

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	NRM2019525477
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 32.147102 Longitude -103.923133
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Muy Wayno	Site Type	Frac Pond
Date Release Discovered	06-24-2020	API#	(if applicable)

Unit Letter	Section	Township	Range	County
F	7	25S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 129.7	Volume Recovered (bbls) 0
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Fluid was released from a lay-flat line feeding the Muy Wayno Frac Pond from the recycle plant, causing produced water to spill onto pond embankment and into pasture. A third-party contractor has been retained for remediation activities.

Form C-141

State of New Mexico
Oil Conservation Division

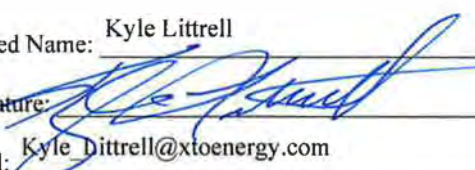
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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? A release greater than 25 barrels.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, by Adrian Baker to 'Griswold, Jim, EMNRD'; Bratcher, Mike, EMNRD; 'Venegas, Victoria, EMNRD'; Hamlet, Robert, EMNRD; Mann, Ryan via email on Wednesday, June 24, 2020 4:24 PM.	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u> Signature:  email: <u>Kyle_Littrell@xtoenergy.com</u>	Title: <u>SH&E Supervisor</u> Date: <u>7-1-20</u> Telephone: <u>432-221-7331</u>
OCD Only Received by: <u>Ramona Marcus</u> Date: <u>7/13/2020</u>	

NRM2019525477

Location:	Muy Wayno Frac Pond	
Spill Date:	6/24/2020	
Area 1		
Approximate Area =	4582.00	sq. ft.
Average Saturation (or depth) of spill =	1.00	inches
Average Porosity Factor =	0.03	
VOLUME OF LEAK		
Total Produced Water =	2.04	bbls
Area 2		
Approximate Area =	14336.00	sq. ft.
Average Saturation (or depth) of spill =	4.00	inches
Average Porosity Factor =	0.15	
VOLUME OF LEAK		
Total Produced Water =	127.66	bbls
TOTAL VOLUME OF LEAK		
Total Produced Water =	129.70	bbls
TOTAL VOLUME RECOVERED		
Total Produced Water =	0.00	bbls

Incident ID	NRM2019525477
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Site Assessment/Characterization

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

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

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

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

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

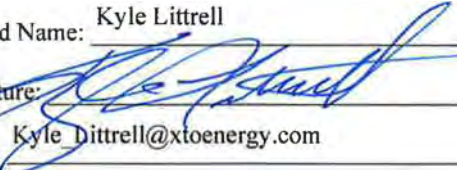
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico
Oil Conservation Division

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Printed Name: Kyle Littrell Title: SH&E Supervisor
Signature:  Date: 12/21/20
email: Kyle.Littrell@xtoenergy.com Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	NRM2019525477
District RP	
Facility ID	
Application ID	

Closure

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

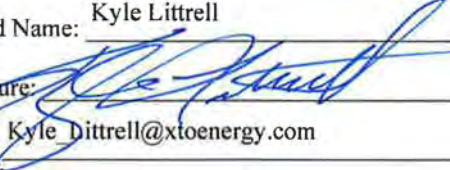
Closure Report Attachment Checklist: Each of the following items must be included in the closure report.

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

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

Printed Name: Kyle Littrell

Title: SH&E Supervisor

Signature: 

Date: 12/21/20

email: Kyle.Littrell@xtoenergy.com

Telephone: _____

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: _____

Incident ID	NRM2019525477
District RP	
Facility ID	
Application ID	

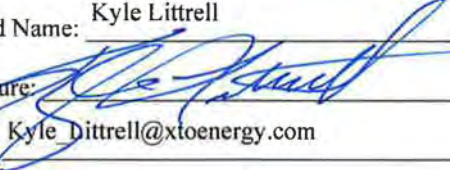
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Printed Name: Kyle LittrellTitle: SH&E SupervisorSignature: Date: 12/21/20email: Kyle.Littrell@xtoenergy.com

Telephone: _____

OCD Only

Received by: Robert HamletDate: 4/19/2021

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: Robert HamletDate: 4/19/2021Printed Name: Robert HamletTitle: Environmental Specialist - Advanced

ATTACHMENT 4: LABORATORY ANALYTICAL RESULTS

Certificate of Analysis Summary 667695



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id: 012920104

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Mon 07.20.2020 16:28

Report Date: 07.22.2020 12:54

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	667695-001	667695-002	667695-003	667695-004	667695-005	667695-006
	<i>Field Id:</i>	SS01	SS02	SS03	SS04	SS05	SS06
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	07.20.2020 12:47	07.20.2020 13:05	07.20.2020 13:17	07.20.2020 13:22	07.20.2020 13:25	07.20.2020 13:28
BTEX by EPA 8021B	<i>Extracted:</i>	07.21.2020 12:00	07.21.2020 12:00	07.21.2020 12:00	07.21.2020 12:00	07.21.2020 12:00	07.21.2020 12:00
	<i>Analyzed:</i>	07.21.2020 16:47	07.21.2020 18:49	07.21.2020 19:10	07.21.2020 19:32	07.21.2020 19:53	07.21.2020 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		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198
Toluene		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198
m,p-Xylenes		<0.00398 0.00398	<0.00402 0.00402	<0.00402 0.00402	<0.00402 0.00402	<0.00402 0.00402	<0.00397 0.00397
o-Xylene		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198
Total Xylenes		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198
Total BTEX		<0.00199 0.00199	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	07.21.2020 08:30	07.21.2020 08:30	07.21.2020 08:30	07.21.2020 08:30	07.21.2020 08:30	07.21.2020 08:30
	<i>Analyzed:</i>	07.21.2020 15:44	07.21.2020 14:59	07.21.2020 15:16	07.21.2020 15:22	07.21.2020 15:27	07.21.2020 15:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		183 10.1	649 9.92	36.5 9.98	30000 1000	376 9.90	508 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	07.21.2020 09:17	07.21.2020 09:17	07.21.2020 09:17	07.21.2020 09:17	07.21.2020 09:17	07.21.2020 09:17
	<i>Analyzed:</i>	07.21.2020 10:49	07.21.2020 11:50	07.21.2020 12:10	07.21.2020 12:30	07.21.2020 12:51	07.21.2020 13:11
	<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	<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.1 50.1
Diesel Range Organics (DRO)		<50.1 50.1	<50.2 50.2	<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.2 50.2	<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.1 50.1
Total GRO-DRO		<50.1 50.1	<50.2 50.2	<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.1 50.1
Total TPH		<50.1 50.1	<50.2 50.2	<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.1 50.1

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 667695



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id: 012920104

Date Received in Lab: Mon 07.20.2020 16:28

Contact: Dan Moir

Report Date: 07.22.2020 12:54

Project Location: Eddy County

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	667695-007					
	Field Id:	SS07					
	Depth:	0.5- ft					
	Matrix:	SOIL					
	Sampled:	07.20.2020 13:32					
BTEX by EPA 8021B	Extracted:	07.21.2020 12:00					
	Analyzed:	07.21.2020 20:36					
	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:	07.21.2020 08:30					
	Analyzed:	07.21.2020 15:38					
	Units/RL:	mg/kg RL					
Chloride		14900 1010					
TPH by SW8015 Mod	Extracted:	07.21.2020 09:17					
	Analyzed:	07.21.2020 13:31					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0					
Diesel Range Organics (DRO)		<50.0 50.0					
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0					
Total GRO-DRO		<50.0 50.0					
Total TPH		<50.0 50.0					

BRL - Below Reporting Limit

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



Analytical Report 667695

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno

012920104

07.22.2020

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)



07.22.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **667695**

Muy Wayno

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 Eurofins Xenco, LLC Report Number(s) 667695. 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. 667695 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 667695****LT Environmental, Inc., Arvada, CO**

Muy Wayno

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	07.20.2020 12:47	0.5 ft	667695-001
SS02	S	07.20.2020 13:05	0.5 ft	667695-002
SS03	S	07.20.2020 13:17	0.5 ft	667695-003
SS04	S	07.20.2020 13:22	0.5 ft	667695-004
SS05	S	07.20.2020 13:25	0.5 ft	667695-005
SS06	S	07.20.2020 13:28	0.5 ft	667695-006
SS07	S	07.20.2020 13:32	0.5 ft	667695-007



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno

Project ID: 012920104
Work Order Number(s): 667695

Report Date: 07.22.2020
Date Received: 07.20.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS01** Matrix: Soil Date Received: 07.20.2020 16:28
 Lab Sample Id: 667695-001 Date Collected: 07.20.2020 12:47 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 07.21.2020 08:30 Basis: Wet Weight
 Seq Number: 3132273

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	183	10.1	mg/kg	07.21.2020 15:44		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 07.21.2020 09:17 Basis: Wet Weight
 Seq Number: 3132229

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	07.21.2020 10:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	07.21.2020 10:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	07.21.2020 10:49	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	07.21.2020 10:49	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	07.21.2020 10:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	07.21.2020 10:49	
o-Terphenyl	84-15-1	97	%	70-135	07.21.2020 10:49	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS01**
Lab Sample Id: 667695-001

Matrix: Soil
Date Collected: 07.20.2020 12:47

Date Received: 07.20.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 07.21.2020 12:00

Basis: Wet Weight

Seq Number: 3132258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.21.2020 16:47	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.21.2020 16:47	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.21.2020 16:47	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.21.2020 16:47	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.21.2020 16:47	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.21.2020 16:47	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.21.2020 16:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	07.21.2020 16:47	
1,4-Difluorobenzene	540-36-3	98	%	70-130	07.21.2020 16:47	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS02** Matrix: Soil Date Received: 07.20.2020 16:28
 Lab Sample Id: 667695-002 Date Collected: 07.20.2020 13:05 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 07.21.2020 08:30 Basis: Wet Weight
 Seq Number: 3132273

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	649	9.92	mg/kg	07.21.2020 14:59		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 07.21.2020 09:17 Basis: Wet Weight
 Seq Number: 3132229

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	07.21.2020 11:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	07.21.2020 11:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	07.21.2020 11:50	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	07.21.2020 11:50	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	07.21.2020 11:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	07.21.2020 11:50	
o-Terphenyl	84-15-1	95	%	70-135	07.21.2020 11:50	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS02**
Lab Sample Id: 667695-002

Matrix: Soil
Date Collected: 07.20.2020 13:05

Date Received: 07.20.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 07.21.2020 12:00

Basis: Wet Weight

Seq Number: 3132258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.21.2020 18:49	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.21.2020 18:49	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.21.2020 18:49	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.21.2020 18:49	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.21.2020 18:49	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.21.2020 18:49	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.21.2020 18:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	07.21.2020 18:49	
1,4-Difluorobenzene	540-36-3	100	%	70-130	07.21.2020 18:49	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS03** Matrix: Soil Date Received: 07.20.2020 16:28
 Lab Sample Id: 667695-003 Date Collected: 07.20.2020 13:17 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 07.21.2020 08:30 Basis: Wet Weight
 Seq Number: 3132273

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	36.5	9.98	mg/kg	07.21.2020 15:16		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 07.21.2020 09:17 Basis: Wet Weight
 Seq Number: 3132229

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	07.21.2020 12:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	07.21.2020 12:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	07.21.2020 12:10	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	07.21.2020 12:10	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	07.21.2020 12:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	07.21.2020 12:10	
o-Terphenyl	84-15-1	104	%	70-135	07.21.2020 12:10	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS03**
Lab Sample Id: 667695-003

Matrix: Soil
Date Collected: 07.20.2020 13:17

Date Received: 07.20.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 07.21.2020 12:00

Basis: Wet Weight

Seq Number: 3132258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.21.2020 19:10	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.21.2020 19:10	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.21.2020 19:10	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.21.2020 19:10	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.21.2020 19:10	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.21.2020 19:10	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.21.2020 19:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	07.21.2020 19:10	
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.21.2020 19:10	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS04** Matrix: Soil Date Received: 07.20.2020 16:28
 Lab Sample Id: 667695-004 Date Collected: 07.20.2020 13:22 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 07.21.2020 08:30 Basis: Wet Weight
 Seq Number: 3132273

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30000	1000	mg/kg	07.21.2020 15:22		100

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 07.21.2020 09:17 Basis: Wet Weight
 Seq Number: 3132229

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	07.21.2020 12:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	07.21.2020 12:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	07.21.2020 12:30	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	07.21.2020 12:30	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	07.21.2020 12:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	07.21.2020 12:30	
o-Terphenyl	84-15-1	104	%	70-135	07.21.2020 12:30	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS04**
Lab Sample Id: 667695-004

