs in excavation									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks	Backfill / Well Completion
M	313	0	N	BH02B	0	0	E X C A V A T E D	5'-6' CLAY, cohesive, high plasticity, red/brown, imbedded gypsum, trace silt, moist, no odor, no stain	
					1	1			
					2	2			
					3	3			
					4	4			
					5	5	CH	TD @ 6.0'	
6	6								

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP		BH or MW Name:		Date:					
		PH04		6/6/2020					
		Site Name: Nash 302-402H Frac 10-17-19							
		RP or Incident Number: NVV2002841074							
		LTE Job Number: 12919258							
LITHOLOGIC / SOIL SAMPLING LOG									
Lat/Long:		Field Screening:		Hole Diameter:					
		Chloride, PID		2'					
Method: Track hoe									
Total Depth: 2.5'									
Depth to Water: -									
Backfill or Well Construction Materials / Comments:									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks	Backfill / Well Completion
						0			
D	800	0.1	N		1'	1'	S	SP-SM small round grain, brown	
D	840	0.2	N		2'	2'	S	SP-SM small round grain, brown	
D	440	0.1	N		2.5'	2.5'	R	Gypsum bedrock, grey/white, highly consolidated	

 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		BH or MW Name:		Date:					
		PH05		6/6/2020					
		Site Name: Nash 302-402H Frac 10-17-19							
		RP or Incident Number: NVV2002841074							
		LTE Job Number: 12919258							
LITHOLOGIC / SOIL SAMPLING LOG									
Lat/Long:		Field Screening:		Hole Diameter:					
		Chloride, PID		2'					
Method: Track hoe									
Total Depth: 4'									
Depth to Water: -									
Backfill or Well Construction Materials / Comments:									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks	Backfill / Well Completion
						0			
D	1,300	0.3	N		1'	1'	S	SP-SM small round grain, brown	
D	1,300	0.1	N		2'	2'	S	SP-SM small round grain, brown	
D	1300	0.1	N		3'	3'	S	SP-SM small round grain, brown	
D	960	0.1	N		4'	4'	S R	SP-SM small round grain, brown Gypsum Bedrock	

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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

<u>Incident ID</u>	NVV2002841074
<u>District RP</u>	
<u>Facility ID</u>	
<u>Application ID</u>	

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.288134 Longitude -103.929552
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	NASH UNIT 302 – 402 H FRAC	Site Type	Well Location
Date Release Discovered	10/17/2019	API# (if applicable)	30-015-45501 (NASH UNIT 302H)

Unit Letter	Section	Township	Range	County
B	19	23S	30E	EDDY

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	0	Volume Recovered (bbls)	0
☒ Produced Water	Volume Released (bbls)	22.87	Volume Recovered (bbls)	10
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?		☐ Yes ☐ No	
☐ Condensate	Volume Released (bbls)		Volume Recovered (bbls)	
☐ Natural Gas	Volume Released (Mcf)		Volume Recovered (Mcf)	
☐ Other (describe)	Volume/Weight Released (provide units)		Volume/Weight Recovered (provide units)	

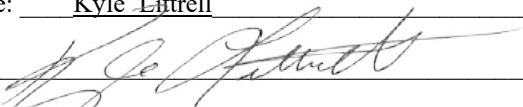
Cause of Release: On a transfer line from Nash FRAC Unit developed a leak.
Additional third party resources have been retained to assist in the remediation.

Incident ID	NVV2002841074
District RP	
Facility ID	
Application ID	

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? YES – Reported at the beginning as : An unauthorized release of fluid over 25 barrels, after investigation and calculation – Total Release was 22.87 bbls.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? YES, by Amy Ruth : to Mike Bratcher; Rob Hamlet; Victoria Venegas; 'Griswold, Jim, EMNRD'; 'rmann@slo.state.nm.us', blm_nm_cfo_spill@blm.gov	

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>	Title: <u>SH&E Supervisor</u>
Signature: 	Date: <u>2-12-21</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: _____
<u>OCD Only</u> Received by: _____ Date: _____	

Incident ID	NVV2002841074
District RP	
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: Each of the following items must be included in the report.

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

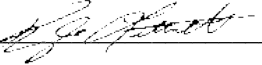
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	NVV2002841074
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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 SupervisorSignature:  Date: 02/12/2021email: Kyle_Littrell@xtoenergy.com Telephone: (432)-221-7331**OCD Only**

Received by: _____ Date: _____

Incident ID	NVV2002841074
District RP	
Facility ID	
Application ID	

Remediation Plan

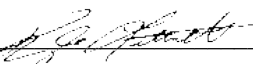
Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: 02/12/2021
email: Kyle.Littrell@xtoenergy.com Telephone: (432)-221-7331

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

From: [Hensley, Chad, EMNRD](#)
To: kyle_littrell@xtoenergy.com
Subject: XTO_Variance Request_Nash Unit 302-402H Frac_NVV2002841074
Date: Friday, February 12, 2021 9:08:00 AM

Kyle,

We have received your closure report for **NVV2002841074 Nash Unit 302-402H Frac**, thank you. This closure is denied, but I will receive an updated c-141.

Please include signed and dated C-141 (Pages 3-5) for a remediation plan. Please for future reports of this nature, entitle your report Remediation-Deferral request when you submit the report. OCD will not close a release, where contaminants are left in place, due to tight proximity to equipment. Sample point SW16, SW018, and PH01 will require a formal deferral request if you are looking to complete remediation during any future major well pad construction/alteration or final plugging and abandonment, whichever occurs first.

Please let me know if you have any further questions.

Regards,

Chad Hensley • Environmental Specialist Advanced

Environmental Bureau

EMNRD - Oil Conservation Division

811 First St. | Artesia, NM 88210

Office: 575.748.1283 | Cell: 575-703-1723

chad.hensley@state.nm.us

<http://www.emnrd.state.nm.us/OCD/>



District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 10590

COMMENTS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Building #5 Midland, TX79707		OGRID: 5380	Action Number: 10590	Action Type: C-141
Created By chensley	Comment Deferral has been approved.		Comment Date 02/12/2021	

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 10590

CONDITIONS OF APPROVAL

Operator: XTO ENERGY, INC Building #5	6401 Holiday Hill Road Midland, TX79707	OGRID: 5380	Action Number: 10590	Action Type: C-141
OCD Reviewer chensley	Condition None			