Matrix: Soil
Date Collected: 07.20.2020 13:22

Date Received: 07.20.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 07.21.2020 12:00

Basis: Wet Weight

Seq Number: 3132258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.21.2020 19:32	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.21.2020 19:32	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.21.2020 19:32	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.21.2020 19:32	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.21.2020 19:32	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.21.2020 19:32	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.21.2020 19:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.21.2020 19:32	
4-Bromofluorobenzene	460-00-4	110	%	70-130	07.21.2020 19:32	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS05** Matrix: Soil Date Received: 07.20.2020 16:28
 Lab Sample Id: 667695-005 Date Collected: 07.20.2020 13:25 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 07.21.2020 08:30 Basis: Wet Weight
 Seq Number: 3132273

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	376	9.90	mg/kg	07.21.2020 15:27		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 07.21.2020 09:17 Basis: Wet Weight
 Seq Number: 3132229

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	07.21.2020 12:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	07.21.2020 12:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	07.21.2020 12:51	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	07.21.2020 12:51	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	07.21.2020 12:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	07.21.2020 12:51	
o-Terphenyl	84-15-1	98	%	70-135	07.21.2020 12:51	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS05**
Lab Sample Id: 667695-005

Matrix: Soil
Date Collected: 07.20.2020 13:25

Date Received: 07.20.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 07.21.2020 12:00

Basis: Wet Weight

Seq Number: 3132258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.21.2020 19:53	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.21.2020 19:53	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.21.2020 19:53	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.21.2020 19:53	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.21.2020 19:53	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.21.2020 19:53	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.21.2020 19:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.21.2020 19:53	
4-Bromofluorobenzene	460-00-4	103	%	70-130	07.21.2020 19:53	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS06** Matrix: Soil Date Received: 07.20.2020 16:28
 Lab Sample Id: 667695-006 Date Collected: 07.20.2020 13:28 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 07.21.2020 08:30 Basis: Wet Weight
 Seq Number: 3132273

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	508	9.98	mg/kg	07.21.2020 15:33		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 07.21.2020 09:17 Basis: Wet Weight
 Seq Number: 3132229

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	07.21.2020 13:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	07.21.2020 13:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	07.21.2020 13:11	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	07.21.2020 13:11	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	07.21.2020 13:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	07.21.2020 13:11	
o-Terphenyl	84-15-1	104	%	70-135	07.21.2020 13:11	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS06**
Lab Sample Id: 667695-006

Matrix: Soil
Date Collected: 07.20.2020 13:28

Date Received: 07.20.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 07.21.2020 12:00

Basis: Wet Weight

Seq Number: 3132258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	07.21.2020 20:14	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	07.21.2020 20:14	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	07.21.2020 20:14	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	07.21.2020 20:14	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	07.21.2020 20:14	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	07.21.2020 20:14	U	1
Total BTEX		<0.00198	0.00198	mg/kg	07.21.2020 20:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	07.21.2020 20:14	
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.21.2020 20:14	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS07** Matrix: Soil Date Received: 07.20.2020 16:28
 Lab Sample Id: 667695-007 Date Collected: 07.20.2020 13:32 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 07.21.2020 08:30 Basis: Wet Weight
 Seq Number: 3132273

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14900	1010	mg/kg	07.21.2020 15:38		100

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 07.21.2020 09:17 Basis: Wet Weight
 Seq Number: 3132229

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	07.21.2020 13:31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	07.21.2020 13:31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	07.21.2020 13:31	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	07.21.2020 13:31	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	07.21.2020 13:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	07.21.2020 13:31	
o-Terphenyl	84-15-1	99	%	70-135	07.21.2020 13:31	



Certificate of Analytical Results 667695

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SS07**
Lab Sample Id: 667695-007

Matrix: Soil
Date Collected: 07.20.2020 13:32

Date Received: 07.20.2020 16:28
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 07.21.2020 12:00

Basis: Wet Weight

Seq Number: 3132258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.21.2020 20:36	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.21.2020 20:36	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.21.2020 20:36	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.21.2020 20:36	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.21.2020 20:36	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.21.2020 20:36	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.21.2020 20:36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	07.21.2020 20:36		
4-Bromofluorobenzene	460-00-4	106	%	70-130	07.21.2020 20:36		



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.
Muy Wayno

Analytical Method: Chloride by EPA 300

Seq Number: 3132273

MB Sample Id: 7707795-1-BLK

Matrix: Solid

LCS Sample Id: 7707795-1-BKS

Prep Method: E300P

Date Prep: 07.21.2020

LCSD Sample Id: 7707795-1-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	259	104	266	106	90-110	3	20	mg/kg	07.21.2020 14:15	

Analytical Method: Chloride by EPA 300

Seq Number: 3132273

Parent Sample Id: 667693-001

Matrix: Soil

MS Sample Id: 667693-001 S

Prep Method: E300P

Date Prep: 07.21.2020

MSD Sample Id: 667693-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4930	201	5140	104	5130	100	90-110	0	20	mg/kg	07.21.2020 14:37	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3132229

MB Sample Id: 7707730-1-BLK

Matrix: Solid

LCS Sample Id: 7707730-1-BKS

Prep Method: SW8015P

Date Prep: 07.21.2020

LCSD Sample Id: 7707730-1-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	941	94	1010	101	70-135	7	35	mg/kg	07.21.2020 10:08	
Diesel Range Organics (DRO)	<50.0	1000	1080	108	1110	111	70-135	3	35	mg/kg	07.21.2020 10:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		123		133		70-135	%	07.21.2020 10:08
o-Terphenyl	110		117		120		70-135	%	07.21.2020 10:08

Analytical Method: TPH by SW8015 Mod

Seq Number: 3132229

Matrix: Solid

MB Sample Id: 7707730-1-BLK

Prep Method: SW8015P

Date Prep: 07.21.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	07.21.2020 09:45	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3132229

Matrix: Soil

Parent Sample Id: 667695-001

MS Sample Id: 667695-001 S

Prep Method: SW8015P

Date Prep: 07.21.2020

MSD Sample Id: 667695-001 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	1000	100	950	95	70-135	5	35	mg/kg	07.21.2020 11:09	
Diesel Range Organics (DRO)	<50.2	1000	1090	109	1050	105	70-135	4	35	mg/kg	07.21.2020 11:09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		125		70-135	%	07.21.2020 11:09
o-Terphenyl	116		112		70-135	%	07.21.2020 11:09

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

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

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

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



LT Environmental, Inc.

Muy Wayno

Analytical Method: BTEX by EPA 8021B

Seq Number: 3132258

Matrix: Solid

Prep Method: SW5035A

Date Prep: 07.21.2020

MB Sample Id: 7707798-1-BLK

LCS Sample Id: 7707798-1-BKS

LCSD Sample Id: 7707798-1-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	0.117	117	0.118	118	70-130	1	35	mg/kg	07.21.2020 14:48	
Toluene	<0.00200	0.100	0.110	110	0.111	111	70-130	1	35	mg/kg	07.21.2020 14:48	
Ethylbenzene	<0.00200	0.100	0.104	104	0.103	103	71-129	1	35	mg/kg	07.21.2020 14:48	
m,p-Xylenes	<0.00400	0.200	0.211	106	0.210	105	70-135	0	35	mg/kg	07.21.2020 14:48	
o-Xylene	<0.00200	0.100	0.104	104	0.104	104	71-133	0	35	mg/kg	07.21.2020 14:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		100		99		70-130	%	07.21.2020 14:48
4-Bromofluorobenzene	94		101		101		70-130	%	07.21.2020 14:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3132258

Matrix: Soil

Prep Method: SW5035A

Date Prep: 07.21.2020

Parent Sample Id: 667695-001

MS Sample Id: 667695-001 S

MSD Sample Id: 667695-001 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	0.125	125	0.130	129	70-130	4	35	mg/kg	07.21.2020 15:30	
Toluene	<0.00200	0.100	0.128	128	0.123	122	70-130	4	35	mg/kg	07.21.2020 15:30	
Ethylbenzene	<0.00200	0.100	0.121	121	0.114	113	71-129	6	35	mg/kg	07.21.2020 15:30	
m,p-Xylenes	<0.00401	0.200	0.246	123	0.231	115	70-135	6	35	mg/kg	07.21.2020 15:30	
o-Xylene	<0.00200	0.100	0.120	120	0.112	111	71-133	7	35	mg/kg	07.21.2020 15:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		70-130	%	07.21.2020 15:30
4-Bromofluorobenzene	105		105		70-130	%	07.21.2020 15:30

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

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

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

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



Chain of Custody

Work Order No: 16121615

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 Crashtad, NM (432) 704-5440
 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

www.xenco.com Page 1 of 1

Project Manager:	Don Moore	Bill to: (if different)	Kyle Littrell
Company Name:	LI Environmental, Inc., former Office	Company Name:	XTO Energy, Inc
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	fern.th@xenco.com, dmoore@xenco.com

Project Name:	Muy May no	Turn Around	Pres. Code
Project Number:	012920104	Routine	☒
Project Location:	Eddy county	Rush:	
Sampler's Name:	Fathma Smith	Due Date:	
PO #:		Quote #:	

SAMPLE RECEIPT		Temp Blank:	Yes/No	Wet Ice:	Yes/No
Temperature (°C):	11.2	Thermometer ID			
Received Intact:	Yes/No	Correction Factor:	-0.2		
Cooler Custody Seals:	Yes/No	Total Containers:	7		
Sample Custody Seals:	Yes/No				

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Preservative Codes	Sample Comments
SS01		S	7/20/20	1247	0.5 ft	1	X	X	X			
SS02		S		1305		1	X	X	X			
SS03		S		1317		1	X	X	X			
SS04		S		1322		1	X	X	X			
SS05		S		1325		1	X	X	X			
SS06		S		1328		1	X	X	X			
SS07		S		1332		1	X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	7/20/20 16:28			

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 07.20.2020 04.28.00 PM

Work Order #: 667695

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	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: 07.20.2020

Checklist reviewed by:



Jessica Kramer

Date: 07.21.2020



Certificate of Analysis Summary 675657

LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Wed 10.21.2020 08:50

Report Date: 10.22.2020 16:17

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	675657-001	675657-002	675657-003	675657-004	675657-005	675657-006
	<i>Field Id:</i>	FS01	FS02	FS03	FS04	SW01	SW02
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	0-4 ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	10.20.2020 11:56	10.20.2020 11:57	10.20.2020 11:58	10.20.2020 11:59	10.20.2020 12:02	10.20.2020 12:02
BTEX by EPA 8021B	<i>Extracted:</i>	10.21.2020 10:04	10.21.2020 10:04	10.21.2020 10:04	10.21.2020 10:04	10.21.2020 10:04	10.21.2020 10:04
	<i>Analyzed:</i>	10.21.2020 17:24	10.21.2020 16:17	10.21.2020 16:40	10.21.2020 17:02	10.21.2020 18:44	10.21.2020 19:07
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00402 0.00402	<0.00399 0.00399	<0.00400 0.00400	<0.00404 0.00404	<0.00404 0.00404	<0.00401 0.00401
o-Xylene		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
Total BTEX		<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	10.21.2020 13:09	10.21.2020 13:09	10.21.2020 13:09	10.21.2020 13:09	10.21.2020 13:09	10.21.2020 13:09
	<i>Analyzed:</i>	10.21.2020 14:10	10.21.2020 14:28	10.21.2020 14:35	10.21.2020 14:41	10.21.2020 14:47	10.21.2020 14:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		4260 49.9	3480 49.8	3090 50.0	2890 49.6	45.0 9.92	59.9 9.94
TPH by SW8015 Mod	<i>Extracted:</i>	10.21.2020 11:00	10.21.2020 11:00	10.21.2020 11:00	10.21.2020 11:00	10.21.2020 11:00	10.21.2020 11:00
	<i>Analyzed:</i>	10.21.2020 17:03	10.21.2020 17:23	10.21.2020 17:44	10.21.2020 18:04	10.21.2020 18:25	10.21.2020 18:45
	<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	<49.8 49.8	<50.0 50.0	<49.8 49.8	<49.8 49.8
Diesel Range Organics (DRO)		<50.0 50.0	<50.1 50.1	<49.8 49.8	<50.0 50.0	<49.8 49.8	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.1 50.1	<49.8 49.8	<50.0 50.0	<49.8 49.8	<49.8 49.8
Total GRO-DRO		<50.0 50.0	<50.1 50.1	<49.8 49.8	<50.0 50.0	<49.8 49.8	<49.8 49.8
Total TPH		<50.0 50.0	<50.1 50.1	<49.8 49.8	<50.0 50.0	<49.8 49.8	<49.8 49.8

BRL - Below Reporting Limit

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

Jessica Kramer

Certificate of Analysis Summary 675657

LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Wed 10.21.2020 08:50

Report Date: 10.22.2020 16:17

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	675657-007	675657-008				
	Field Id:	SW03	SW04				
	Depth:	0-4 ft	0-4 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	10.20.2020 12:02	10.20.2020 12:02				
BTEX by EPA 8021B	Extracted:	10.21.2020 10:04	10.21.2020 10:04				
	Analyzed:	10.21.2020 19:29	10.21.2020 19:52				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00201 0.00201	<0.00200 0.00200				
	Toluene	<0.00201 0.00201	<0.00200 0.00200				
	Ethylbenzene	<0.00201 0.00201	<0.00200 0.00200				
	m,p-Xylenes	<0.00402 0.00402	<0.00401 0.00401				
	o-Xylene	<0.00201 0.00201	<0.00200 0.00200				
	Total Xylenes	<0.00201 0.00201	<0.00200 0.00200				
	Total BTEX	<0.00201 0.00201	<0.00200 0.00200				
Chloride by EPA 300	Extracted:	10.21.2020 13:09	10.21.2020 13:09				
	Analyzed:	10.21.2020 14:59	10.21.2020 15:05				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	24.0 9.92	161 9.98				
TPH by SW8015 Mod	Extracted:	10.21.2020 11:00	10.21.2020 11:00				
	Analyzed:	10.21.2020 19:05	10.21.2020 19:25				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<50.0 50.0	<49.8 49.8				
	Diesel Range Organics (DRO)	<50.0 50.0	<49.8 49.8				
	Motor Oil Range Hydrocarbons (MRO)	<50.0 50.0	<49.8 49.8				
	Total GRO-DRO	<50.0 50.0	<49.8 49.8				
	Total TPH	<50.0 50.0	<49.8 49.8				

BRL - Below Reporting Limit

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





Analytical Report 675657

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

10.22.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



10.22.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **675657**

Muy Wayno Frac Pond

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 Eurofins Xenco, LLC Report Number(s) 675657. 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. 675657 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,

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 675657****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	10.20.2020 11:56	4 ft	675657-001
FS02	S	10.20.2020 11:57	4 ft	675657-002
FS03	S	10.20.2020 11:58	4 ft	675657-003
FS04	S	10.20.2020 11:59	4 ft	675657-004
SW01	S	10.20.2020 12:02	0 - 4 ft	675657-005
SW02	S	10.20.2020 12:02	0 - 4 ft	675657-006
SW03	S	10.20.2020 12:02	0 - 4 ft	675657-007
SW04	S	10.20.2020 12:02	0 - 4 ft	675657-008



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 675657

Report Date: 10.22.2020
Date Received: 10.21.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3140333 TPH by SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 675657-004.

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 675657-006.



Certificate of Analytical Results 675657

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS01**
Lab Sample Id: 675657-001

Matrix: Soil
Date Collected: 10.20.2020 11:56

Date Received: 10.21.2020 08:50
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 10.21.2020 13:09

% Moisture:
Basis: Wet Weight

Seq Number: 3140330

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4260	49.9	mg/kg	10.21.2020 14:10		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

Analyst: DTH

Date Prep: 10.21.2020 11:00

% Moisture:
Basis: Wet Weight

Seq Number: 3140333

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.21.2020 17:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.21.2020 17:03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.21.2020 17:03	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.21.2020 17:03	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.21.2020 17:03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	10.21.2020 17:03	
o-Terphenyl	84-15-1	135	%	70-135	10.21.2020 17:03	



Certificate of Analytical Results 675657

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS01**
Lab Sample Id: 675657-001

Matrix: Soil
Date Collected: 10.20.2020 11:56

Date Received: 10.21.2020 08:50
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.21.2020 10:04

% Moisture:
Basis: Wet Weight

Seq Number: 3140325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.21.2020 17:24	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.21.2020 17:24	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.21.2020 17:24	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.21.2020 17:24	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.21.2020 17:24	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.21.2020 17:24	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.21.2020 17:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113	%	70-130	10.21.2020 17:24	
4-Bromofluorobenzene	460-00-4	102	%	70-130	10.21.2020 17:24	



Certificate of Analytical Results 675657

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS02**
Lab Sample Id: 675657-002

Matrix: Soil
Date Collected: 10.20.2020 11:57

Date Received: 10.21.2020 08:50
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 10.21.2020 13:09

% Moisture:
Basis: Wet Weight

Seq Number: 3140330

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3480	49.8	mg/kg	10.21.2020 14:28		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

Analyst: DTH

Date Prep: 10.21.2020 11:00

% Moisture:
Basis: Wet Weight

Seq Number: 3140333

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.21.2020 17:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.21.2020 17:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.21.2020 17:23	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.21.2020 17:23	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.21.2020 17:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	10.21.2020 17:23	
o-Terphenyl	84-15-1	129	%	70-135	10.21.2020 17:23	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS02**
Lab Sample Id: 675657-002

Matrix: Soil
Date Collected: 10.20.2020 11:57

Date Received: 10.21.2020 08:50
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.21.2020 10:04

% Moisture:
Basis: Wet Weight

Seq Number: 3140325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.21.2020 16:17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.21.2020 16:17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.21.2020 16:17	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.21.2020 16:17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.21.2020 16:17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.21.2020 16:17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.21.2020 16:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	10.21.2020 16:17	
4-Bromofluorobenzene	460-00-4	116	%	70-130	10.21.2020 16:17	



Certificate of Analytical Results 675657

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS03** Matrix: Soil Date Received: 10.21.2020 08:50
 Lab Sample Id: 675657-003 Date Collected: 10.20.2020 11:58 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.21.2020 13:09 % Moisture:
 Seq Number: 3140330 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3090	50.0	mg/kg	10.21.2020 14:35		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 10.21.2020 11:00 % Moisture:
 Seq Number: 3140333 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.21.2020 17:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.21.2020 17:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.21.2020 17:44	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.21.2020 17:44	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.21.2020 17:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	10.21.2020 17:44	
o-Terphenyl	84-15-1	126	%	70-135	10.21.2020 17:44	



Certificate of Analytical Results 675657

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS03**
Lab Sample Id: 675657-003

Matrix: Soil
Date Collected: 10.20.2020 11:58

Date Received: 10.21.2020 08:50
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.21.2020 10:04

% Moisture:
Basis: Wet Weight

Seq Number: 3140325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.21.2020 16:40	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.21.2020 16:40	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.21.2020 16:40	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	10.21.2020 16:40	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.21.2020 16:40	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.21.2020 16:40	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.21.2020 16:40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	10.21.2020 16:40		
4-Bromofluorobenzene	460-00-4	106	%	70-130	10.21.2020 16:40		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS04** Matrix: Soil Date Received: 10.21.2020 08:50
 Lab Sample Id: 675657-004 Date Collected: 10.20.2020 11:59 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.21.2020 13:09 % Moisture:
 Seq Number: 3140330 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2890	49.6	mg/kg	10.21.2020 14:41		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 10.21.2020 11:00 % Moisture:
 Seq Number: 3140333 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.21.2020 18:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.21.2020 18:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.21.2020 18:04	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.21.2020 18:04	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.21.2020 18:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	138	%	70-135	10.21.2020 18:04	**
o-Terphenyl	84-15-1	131	%	70-135	10.21.2020 18:04	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS04**
Lab Sample Id: 675657-004

Matrix: Soil
Date Collected: 10.20.2020 11:59

Date Received: 10.21.2020 08:50
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.21.2020 10:04

% Moisture:
Basis: Wet Weight

Seq Number: 3140325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.21.2020 17:02	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.21.2020 17:02	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.21.2020 17:02	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.21.2020 17:02	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.21.2020 17:02	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.21.2020 17:02	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.21.2020 17:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.21.2020 17:02		
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.21.2020 17:02		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW01** Matrix: Soil Date Received: 10.21.2020 08:50
 Lab Sample Id: 675657-005 Date Collected: 10.20.2020 12:02 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.21.2020 13:09 % Moisture:
 Seq Number: 3140330 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.0	9.92	mg/kg	10.21.2020 14:47		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 10.21.2020 11:00 % Moisture:
 Seq Number: 3140333 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.21.2020 18:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.21.2020 18:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.21.2020 18:25	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.21.2020 18:25	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.21.2020 18:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	10.21.2020 18:25	
o-Terphenyl	84-15-1	124	%	70-135	10.21.2020 18:25	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW01**
Lab Sample Id: 675657-005

Matrix: Soil
Date Collected: 10.20.2020 12:02

Date Received: 10.21.2020 08:50
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.21.2020 10:04

% Moisture:
Basis: Wet Weight

Seq Number: 3140325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.21.2020 18:44	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.21.2020 18:44	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.21.2020 18:44	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.21.2020 18:44	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.21.2020 18:44	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.21.2020 18:44	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.21.2020 18:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	10.21.2020 18:44		
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.21.2020 18:44		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW02** Matrix: Soil Date Received: 10.21.2020 08:50
 Lab Sample Id: 675657-006 Date Collected: 10.20.2020 12:02 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.21.2020 13:09 % Moisture:
 Seq Number: 3140330 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	59.9	9.94	mg/kg	10.21.2020 14:53		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 10.21.2020 11:00 % Moisture:
 Seq Number: 3140333 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.21.2020 18:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.21.2020 18:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.21.2020 18:45	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.21.2020 18:45	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.21.2020 18:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	10.21.2020 18:45	
o-Terphenyl	84-15-1	137	%	70-135	10.21.2020 18:45	**



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW02**
Lab Sample Id: 675657-006

Matrix: Soil
Date Collected: 10.20.2020 12:02

Date Received: 10.21.2020 08:50
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.21.2020 10:04

% Moisture:
Basis: Wet Weight

Seq Number: 3140325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.21.2020 19:07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.21.2020 19:07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.21.2020 19:07	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.21.2020 19:07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.21.2020 19:07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.21.2020 19:07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.21.2020 19:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	10.21.2020 19:07		
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.21.2020 19:07		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW03**
 Lab Sample Id: 675657-007

Matrix: Soil
 Date Collected: 10.20.2020 12:02

Date Received: 10.21.2020 08:50
 Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 10.21.2020 13:09

% Moisture:
 Basis: Wet Weight

Seq Number: 3140330

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.0	9.92	mg/kg	10.21.2020 14:59		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DTH

Analyst: DTH

Date Prep: 10.21.2020 11:00

% Moisture:
 Basis: Wet Weight

Seq Number: 3140333

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.21.2020 19:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.21.2020 19:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.21.2020 19:05	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.21.2020 19:05	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.21.2020 19:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	10.21.2020 19:05	
o-Terphenyl	84-15-1	133	%	70-135	10.21.2020 19:05	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW03**
Lab Sample Id: 675657-007

Matrix: Soil
Date Collected: 10.20.2020 12:02

Date Received: 10.21.2020 08:50
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.21.2020 10:04

% Moisture:
Basis: Wet Weight

Seq Number: 3140325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.21.2020 19:29	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.21.2020 19:29	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.21.2020 19:29	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.21.2020 19:29	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.21.2020 19:29	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.21.2020 19:29	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.21.2020 19:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.21.2020 19:29		
4-Bromofluorobenzene	460-00-4	113	%	70-130	10.21.2020 19:29		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW04** Matrix: Soil Date Received: 10.21.2020 08:50
 Lab Sample Id: 675657-008 Date Collected: 10.20.2020 12:02 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.21.2020 13:09 % Moisture:
 Seq Number: 3140330 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	161	9.98	mg/kg	10.21.2020 15:05		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH
 Analyst: DTH Date Prep: 10.21.2020 11:00 % Moisture:
 Seq Number: 3140333 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.21.2020 19:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.21.2020 19:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.21.2020 19:25	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.21.2020 19:25	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.21.2020 19:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	10.21.2020 19:25	
o-Terphenyl	84-15-1	135	%	70-135	10.21.2020 19:25	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW04**
Lab Sample Id: 675657-008

Matrix: Soil
Date Collected: 10.20.2020 12:02

Date Received: 10.21.2020 08:50
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.21.2020 10:04

% Moisture:
Basis: Wet Weight

Seq Number: 3140325

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.21.2020 19:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.21.2020 19:52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.21.2020 19:52	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.21.2020 19:52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.21.2020 19:52	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.21.2020 19:52	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.21.2020 19:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	91	%	70-130	10.21.2020 19:52	
4-Bromofluorobenzene	460-00-4	123	%	70-130	10.21.2020 19:52	



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.

Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3140330

MB Sample Id: 7713656-1-BLK

Matrix: Solid

LCS Sample Id: 7713656-1-BKS

Prep Method: E300P

Date Prep: 10.21.2020

LCSD Sample Id: 7713656-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	252	101	250	100	90-110	1	20	mg/kg	10.21.2020 12:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3140330

Parent Sample Id: 675638-001

Matrix: Soil

MS Sample Id: 675638-001 S

Prep Method: E300P

Date Prep: 10.21.2020

MSD Sample Id: 675638-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	677	200	862	93	869	96	90-110	1	20	mg/kg	10.21.2020 12:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3140330

Parent Sample Id: 675638-009

Matrix: Soil

MS Sample Id: 675638-009 S

Prep Method: E300P

Date Prep: 10.21.2020

MSD Sample Id: 675638-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	117	202	307	94	296	90	90-110	4	20	mg/kg	10.21.2020 13:39	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140333

MB Sample Id: 7713647-1-BLK

Matrix: Solid

LCS Sample Id: 7713647-1-BKS

Prep Method: SW8015P

Date Prep: 10.21.2020

LCSD Sample Id: 7713647-1-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	1110	111	1110	111	70-135	0	35	mg/kg	10.21.2020 11:16	
Diesel Range Organics (DRO)	<50.0	1000	1120	112	1120	112	70-135	0	35	mg/kg	10.21.2020 11:16	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		129		129		70-135	%	10.21.2020 11:16
o-Terphenyl	105		103		102		70-135	%	10.21.2020 11:16

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140333

Matrix: Solid

MB Sample Id: 7713647-1-BLK

Prep Method: SW8015P

Date Prep: 10.21.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.21.2020 10:55	

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

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

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

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



LT Environmental, Inc.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140333

Parent Sample Id: 675674-011

Matrix: Soil

MS Sample Id: 675674-011 S

Prep Method: SW8015P

Date Prep: 10.21.2020

MSD Sample Id: 675674-011 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	1100	110	1060	107	70-135	4	35	mg/kg	10.21.2020 12:37	
Diesel Range Organics (DRO)	<50.1	1000	1120	112	1060	107	70-135	6	35	mg/kg	10.21.2020 12:37	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		135		70-135	%	10.21.2020 12:37
o-Terphenyl	116		108		70-135	%	10.21.2020 12:37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3140325

MB Sample Id: 7713653-1-BLK

Matrix: Solid

LCS Sample Id: 7713653-1-BKS

Prep Method: SW5035A

Date Prep: 10.21.2020

LCSD Sample Id: 7713653-1-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	0.101	101	70-130	2	35	mg/kg	10.21.2020 11:35	
Toluene	<0.00200	0.100	0.0945	95	0.0935	94	70-130	1	35	mg/kg	10.21.2020 11:35	
Ethylbenzene	<0.00200	0.100	0.0990	99	0.0998	100	71-129	1	35	mg/kg	10.21.2020 11:35	
m,p-Xylenes	<0.00400	0.200	0.203	102	0.203	102	70-135	0	35	mg/kg	10.21.2020 11:35	
o-Xylene	<0.00200	0.100	0.0995	100	0.100	100	71-133	1	35	mg/kg	10.21.2020 11:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		99		101		70-130	%	10.21.2020 11:35
4-Bromofluorobenzene	114		105		109		70-130	%	10.21.2020 11:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3140325

Parent Sample Id: 675638-004

Matrix: Soil

MS Sample Id: 675638-004 S

Prep Method: SW5035A

Date Prep: 10.21.2020

MSD Sample Id: 675638-004 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	0.107	107	0.0979	98	70-130	9	35	mg/kg	10.21.2020 12:20	
Toluene	<0.00199	0.0996	0.0985	99	0.0885	89	70-130	11	35	mg/kg	10.21.2020 12:20	
Ethylbenzene	<0.00199	0.0996	0.0889	89	0.0744	75	71-129	18	35	mg/kg	10.21.2020 12:20	
m,p-Xylenes	<0.00398	0.199	0.201	101	0.170	85	70-135	17	35	mg/kg	10.21.2020 12:20	
o-Xylene	0.0158	0.0996	0.116	101	0.103	87	71-133	12	35	mg/kg	10.21.2020 12:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		70-130	%	10.21.2020 12:20
4-Bromofluorobenzene	105		109		70-130	%	10.21.2020 12:20

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



Chain of Custody

Work Order No: 1675657

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 Littlell
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@xenv.com, dmoir@xenv.com

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

Project Name:	Muy Wayno Frac Pond	Turn Around	
Project Number:	012920104	Routine	
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT	Temp Blank:	☒ Yes	☐ No	Wet Ice:	☒ Yes	☐ No
Temperature (°C):	1.2/1.0	Thermometer ID				
Received In tact:	☒ Yes	☐ No	Correction Factor: +110007 -0.2			
Cooler Custody Seals:	☒ Yes	☐ No	Total Containers: 8			
Sample Custody Seals:	☒ Yes	☐ No				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST										Work Order Notes
FS01	S	10/20/2020	11:56	4'	1	X	X	X											Composite
FS02	S	10/20/2020	11:57	4'	1	X	X	X											Composite
FS03	S	10/20/2020	11:58	4'	1	X	X	X											Composite
FS04	S	10/20/2020	11:59	4'	1	X	X	X											Composite
SW01	S	10/20/2020	12:02	0.4'	1	X	X	X											Composite
SW02	S	10/20/2020	12:05	0.4'	1	X	X	X											Composite
SW03	S	10/20/2020	12:06	0.4'	1	X	X	X											Composite
SW04	S	10/20/2020	12:08	0.4'	1	X	X	X											Composite

Total 200.7 / 6010 200.8 / 6020:

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
		10/21/20 08:55			10/21/20 08:55

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10.21.2020 08.50.00 AM

Work Order #: 675657

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T_NM_007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#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:



Cloe Clifton

Date: 10.21.2020

Checklist reviewed by:



Jessica Kramer

Date: 10.22.2020

Certificate of Analysis Summary 675922



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 10.22.2020 15:30
Report Date: 10.26.2020 16:20
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	675922-001	675922-002	675922-003	675922-004	675922-005	675922-006
	<i>Field Id:</i>	FS05	FS06	FS07	FS08	FS09	SW05
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	4- ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	10.21.2020 10:11	10.21.2020 10:12	10.21.2020 10:14	10.21.2020 10:16	10.21.2020 10:17	10.21.2020 14:49
BTEX by EPA 8021B	<i>Extracted:</i>	10.23.2020 14:39	10.23.2020 14:39	10.23.2020 14:39	10.23.2020 14:39	10.23.2020 14:39	10.23.2020 14:39
	<i>Analyzed:</i>	10.24.2020 08:40	10.24.2020 09:03	10.24.2020 10:23	10.24.2020 10:45	10.24.2020 11:07	10.24.2020 11:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198
Toluene		<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198
Ethylbenzene		<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198
m,p-Xylenes		<0.00402 0.00402	<0.00398 0.00398	<0.00404 0.00404	<0.00403 0.00403	<0.00397 0.00397	<0.00397 0.00397
o-Xylene		<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198
Total Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198
Total BTEX		<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202	<0.00202 0.00202	<0.00198 0.00198	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	10.23.2020 14:30	10.23.2020 14:30	10.23.2020 14:30	10.23.2020 14:30	10.23.2020 14:30	10.23.2020 14:30
	<i>Analyzed:</i>	10.23.2020 16:26	10.23.2020 16:43	10.23.2020 16:48	10.23.2020 16:54	10.23.2020 16:59	10.23.2020 17:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		4980 49.5	4060 50.5	5910 49.8	4030 50.3	3860 49.5	65.3 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	10.23.2020 17:49	10.23.2020 17:49	10.23.2020 17:49	10.23.2020 17:49	10.23.2020 17:49	10.23.2020 17:49
	<i>Analyzed:</i>	10.23.2020 23:05	10.23.2020 23:25	10.23.2020 23:45	10.24.2020 00:05	10.24.2020 00:26	10.24.2020 00:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.8 49.8	<50.2 50.2	<49.9 49.9	<50.1 50.1	<50.1 50.1
Diesel Range Organics (DRO)		<50.0 50.0	<49.8 49.8	<50.2 50.2	<49.9 49.9	<50.1 50.1	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.8 49.8	<50.2 50.2	<49.9 49.9	<50.1 50.1	<50.1 50.1
Total GRO-DRO		<50.0 50.0	<49.8 49.8	<50.2 50.2	<49.9 49.9	<50.1 50.1	<50.1 50.1
Total TPH		<50.0 50.0	<49.8 49.8	<50.2 50.2	<49.9 49.9	<50.1 50.1	<50.1 50.1

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 675922



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 10.22.2020 15:30
Report Date: 10.26.2020 16:20
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	675922-007	675922-008	675922-009			
	Field Id:	SW06	SW07	SW08			
	Depth:	0-4 ft	0-4 ft	0-4 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	10.21.2020 10:24	10.21.2020 10:26	10.21.2020 10:28			
BTEX by EPA 8021B	Extracted:	10.23.2020 14:39	10.23.2020 14:39	10.23.2020 14:39			
	Analyzed:	10.24.2020 11:52	10.24.2020 12:15	10.24.2020 12:37			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199			
Benzene							
Toluene							
Ethylbenzene							
m,p-Xylenes							
o-Xylene							
Total Xylenes							
Total BTEX							
Chloride by EPA 300	Extracted:	10.23.2020 14:30	10.23.2020 14:30	10.23.2020 14:30			
	Analyzed:	10.23.2020 17:22	10.23.2020 17:27	10.23.2020 17:33			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		170 9.90	29.3 9.92	16.1 10.0			
Chloride							
TPH by SW8015 Mod	Extracted:	10.23.2020 17:49	10.23.2020 17:49	10.23.2020 17:49			
	Analyzed:	10.24.2020 01:06	10.24.2020 01:47	10.24.2020 02:07			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		<50.1 50.1	<49.9 49.9	<49.8 49.8			
Gasoline Range Hydrocarbons (GRO)							
Diesel Range Organics (DRO)							
Motor Oil Range Hydrocarbons (MRO)							
Total GRO-DRO							
Total TPH							

BRL - Below Reporting Limit

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



Analytical Report 675922

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

10.26.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



10.26.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **675922**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 675922. 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. 675922 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 675922****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS05	S	10.21.2020 10:11	4 ft	675922-001
FS06	S	10.21.2020 10:12	4 ft	675922-002
FS07	S	10.21.2020 10:14	4 ft	675922-003
FS08	S	10.21.2020 10:16	4 ft	675922-004
FS09	S	10.21.2020 10:17	4 ft	675922-005
SW05	S	10.21.2020 14:49	0 - 4 ft	675922-006
SW06	S	10.21.2020 10:24	0 - 4 ft	675922-007
SW07	S	10.21.2020 10:26	0 - 4 ft	675922-008
SW08	S	10.21.2020 10:28	0 - 4 ft	675922-009



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 675922

Report Date: 10.26.2020
Date Received: 10.22.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS05** Matrix: Soil Date Received: 10.22.2020 15:30
 Lab Sample Id: 675922-001 Date Collected: 10.21.2020 10:11 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4980	49.5	mg/kg	10.23.2020 16:26		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:49 % Moisture:
 Seq Number: 3140587 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.23.2020 23:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.23.2020 23:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.23.2020 23:05	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.23.2020 23:05	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.23.2020 23:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	10.23.2020 23:05	
o-Terphenyl	84-15-1	117	%	70-135	10.23.2020 23:05	



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS05**
Lab Sample Id: 675922-001

Matrix: Soil
Date Collected: 10.21.2020 10:11

Date Received: 10.22.2020 15:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 14:39

% Moisture:
Basis: Wet Weight

Seq Number: 3140545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.24.2020 08:40	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.24.2020 08:40	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.24.2020 08:40	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.24.2020 08:40	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.24.2020 08:40	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.24.2020 08:40	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.24.2020 08:40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.24.2020 08:40		
4-Bromofluorobenzene	460-00-4	117	%	70-130	10.24.2020 08:40		



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS06** Matrix: Soil Date Received: 10.22.2020 15:30
 Lab Sample Id: 675922-002 Date Collected: 10.21.2020 10:12 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4060	50.5	mg/kg	10.23.2020 16:43		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:49 % Moisture:
 Seq Number: 3140587 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.23.2020 23:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.23.2020 23:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.23.2020 23:25	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.23.2020 23:25	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.23.2020 23:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	10.23.2020 23:25	
o-Terphenyl	84-15-1	109	%	70-135	10.23.2020 23:25	



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS06**
Lab Sample Id: 675922-002

Matrix: Soil
Date Collected: 10.21.2020 10:12

Date Received: 10.22.2020 15:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 14:39

% Moisture:
Basis: Wet Weight

Seq Number: 3140545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.24.2020 09:03	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.24.2020 09:03	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.24.2020 09:03	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.24.2020 09:03	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.24.2020 09:03	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.24.2020 09:03	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.24.2020 09:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	10.24.2020 09:03		
1,4-Difluorobenzene	540-36-3	107	%	70-130	10.24.2020 09:03		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS07** Matrix: Soil Date Received: 10.22.2020 15:30
 Lab Sample Id: 675922-003 Date Collected: 10.21.2020 10:14 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5910	49.8	mg/kg	10.23.2020 16:48		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:49 % Moisture:
 Seq Number: 3140587 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.23.2020 23:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.23.2020 23:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.23.2020 23:45	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.23.2020 23:45	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.23.2020 23:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	10.23.2020 23:45	
o-Terphenyl	84-15-1	110	%	70-135	10.23.2020 23:45	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS07**
Lab Sample Id: 675922-003

Matrix: Soil
Date Collected: 10.21.2020 10:14

Date Received: 10.22.2020 15:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 14:39

% Moisture:
Basis: Wet Weight

Seq Number: 3140545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.24.2020 10:23	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.24.2020 10:23	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.24.2020 10:23	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.24.2020 10:23	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.24.2020 10:23	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.24.2020 10:23	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.24.2020 10:23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.24.2020 10:23		
4-Bromofluorobenzene	460-00-4	118	%	70-130	10.24.2020 10:23		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS08** Matrix: Soil Date Received: 10.22.2020 15:30
 Lab Sample Id: 675922-004 Date Collected: 10.21.2020 10:16 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4030	50.3	mg/kg	10.23.2020 16:54		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:49 % Moisture:
 Seq Number: 3140587 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.24.2020 00:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.24.2020 00:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.24.2020 00:05	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.24.2020 00:05	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.24.2020 00:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	10.24.2020 00:05	
o-Terphenyl	84-15-1	114	%	70-135	10.24.2020 00:05	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS08**
Lab Sample Id: 675922-004

Matrix: Soil
Date Collected: 10.21.2020 10:16

Date Received: 10.22.2020 15:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 14:39

% Moisture:
Basis: Wet Weight

Seq Number: 3140545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.24.2020 10:45	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.24.2020 10:45	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.24.2020 10:45	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.24.2020 10:45	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.24.2020 10:45	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.24.2020 10:45	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.24.2020 10:45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	10.24.2020 10:45		
1,4-Difluorobenzene	540-36-3	110	%	70-130	10.24.2020 10:45		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS09** Matrix: Soil Date Received: 10.22.2020 15:30
 Lab Sample Id: 675922-005 Date Collected: 10.21.2020 10:17 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3860	49.5	mg/kg	10.23.2020 16:59		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:49 % Moisture:
 Seq Number: 3140587 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.24.2020 00:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.24.2020 00:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.24.2020 00:26	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.24.2020 00:26	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.24.2020 00:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	10.24.2020 00:26	
o-Terphenyl	84-15-1	111	%	70-135	10.24.2020 00:26	



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS09**
 Lab Sample Id: 675922-005

Matrix: Soil
 Date Collected: 10.21.2020 10:17

Date Received: 10.22.2020 15:30
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 14:39

% Moisture:
 Basis: Wet Weight

Seq Number: 3140545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.24.2020 11:07	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.24.2020 11:07	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.24.2020 11:07	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.24.2020 11:07	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.24.2020 11:07	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.24.2020 11:07	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.24.2020 11:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	10.24.2020 11:07		
4-Bromofluorobenzene	460-00-4	117	%	70-130	10.24.2020 11:07		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW05** Matrix: Soil Date Received: 10.22.2020 15:30
 Lab Sample Id: 675922-006 Date Collected: 10.21.2020 14:49 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	65.3	10.1	mg/kg	10.23.2020 17:16		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:49 % Moisture:
 Seq Number: 3140587 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.24.2020 00:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.24.2020 00:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.24.2020 00:46	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.24.2020 00:46	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.24.2020 00:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	10.24.2020 00:46	
o-Terphenyl	84-15-1	107	%	70-135	10.24.2020 00:46	



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW05**
Lab Sample Id: 675922-006

Matrix: Soil
Date Collected: 10.21.2020 14:49

Date Received: 10.22.2020 15:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 14:39

% Moisture:
Basis: Wet Weight

Seq Number: 3140545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.24.2020 11:30	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.24.2020 11:30	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.24.2020 11:30	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.24.2020 11:30	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.24.2020 11:30	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.24.2020 11:30	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.24.2020 11:30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	10.24.2020 11:30		
4-Bromofluorobenzene	460-00-4	115	%	70-130	10.24.2020 11:30		



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW06** Matrix: Soil Date Received: 10.22.2020 15:30
 Lab Sample Id: 675922-007 Date Collected: 10.21.2020 10:24 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	170	9.90	mg/kg	10.23.2020 17:22		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:49 % Moisture:
 Seq Number: 3140587 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.24.2020 01:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.24.2020 01:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.24.2020 01:06	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.24.2020 01:06	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.24.2020 01:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	10.24.2020 01:06	
o-Terphenyl	84-15-1	113	%	70-135	10.24.2020 01:06	



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW06**
Lab Sample Id: 675922-007

Matrix: Soil
Date Collected: 10.21.2020 10:24

Date Received: 10.22.2020 15:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 14:39

% Moisture:
Basis: Wet Weight

Seq Number: 3140545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.24.2020 11:52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.24.2020 11:52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.24.2020 11:52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.24.2020 11:52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.24.2020 11:52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.24.2020 11:52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.24.2020 11:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	10.24.2020 11:52	
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.24.2020 11:52	



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW07** Matrix: Soil Date Received: 10.22.2020 15:30
 Lab Sample Id: 675922-008 Date Collected: 10.21.2020 10:26 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.3	9.92	mg/kg	10.23.2020 17:27		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:49 % Moisture:
 Seq Number: 3140587 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.24.2020 01:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.24.2020 01:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.24.2020 01:47	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.24.2020 01:47	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.24.2020 01:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	10.24.2020 01:47	
o-Terphenyl	84-15-1	99	%	70-135	10.24.2020 01:47	



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW07**
Lab Sample Id: 675922-008

Matrix: Soil
Date Collected: 10.21.2020 10:26

Date Received: 10.22.2020 15:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 14:39

% Moisture:
Basis: Wet Weight

Seq Number: 3140545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.24.2020 12:15	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.24.2020 12:15	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.24.2020 12:15	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.24.2020 12:15	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.24.2020 12:15	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.24.2020 12:15	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.24.2020 12:15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	10.24.2020 12:15		
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.24.2020 12:15		



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW08** Matrix: Soil Date Received: 10.22.2020 15:30
 Lab Sample Id: 675922-009 Date Collected: 10.21.2020 10:28 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16.1	10.0	mg/kg	10.23.2020 17:33		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:49 % Moisture:
 Seq Number: 3140587 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.24.2020 02:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.24.2020 02:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.24.2020 02:07	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.24.2020 02:07	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.24.2020 02:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	10.24.2020 02:07	
o-Terphenyl	84-15-1	112	%	70-135	10.24.2020 02:07	



Certificate of Analytical Results 675922

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW08**
Lab Sample Id: 675922-009

Matrix: Soil
Date Collected: 10.21.2020 10:28

Date Received: 10.22.2020 15:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 14:39

% Moisture:
Basis: Wet Weight

Seq Number: 3140545

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.24.2020 12:37	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.24.2020 12:37	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.24.2020 12:37	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.24.2020 12:37	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.24.2020 12:37	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.24.2020 12:37	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.24.2020 12:37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.24.2020 12:37		
4-Bromofluorobenzene	460-00-4	117	%	70-130	10.24.2020 12:37		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3140531

MB Sample Id: 7713822-1-BLK

Matrix: Solid

LCS Sample Id: 7713822-1-BKS

Prep Method: E300P

Date Prep: 10.23.2020

LCSD Sample Id: 7713822-1-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	254	102	251	100	90-110	1	20	mg/kg	10.23.2020 16:15	

Analytical Method: Chloride by EPA 300

Seq Number: 3140531

Parent Sample Id: 675922-001

Matrix: Soil

MS Sample Id: 675922-001 S

Prep Method: E300P

Date Prep: 10.23.2020

MSD Sample Id: 675922-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4980	203	5170	94	5170	94	90-110	0	20	mg/kg	10.23.2020 16:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3140531

Parent Sample Id: 675970-002

Matrix: Soil

MS Sample Id: 675970-002 S

Prep Method: E300P

Date Prep: 10.23.2020

MSD Sample Id: 675970-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.0	200	207	99	202	96	90-110	2	20	mg/kg	10.23.2020 17:50	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140587

MB Sample Id: 7713839-1-BLK

Matrix: Solid

LCS Sample Id: 7713839-1-BKS

Prep Method: SW8015P

Date Prep: 10.23.2020

LCSD Sample Id: 7713839-1-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	929	93	971	97	70-135	4	35	mg/kg	10.23.2020 20:44	
Diesel Range Organics (DRO)	<50.0	1000	988	99	949	95	70-135	4	35	mg/kg	10.23.2020 20:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		95		80		70-135	%	10.23.2020 20:44
o-Terphenyl	91		85		72		70-135	%	10.23.2020 20:44

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140587

Matrix: Solid

MB Sample Id: 7713839-1-BLK

Prep Method: SW8015P

Date Prep: 10.23.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.23.2020 20:23	

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.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140587

Parent Sample Id: 675920-005

Matrix: Soil

MS Sample Id: 675920-005 S

Prep Method: SW8015P

Date Prep: 10.23.2020

MSD Sample Id: 675920-005 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	1000	99	914	91	70-135	9	35	mg/kg	10.23.2020 21:44	
Diesel Range Organics (DRO)	<50.3	1010	1090	108	951	95	70-135	14	35	mg/kg	10.23.2020 21:44	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		129		70-135	%	10.23.2020 21:44
o-Terphenyl	118		116		70-135	%	10.23.2020 21:44

Analytical Method: BTEX by EPA 8021B

Seq Number: 3140545

MB Sample Id: 7713817-1-BLK

Matrix: Solid

LCS Sample Id: 7713817-1-BKS

Prep Method: SW5035A

Date Prep: 10.23.2020

LCSD Sample Id: 7713817-1-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	0.0993	99	0.0980	98	70-130	1	35	mg/kg	10.24.2020 03:37	
Toluene	<0.00200	0.100	0.0951	95	0.0962	96	70-130	1	35	mg/kg	10.24.2020 03:37	
Ethylbenzene	<0.00200	0.100	0.0966	97	0.0962	96	71-129	0	35	mg/kg	10.24.2020 03:37	
m,p-Xylenes	<0.00400	0.200	0.197	99	0.194	97	70-135	2	35	mg/kg	10.24.2020 03:37	
o-Xylene	<0.00200	0.100	0.0982	98	0.0965	97	71-133	2	35	mg/kg	10.24.2020 03:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		99		102		70-130	%	10.24.2020 03:37
4-Bromofluorobenzene	117		108		110		70-130	%	10.24.2020 03:37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3140545

Parent Sample Id: 675918-008

Matrix: Soil

MS Sample Id: 675918-008 S

Prep Method: SW5035A

Date Prep: 10.23.2020

MSD Sample Id: 675918-008 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	0.100	0.109	109	0.111	111	70-130	2	35	mg/kg	10.24.2020 04:21	
Toluene	<0.00200	0.100	0.0991	99	0.101	101	70-130	2	35	mg/kg	10.24.2020 04:21	
Ethylbenzene	<0.00200	0.100	0.0886	89	0.0867	87	71-129	2	35	mg/kg	10.24.2020 04:21	
m,p-Xylenes	<0.00400	0.200	0.199	100	0.201	101	70-135	1	35	mg/kg	10.24.2020 04:21	
o-Xylene	<0.00200	0.100	0.101	101	0.101	101	71-133	0	35	mg/kg	10.24.2020 04:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		103		70-130	%	10.24.2020 04:21
4-Bromofluorobenzene	108		108		70-130	%	10.24.2020 04:21

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

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

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

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



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Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296
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Phoenix, NM (575-392-7550)

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Chain of Custody

Work Order No. 1075922

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:	jwmatter@ltenv.com , dmoir@ltenv.com

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

Work Order Notes	

Project Name:		Muy Wayno Frac Pond		Turn Around		ANALYSIS REQUEST												WORK ORDER NOTES									
Project Number:		012920104		Routine																							
P.O. Number:		Eddy		Rush:																							
Sampler's Name:		William Mather		Due Date:																							
SAMPLE RECEIPT				Temp Blank:		☒ Yes ☐ No		Wet Ice:		☒ Yes ☐ No																	
Temperature (°C):		3.6/3.4		Thermometer ID																							
Received Intact:		☒ Yes ☐ No		Correction Factor:																							
Cooler Custody Seals:		☒ Yes ☐ No		Total Containers:																							
Sample Custody Seals:		☒ Yes ☐ No																									
Sample Identification				Matrix		Date Sampled		Time Sampled		Depth		Number of Containers															
FS05				S		10/21/2020		10:11		4'		1												Composite			
FS06				S		10/21/2020		10:12		4'		1												Composite			
FS07				S		10/21/2020		10:14		4'		1												Composite			
FS08				S		10/21/2020		10:16		4'		1												Composite			
FS09				S		10/21/2020		10:17		4'		1												Composite			
SW05				S		10/21/2020		14:49		0.4'		1												Composite			
SW06				S		10/21/2020		10:24		0.4'		1												Composite			
SW07				S		10/21/2020		10:26		0.4'		1												Composite			
SW08				S		10/21/2020		10:28		0.4'		1												Composite			
														TAT starts the day received by the lab, if received by 4:30pm													
														Sample Comments													

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		10/22/2000 @ 1522			10-22-2015 3

Revised Date 05/14/18 Rev. 2018

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10.22.2020 03.30.00 PM

Work Order #: 675922

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)?	3.4
#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

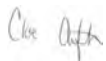
Samples received in bulk containers.

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Cloe Clifton

Date: 10.22.2020

Checklist reviewed by:



Jessica Kramer

Date: 10.23.2020

Certificate of Analysis Summary 675984



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri 10.23.2020 11:30
Report Date: 10.28.2020 11:43
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	675984-001	675984-002	675984-003	675984-004	675984-005	675984-006
	<i>Field Id:</i>	FS10	FS11	FS12	FS13	FS14	SW09
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	4- ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	10.22.2020 10:27	10.22.2020 10:28	10.22.2020 10:30	10.22.2020 10:32	10.22.2020 10:34	10.22.2020 10:41
BTEX by EPA 8021B	<i>Extracted:</i>	10.23.2020 15:26	10.23.2020 15:26	10.23.2020 15:26	10.23.2020 15:26	10.23.2020 15:26	10.23.2020 15:26
	<i>Analyzed:</i>	10.24.2020 05:47	10.24.2020 06:09	10.24.2020 06:31	10.24.2020 06:54	10.24.2020 07:16	10.24.2020 07:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
m,p-Xylenes		<0.00401 0.00401	<0.00397 0.00397	<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398	<0.00403 0.00403
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	10.23.2020 14:30	10.23.2020 14:30	10.23.2020 14:30	10.23.2020 14:30	10.23.2020 14:30	10.23.2020 14:30
	<i>Analyzed:</i>	10.23.2020 18:01	10.23.2020 18:06	10.23.2020 18:23	10.23.2020 18:29	10.23.2020 18:34	10.23.2020 18:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2870 49.6	3720 49.9	2860 49.8	2700 49.9	5230 49.8	591 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	10.23.2020 17:31	10.23.2020 17:31	10.23.2020 17:31	10.23.2020 17:31	10.23.2020 17:31	10.23.2020 17:31
	<i>Analyzed:</i>	10.23.2020 21:24	10.23.2020 22:25	10.23.2020 22:45	10.23.2020 23:05	10.23.2020 23:25	10.23.2020 23:45
	<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	<50.1 50.1	<49.8 49.8	<50.2 50.2	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<50.1 50.1	<50.1 50.1	<49.8 49.8	<50.2 50.2	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.1 50.1	<49.8 49.8	<50.2 50.2	<50.0 50.0	<49.9 49.9
Total GRO-DRO		<50.1 50.1	<50.1 50.1	<49.8 49.8	<50.2 50.2	<50.0 50.0	<49.9 49.9
Total TPH		<50.1 50.1	<50.1 50.1	<49.8 49.8	<50.2 50.2	<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

Certificate of Analysis Summary 675984



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri 10.23.2020 11:30
Report Date: 10.28.2020 11:43
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	675984-007	675984-008	675984-009	675984-010	675984-011	675984-012
	<i>Field Id:</i>	SW10	SW11	SW12	SW13	SW14	SW15
	<i>Depth:</i>	0-4 ft	0-4 ft	0-4 ft	0-4 ft	0-4 ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	10.22.2020 10:43	10.22.2020 10:44	10.22.2020 10:46	10.22.2020 10:48	10.22.2020 10:50	10.22.2020 10:53
BTEX by EPA 8021B	<i>Extracted:</i>	10.23.2020 15:26	10.23.2020 15:26	10.23.2020 15:26	10.23.2020 15:26	10.23.2020 15:26	10.23.2020 15:26
	<i>Analyzed:</i>	10.24.2020 08:01	10.24.2020 08:23	10.24.2020 08:46	10.24.2020 09:08	10.24.2020 10:26	10.24.2020 10:48
	<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	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00402 0.00402	<0.00401 0.00401	<0.00397 0.00397	<0.00397 0.00397
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
Total BTEX		<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	10.23.2020 14:30	10.23.2020 14:30	10.23.2020 14:30	10.26.2020 17:10	10.26.2020 17:10	10.26.2020 17:10
	<i>Analyzed:</i>	10.23.2020 18:45	10.23.2020 18:51	10.23.2020 18:57	10.26.2020 21:19	10.26.2020 21:35	10.26.2020 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 9.96	529 10.0	411 10.0	189 9.96	108 10.1	52.0 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	10.23.2020 17:31	10.23.2020 17:31	10.23.2020 17:31	10.23.2020 17:31	10.23.2020 17:31	10.23.2020 17:31
	<i>Analyzed:</i>	10.24.2020 00:05	10.24.2020 00:26	10.24.2020 00:46	10.24.2020 01:06	10.24.2020 01:47	10.24.2020 02:07
	<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)		<50.0 50.0	<50.1 50.1	<50.1 50.1	<49.9 49.9	<50.1 50.1	<49.9 49.9
Diesel Range Organics (DRO)		<50.0 50.0	<50.1 50.1	<50.1 50.1	<49.9 49.9	<50.1 50.1	59.5 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.1 50.1	<50.1 50.1	<49.9 49.9	<50.1 50.1	<49.9 49.9
Total GRO-DRO		<50.0 50.0	<50.1 50.1	<50.1 50.1	<49.9 49.9	<50.1 50.1	59.5 49.9
Total TPH		<50.0 50.0	<50.1 50.1	<50.1 50.1	<49.9 49.9	<50.1 50.1	59.5 49.9

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 675984

LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
 Contact: Dan Moir
 Project Location: Eddy County, New Mexico

Date Received in Lab: Fri 10.23.2020 11:30
 Report Date: 10.28.2020 11:43
 Project Manager: Jessica Kramer

Analysis Requested	Lab Id: 675984-013 Field Id: SW16 Depth: 0-4 ft Matrix: SOIL Sampled: 10.22.2020 10:56					
BTEX by EPA 8021B	Extracted: 10.23.2020 15:26 Analyzed: 10.24.2020 11:11 Units/RL: mg/kg RL					
Benzene	<0.00199 0.00199					
Toluene	<0.00199 0.00199					
Ethylbenzene	<0.00199 0.00199					
m,p-Xylenes	<0.00398 0.00398					
o-Xylene	<0.00199 0.00199					
Total Xylenes	<0.00199 0.00199					
Total BTEX	<0.00199 0.00199					
Chloride by EPA 300	Extracted: 10.26.2020 17:10 Analyzed: 10.26.2020 21:46 Units/RL: mg/kg RL					
Chloride	169 9.92					
TPH by SW8015 Mod	Extracted: 10.23.2020 17:31 Analyzed: 10.24.2020 02:27 Units/RL: mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<50.0 50.0					
Diesel Range Organics (DRO)	<50.0 50.0					
Motor Oil Range Hydrocarbons (MRO)	<50.0 50.0					
Total GRO-DRO	<50.0 50.0					
Total TPH	<50.0 50.0					

BRL - Below Reporting Limit

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





Analytical Report 675984

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

10.28.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



10.28.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **675984**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 675984. 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. 675984 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 675984****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS10	S	10.22.2020 10:27	4 ft	675984-001
FS11	S	10.22.2020 10:28	4 ft	675984-002
FS12	S	10.22.2020 10:30	4 ft	675984-003
FS13	S	10.22.2020 10:32	4 ft	675984-004
FS14	S	10.22.2020 10:34	4 ft	675984-005
SW09	S	10.22.2020 10:41	0 - 4 ft	675984-006
SW10	S	10.22.2020 10:43	0 - 4 ft	675984-007
SW11	S	10.22.2020 10:44	0 - 4 ft	675984-008
SW12	S	10.22.2020 10:46	0 - 4 ft	675984-009
SW13	S	10.22.2020 10:48	0 - 4 ft	675984-010
SW14	S	10.22.2020 10:50	0 - 4 ft	675984-011
SW15	S	10.22.2020 10:53	0 - 4 ft	675984-012
SW16	S	10.22.2020 10:56	0 - 4 ft	675984-013



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 675984

Report Date: 10.28.2020
Date Received: 10.23.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS10**
Lab Sample Id: 675984-001

Matrix: Soil
Date Collected: 10.22.2020 10:27

Date Received: 10.23.2020 11:30
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 14:30

% Moisture:
Basis: Wet Weight

Seq Number: 3140531

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2870	49.6	mg/kg	10.23.2020 18:01		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 10.23.2020 17:31

% Moisture:
Basis: Wet Weight

Seq Number: 3140551

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.23.2020 21:24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.23.2020 21:24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.23.2020 21:24	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.23.2020 21:24	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.23.2020 21:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	10.23.2020 21:24	
o-Terphenyl	84-15-1	115	%	70-135	10.23.2020 21:24	



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS10**
Lab Sample Id: 675984-001

Matrix: Soil
Date Collected: 10.22.2020 10:27

Date Received: 10.23.2020 11:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.24.2020 05:47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.24.2020 05:47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.24.2020 05:47	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.24.2020 05:47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.24.2020 05:47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.24.2020 05:47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.24.2020 05:47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.24.2020 05:47		
4-Bromofluorobenzene	460-00-4	89	%	70-130	10.24.2020 05:47		



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS11** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-002 Date Collected: 10.22.2020 10:28 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3720	49.9	mg/kg	10.23.2020 18:06		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.23.2020 22:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.23.2020 22:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.23.2020 22:25	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.23.2020 22:25	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.23.2020 22:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	10.23.2020 22:25	
o-Terphenyl	84-15-1	98	%	70-135	10.23.2020 22:25	



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS11**
 Lab Sample Id: 675984-002

Matrix: Soil
 Date Collected: 10.22.2020 10:28

Date Received: 10.23.2020 11:30
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
 Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.24.2020 06:09	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.24.2020 06:09	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.24.2020 06:09	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.24.2020 06:09	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.24.2020 06:09	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.24.2020 06:09	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.24.2020 06:09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.24.2020 06:09		
4-Bromofluorobenzene	460-00-4	92	%	70-130	10.24.2020 06:09		



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS12** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-003 Date Collected: 10.22.2020 10:30 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2860	49.8	mg/kg	10.23.2020 18:23		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.23.2020 22:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.23.2020 22:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.23.2020 22:45	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.23.2020 22:45	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.23.2020 22:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.23.2020 22:45	
o-Terphenyl	84-15-1	105	%	70-135	10.23.2020 22:45	



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS12**
Lab Sample Id: 675984-003

Matrix: Soil
Date Collected: 10.22.2020 10:30

Date Received: 10.23.2020 11:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.24.2020 06:31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.24.2020 06:31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.24.2020 06:31	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.24.2020 06:31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.24.2020 06:31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.24.2020 06:31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.24.2020 06:31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	10.24.2020 06:31		
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.24.2020 06:31		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS13** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-004 Date Collected: 10.22.2020 10:32 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2700	49.9	mg/kg	10.23.2020 18:29		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.23.2020 23:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.23.2020 23:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.23.2020 23:05	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.23.2020 23:05	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.23.2020 23:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	10.23.2020 23:05	
o-Terphenyl	84-15-1	102	%	70-135	10.23.2020 23:05	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS13**
 Lab Sample Id: 675984-004

Matrix: Soil
 Date Collected: 10.22.2020 10:32

Date Received: 10.23.2020 11:30
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
 Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.24.2020 06:54	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.24.2020 06:54	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.24.2020 06:54	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.24.2020 06:54	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.24.2020 06:54	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.24.2020 06:54	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.24.2020 06:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	10.24.2020 06:54		
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.24.2020 06:54		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS14** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-005 Date Collected: 10.22.2020 10:34 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5230	49.8	mg/kg	10.23.2020 18:34		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.23.2020 23:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.23.2020 23:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.23.2020 23:25	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.23.2020 23:25	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.23.2020 23:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	10.23.2020 23:25	
o-Terphenyl	84-15-1	108	%	70-135	10.23.2020 23:25	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS14**
 Lab Sample Id: 675984-005

Matrix: Soil
 Date Collected: 10.22.2020 10:34

Date Received: 10.23.2020 11:30
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
 Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.24.2020 07:16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.24.2020 07:16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.24.2020 07:16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.24.2020 07:16	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.24.2020 07:16	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.24.2020 07:16	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.24.2020 07:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.24.2020 07:16	
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.24.2020 07:16	



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Muy Wayno Frac Pond

Sample Id: **SW09** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-006 Date Collected: 10.22.2020 10:41 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	591	9.98	mg/kg	10.23.2020 18:40		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.23.2020 23:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.23.2020 23:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.23.2020 23:45	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.23.2020 23:45	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.23.2020 23:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	10.23.2020 23:45	
o-Terphenyl	84-15-1	106	%	70-135	10.23.2020 23:45	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW09**
Lab Sample Id: 675984-006

Matrix: Soil
Date Collected: 10.22.2020 10:41

Date Received: 10.23.2020 11:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.24.2020 07:39	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.24.2020 07:39	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.24.2020 07:39	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.24.2020 07:39	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.24.2020 07:39	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.24.2020 07:39	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.24.2020 07:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	88	%	70-130	10.24.2020 07:39	
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.24.2020 07:39	



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Muy Wayno Frac Pond

Sample Id: **SW10** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-007 Date Collected: 10.22.2020 10:43 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	413	9.96	mg/kg	10.23.2020 18:45		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.24.2020 00:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.24.2020 00:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.24.2020 00:05	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.24.2020 00:05	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.24.2020 00:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	10.24.2020 00:05	
o-Terphenyl	84-15-1	107	%	70-135	10.24.2020 00:05	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW10**
Lab Sample Id: 675984-007

Matrix: Soil
Date Collected: 10.22.2020 10:43

Date Received: 10.23.2020 11:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.24.2020 08:01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.24.2020 08:01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.24.2020 08:01	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.24.2020 08:01	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.24.2020 08:01	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.24.2020 08:01	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.24.2020 08:01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	10.24.2020 08:01		
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.24.2020 08:01		



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Muy Wayno Frac Pond

Sample Id: **SW11** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-008 Date Collected: 10.22.2020 10:44 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	529	10.0	mg/kg	10.23.2020 18:51		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.24.2020 00:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.24.2020 00:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.24.2020 00:26	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.24.2020 00:26	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.24.2020 00:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	10.24.2020 00:26	
o-Terphenyl	84-15-1	104	%	70-135	10.24.2020 00:26	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW11**
Lab Sample Id: 675984-008

Matrix: Soil
Date Collected: 10.22.2020 10:44

Date Received: 10.23.2020 11:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.24.2020 08:23	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.24.2020 08:23	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.24.2020 08:23	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.24.2020 08:23	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.24.2020 08:23	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.24.2020 08:23	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.24.2020 08:23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.24.2020 08:23		
4-Bromofluorobenzene	460-00-4	90	%	70-130	10.24.2020 08:23		



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Muy Wayno Frac Pond

Sample Id: **SW12** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-009 Date Collected: 10.22.2020 10:46 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.23.2020 14:30 % Moisture:
 Seq Number: 3140531 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	411	10.0	mg/kg	10.23.2020 18:57		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.24.2020 00:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.24.2020 00:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.24.2020 00:46	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.24.2020 00:46	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.24.2020 00:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	10.24.2020 00:46	
o-Terphenyl	84-15-1	100	%	70-135	10.24.2020 00:46	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW12**
 Lab Sample Id: 675984-009

Matrix: Soil
 Date Collected: 10.22.2020 10:46

Date Received: 10.23.2020 11:30
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
 Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.24.2020 08:46	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.24.2020 08:46	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.24.2020 08:46	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.24.2020 08:46	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.24.2020 08:46	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.24.2020 08:46	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.24.2020 08:46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.24.2020 08:46		
4-Bromofluorobenzene	460-00-4	86	%	70-130	10.24.2020 08:46		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW13** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-010 Date Collected: 10.22.2020 10:48 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.26.2020 17:10 % Moisture:
 Seq Number: 3140632 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	189	9.96	mg/kg	10.26.2020 21:19		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.24.2020 01:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.24.2020 01:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.24.2020 01:06	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.24.2020 01:06	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.24.2020 01:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.24.2020 01:06	
o-Terphenyl	84-15-1	97	%	70-135	10.24.2020 01:06	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW13**
Lab Sample Id: 675984-010

Matrix: Soil
Date Collected: 10.22.2020 10:48

Date Received: 10.23.2020 11:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.24.2020 09:08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.24.2020 09:08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.24.2020 09:08	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.24.2020 09:08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.24.2020 09:08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.24.2020 09:08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.24.2020 09:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.24.2020 09:08		
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.24.2020 09:08		



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW14** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-011 Date Collected: 10.22.2020 10:50 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.26.2020 17:10 % Moisture:
 Seq Number: 3140632 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	108	10.1	mg/kg	10.26.2020 21:35		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.24.2020 01:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.24.2020 01:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.24.2020 01:47	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.24.2020 01:47	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.24.2020 01:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	10.24.2020 01:47	
o-Terphenyl	84-15-1	99	%	70-135	10.24.2020 01:47	



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW14**
 Lab Sample Id: 675984-011

Matrix: Soil
 Date Collected: 10.22.2020 10:50

Date Received: 10.23.2020 11:30
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
 Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.24.2020 10:26	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.24.2020 10:26	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.24.2020 10:26	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.24.2020 10:26	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.24.2020 10:26	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.24.2020 10:26	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.24.2020 10:26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	85	%	70-130	10.24.2020 10:26		
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.24.2020 10:26		



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW15** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-012 Date Collected: 10.22.2020 10:53 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.26.2020 17:10 % Moisture:
 Seq Number: 3140632 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	52.0	9.98	mg/kg	10.26.2020 21:41		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.24.2020 02:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	59.5	49.9	mg/kg	10.24.2020 02:07		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.24.2020 02:07	U	1
Total GRO-DRO	PHC628	59.5	49.9	mg/kg	10.24.2020 02:07		1
Total TPH	PHC635	59.5	49.9	mg/kg	10.24.2020 02:07		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	10.24.2020 02:07	
o-Terphenyl	84-15-1	97	%	70-135	10.24.2020 02:07	



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW15**
Lab Sample Id: 675984-012

Matrix: Soil
Date Collected: 10.22.2020 10:53

Date Received: 10.23.2020 11:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.24.2020 10:48	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.24.2020 10:48	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.24.2020 10:48	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.24.2020 10:48	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.24.2020 10:48	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.24.2020 10:48	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.24.2020 10:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.24.2020 10:48		
4-Bromofluorobenzene	460-00-4	89	%	70-130	10.24.2020 10:48		



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW16** Matrix: Soil Date Received: 10.23.2020 11:30
 Lab Sample Id: 675984-013 Date Collected: 10.22.2020 10:56 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.26.2020 17:10 % Moisture:
 Seq Number: 3140632 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	169	9.92	mg/kg	10.26.2020 21:46		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.23.2020 17:31 % Moisture:
 Seq Number: 3140551 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.24.2020 02:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.24.2020 02:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.24.2020 02:27	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.24.2020 02:27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.24.2020 02:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	10.24.2020 02:27	
o-Terphenyl	84-15-1	108	%	70-135	10.24.2020 02:27	



Certificate of Analytical Results 675984

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW16**
 Lab Sample Id: 675984-013

Matrix: Soil
 Date Collected: 10.22.2020 10:56

Date Received: 10.23.2020 11:30
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.23.2020 15:26

% Moisture:
 Basis: Wet Weight

Seq Number: 3140548

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.24.2020 11:11	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.24.2020 11:11	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.24.2020 11:11	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.24.2020 11:11	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.24.2020 11:11	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.24.2020 11:11	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.24.2020 11:11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.24.2020 11:11		
4-Bromofluorobenzene	460-00-4	92	%	70-130	10.24.2020 11:11		

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.
Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3140531

MB Sample Id: 7713822-1-BLK

Matrix: Solid

LCS Sample Id: 7713822-1-BKS

Prep Method: E300P

Date Prep: 10.23.2020

LCSD Sample Id: 7713822-1-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	254	102	251	100	90-110	1	20	mg/kg	10.23.2020 16:15	

Analytical Method: Chloride by EPA 300

Seq Number: 3140632

MB Sample Id: 7713961-1-BLK

Matrix: Solid

LCS Sample Id: 7713961-1-BKS

Prep Method: E300P

Date Prep: 10.26.2020

LCSD Sample Id: 7713961-1-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	250	100	90-110	2	20	mg/kg	10.26.2020 21:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3140531

Parent Sample Id: 675922-001

Matrix: Soil

MS Sample Id: 675922-001 S

Prep Method: E300P

Date Prep: 10.23.2020

MSD Sample Id: 675922-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4980	203	5170	94	5170	94	90-110	0	20	mg/kg	10.23.2020 16:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3140531

Parent Sample Id: 675970-002

Matrix: Soil

MS Sample Id: 675970-002 S

Prep Method: E300P

Date Prep: 10.23.2020

MSD Sample Id: 675970-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.0	200	207	99	202	96	90-110	2	20	mg/kg	10.23.2020 17:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3140632

Parent Sample Id: 675984-010

Matrix: Soil

MS Sample Id: 675984-010 S

Prep Method: E300P

Date Prep: 10.26.2020

MSD Sample Id: 675984-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	189	200	392	102	387	99	90-110	1	20	mg/kg	10.26.2020 21:24	

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.

Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140551

MB Sample Id: 7713884-1-BLK

Matrix: Solid

LCS Sample Id: 7713884-1-BKS

Prep Method: SW8015P

Date Prep: 10.23.2020

LCSD Sample Id: 7713884-1-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	940	94	70-135	5	35	mg/kg	10.23.2020 20:44	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	1020	102	70-135	5	35	mg/kg	10.23.2020 20:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		134		130		70-135	%	10.23.2020 20:44
o-Terphenyl	94		102		100		70-135	%	10.23.2020 20:44

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140551

Matrix: Solid

MB Sample Id: 7713884-1-BLK

Prep Method: SW8015P

Date Prep: 10.23.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.23.2020 20:23	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140551

Matrix: Soil

Parent Sample Id: 675984-001

MS Sample Id: 675984-001 S

Prep Method: SW8015P

Date Prep: 10.23.2020

MSD Sample Id: 675984-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	805	81	717	72	70-135	12	35	mg/kg	10.23.2020 21:44	
Diesel Range Organics (DRO)	<50.0	1000	862	86	791	79	70-135	9	35	mg/kg	10.23.2020 21:44	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	131		108		70-135	%	10.23.2020 21:44
o-Terphenyl	106		99		70-135	%	10.23.2020 21:44

Analytical Method: BTEX by EPA 8021B

Seq Number: 3140548

Matrix: Solid

MB Sample Id: 7713826-1-BLK

LCS Sample Id: 7713826-1-BKS

Prep Method: SW5035A

Date Prep: 10.23.2020

LCSD Sample Id: 7713826-1-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	0.0974	97	0.0947	95	70-130	3	35	mg/kg	10.24.2020 03:44	
Toluene	<0.00200	0.100	0.0978	98	0.0945	95	70-130	3	35	mg/kg	10.24.2020 03:44	
Ethylbenzene	<0.00200	0.100	0.0861	86	0.0829	83	71-129	4	35	mg/kg	10.24.2020 03:44	
m,p-Xylenes	<0.00400	0.200	0.173	87	0.167	84	70-135	4	35	mg/kg	10.24.2020 03:44	
o-Xylene	<0.00200	0.100	0.0869	87	0.0835	84	71-133	4	35	mg/kg	10.24.2020 03:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		98		98		70-130	%	10.24.2020 03:44
4-Bromofluorobenzene	88		85		87		70-130	%	10.24.2020 03:44

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.

Muy Wayno Frac Pond

Analytical Method: BTEX by EPA 8021B

Seq Number: 3140548

Parent Sample Id: 675984-001

Matrix: Soil

MS Sample Id: 675984-001 S

Prep Method: SW5035A

Date Prep: 10.23.2020

MSD Sample Id: 675984-001 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	0.106	106	0.0964	96	70-130	9	35	mg/kg	10.24.2020 04:29	
Toluene	<0.00200	0.100	0.106	106	0.0965	97	70-130	9	35	mg/kg	10.24.2020 04:29	
Ethylbenzene	<0.00200	0.100	0.0945	95	0.0865	87	71-129	9	35	mg/kg	10.24.2020 04:29	
m,p-Xylenes	<0.00401	0.200	0.188	94	0.173	86	70-135	8	35	mg/kg	10.24.2020 04:29	
o-Xylene	<0.00200	0.100	0.0938	94	0.0857	86	71-133	9	35	mg/kg	10.24.2020 04:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		98		70-130	%	10.24.2020 04:29
4-Bromofluorobenzene	86		85		70-130	%	10.24.2020 04:29

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



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

Chain of Custody

Work Order No: 675984

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littell
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

ANALYSIS REQUEST

Work Order Notes

Project Name:	Muy Wayno Frac Pond	Turn Around	
Project Number:	012920104	Routine	
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers													Sample Comments
					TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)											
FS10	S	10/22/2010	10:27	4'	1	X	X	X										Composite
FS11	S	10/22/2010	10:28	4'	1	X	X	X										Composite
FS12	S	10/22/2010	10:30	4'	1	X	X	X										Composite
FS13	S	10/22/2010	10:32	4'	1	X	X	X										Composite
FS14	S	10/22/2010	10:34	4'	1	X	X	X										Composite
SW09	S	10/22/2010	10:41	0-4'	1	X	X	X										Composite
SW10	S	10/22/2010	10:43	0-4'	1	X	X	X										Composite
SW11	S	10/22/2010	10:44	0-4'	1	X	X	X										Composite
SW12	S	10/22/2010	10:46	0-4'	1	X	X	X										Composite
SW13	S	10/22/2010	10:48	0-4'	1	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

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
		10-33-26 1130			4
					6



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 (81

Work Order No: 675984

www.xenco.com Page 2 of 2

Chain of Custody

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:	wmathner@ltenv.com , dmoir@ltenv.com

Work Order Comments	
Program: UST/PST ☐ RP ☐ Growfields ☒ RC ☐ Fund ☐	
State of Project:	
Reporting Level I ☐ Level III ☐ PT/UST ☐ RP ☒ Level IV ☐	
Deliverables: EDD ☐ ADaPT ☐ Other: ☐	

Project Name:	My Wayno Frac Pond	Turn Around	ANALYSIS REQUEST							Work Order Notes
Project Number:	012920104	Routine								
P.O. Number:	Eddy	Rush:								
Sampler's Name:	William Mather	Due Date:								

SAMPLE RECEIPT		Temp Blank:	☒ Yes	☐ No	Wet Ice:	☒ Yes	☐ No
Temperature (°C):	3.6/3.4 Thermometer ID						
Received Intact:	~~Yes~~ No 1-NM007						
Cooler Custody Seals:	Yes ~~No~~		N/A		Correction Factor:		-0.2
Sample Custody Seals:	Yes ~~No~~		N/A		Total Containers:		13

Number of Containers

EPA 8015)

EPA 0=8021)

le (EPA 300.0)

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

[illegible]

Total 200.7 / 6010 200.8 6020:
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														
8RCRA	13PPM	Texas	11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	H	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 service. 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
		10-23-2013			

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10.23.2020 11.30.00 AM

Work Order #: 675984

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)?	3.4
#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:



Cloe Clifton

Date: 10.23.2020

Checklist reviewed by:



Jessica Kramer

Date: 10.23.2020

Certificate of Analysis Summary 676153



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Tue 10.27.2020 10:11
Report Date: 10.29.2020 09:03
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	676153-001	676153-002	676153-003	676153-004	676153-005	676153-006
	<i>Field Id:</i>	FS15	FS16	FS17	FS18	SW17	SW18
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	0-4 ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	10.26.2020 09:55	10.26.2020 09:57	10.26.2020 09:59	10.26.2020 10:00	10.26.2020 10:03	10.26.2020 10:05
BTEX by EPA 8021B	<i>Extracted:</i>	10.27.2020 17:05	10.27.2020 17:05	10.27.2020 17:05	10.27.2020 17:05	10.27.2020 17:05	10.27.2020 17:05
	<i>Analyzed:</i>	10.28.2020 04:34	10.28.2020 04:56	10.28.2020 05:19	10.28.2020 05:41	10.28.2020 07:01	10.28.2020 07:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201
m,p-Xylenes		<0.00401 0.00401	<0.00398 0.00398	<0.00397 0.00397	<0.00403 0.00403	<0.00402 0.00402	<0.00402 0.00402
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	<0.00201 0.00201	<0.00201 0.00201
Chloride by EPA 300	<i>Extracted:</i>	10.27.2020 14:02	10.27.2020 14:02	10.27.2020 14:02	10.27.2020 14:02	10.27.2020 14:02	10.27.2020 14:02
	<i>Analyzed:</i>	10.27.2020 20:59	10.27.2020 21:05	10.27.2020 21:11	10.27.2020 21:17	10.27.2020 21:23	10.27.2020 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		4660 50.0	3090 49.9	2310 50.2	4090 50.1	301 9.94	133 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	10.27.2020 16:58	10.27.2020 16:58	10.27.2020 16:58	10.27.2020 16:58	10.27.2020 16:58	10.27.2020 16:58
	<i>Analyzed:</i>	10.28.2020 01:51	10.28.2020 02:11	10.28.2020 02:31	10.28.2020 02:51	10.28.2020 03:30	10.28.2020 03:50
	<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	<49.9 49.9	<50.1 50.1	<50.0 50.0	<49.8 49.8	<50.1 50.1
Diesel Range Organics (DRO)		<49.8 49.8	<49.9 49.9	<50.1 50.1	<50.0 50.0	<49.8 49.8	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.9 49.9	<50.1 50.1	<50.0 50.0	<49.8 49.8	<50.1 50.1
Total GRO-DRO		<49.8 49.8	<49.9 49.9	<50.1 50.1	<50.0 50.0	<49.8 49.8	<50.1 50.1
Total TPH		<49.8 49.8	<49.9 49.9	<50.1 50.1	<50.0 50.0	<49.8 49.8	<50.1 50.1

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 676153



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Tue 10.27.2020 10:11
Report Date: 10.29.2020 09:03
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	676153-007	676153-008	676153-009	676153-010		
	<i>Field Id:</i>	SW19	SW20	SW21	SW22		
	<i>Depth:</i>	0-4 ft	0-4 ft	0-4 ft	0-4 ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	10.26.2020 10:07	10.26.2020 10:09	10.26.2020 10:10	10.26.2020 10:11		
BTEX by EPA 8021B	<i>Extracted:</i>	10.27.2020 17:05	10.27.2020 17:05	10.27.2020 17:05	10.27.2020 17:05		
	<i>Analyzed:</i>	10.28.2020 07:46	10.28.2020 08:09	10.28.2020 08:31	10.28.2020 08:54		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200		
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200		
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200		
m,p-Xylenes		<0.00401 0.00401	<0.00402 0.00402	<0.00397 0.00397	<0.00401 0.00401		
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200		
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200		
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200		
Chloride by EPA 300	<i>Extracted:</i>	10.27.2020 14:02	10.27.2020 14:02	10.27.2020 14:02	10.27.2020 14:02		
	<i>Analyzed:</i>	10.27.2020 21:47	10.27.2020 22:05	10.27.2020 22:11	10.27.2020 22:17		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		47.6 10.0	70.7 9.92	40.2 9.94	278 9.98		
TPH by SW8015 Mod	<i>Extracted:</i>	10.27.2020 16:58	10.27.2020 16:58	10.27.2020 16:58	10.27.2020 16:58		
	<i>Analyzed:</i>	10.28.2020 04:10	10.28.2020 04:30	10.28.2020 04:50	10.28.2020 05:10		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.2 50.2	<50.0 50.0	<50.0 50.0		
Diesel Range Organics (DRO)		<50.0 50.0	<50.2 50.2	<50.0 50.0	<50.0 50.0		
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.2 50.2	<50.0 50.0	<50.0 50.0		
Total GRO-DRO		<50.0 50.0	<50.2 50.2	<50.0 50.0	<50.0 50.0		
Total TPH		<50.0 50.0	<50.2 50.2	<50.0 50.0	<50.0 50.0		

BRL - Below Reporting Limit

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



Analytical Report 676153

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

10.29.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



10.29.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **676153**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 676153. 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. 676153 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 676153****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS15	S	10.26.2020 09:55	4 ft	676153-001
FS16	S	10.26.2020 09:57	4 ft	676153-002
FS17	S	10.26.2020 09:59	4 ft	676153-003
FS18	S	10.26.2020 10:00	4 ft	676153-004
SW17	S	10.26.2020 10:03	0 - 4 ft	676153-005
SW18	S	10.26.2020 10:05	0 - 4 ft	676153-006
SW19	S	10.26.2020 10:07	0 - 4 ft	676153-007
SW20	S	10.26.2020 10:09	0 - 4 ft	676153-008
SW21	S	10.26.2020 10:10	0 - 4 ft	676153-009
SW22	S	10.26.2020 10:11	0 - 4 ft	676153-010



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 676153

Report Date: 10.29.2020
Date Received: 10.27.2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 676153

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS15**
Lab Sample Id: 676153-001

Matrix: Soil
Date Collected: 10.26.2020 09:55

Date Received: 10.27.2020 10:11
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 14:02

% Moisture:
Basis: Wet Weight

Seq Number: 3140756

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4660	50.0	mg/kg	10.27.2020 20:59		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 10.27.2020 16:58

% Moisture:
Basis: Wet Weight

Seq Number: 3140768

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.28.2020 01:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.28.2020 01:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.28.2020 01:51	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.28.2020 01:51	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.28.2020 01:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	10.28.2020 01:51	
o-Terphenyl	84-15-1	114	%	70-135	10.28.2020 01:51	



Certificate of Analytical Results 676153

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS15**
 Lab Sample Id: 676153-001

Matrix: Soil
 Date Collected: 10.26.2020 09:55

Date Received: 10.27.2020 10:11
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 17:05

% Moisture:
 Basis: Wet Weight

Seq Number: 3140788

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.28.2020 04:34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.28.2020 04:34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.28.2020 04:34	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.28.2020 04:34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.28.2020 04:34	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.28.2020 04:34	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.28.2020 04:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	10.28.2020 04:34		
4-Bromofluorobenzene	460-00-4	121	%	70-130	10.28.2020 04:34		



Certificate of Analytical Results 676153

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS16**
Lab Sample Id: 676153-002

Matrix: Soil
Date Collected: 10.26.2020 09:57

Date Received: 10.27.2020 10:11
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 14:02

% Moisture:
Basis: Wet Weight

Seq Number: 3140756

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3090	49.9	mg/kg	10.27.2020 21:05		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 10.27.2020 16:58

% Moisture:
Basis: Wet Weight

Seq Number: 3140768

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.28.2020 02:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.28.2020 02:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.28.2020 02:11	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.28.2020 02:11	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.28.2020 02:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	10.28.2020 02:11	
o-Terphenyl	84-15-1	116	%	70-135	10.28.2020 02:11	



Certificate of Analytical Results 676153

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS16**
 Lab Sample Id: 676153-002

Matrix: Soil
 Date Collected: 10.26.2020 09:57

Date Received: 10.27.2020 10:11
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 17:05

% Moisture:
 Basis: Wet Weight

Seq Number: 3140788

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.28.2020 04:56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.28.2020 04:56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.28.2020 04:56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.28.2020 04:56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.28.2020 04:56	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.28.2020 04:56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.28.2020 04:56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.28.2020 04:56		
4-Bromofluorobenzene	460-00-4	117	%	70-130	10.28.2020 04:56		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS17** Matrix: Soil Date Received: 10.27.2020 10:11
 Lab Sample Id: 676153-003 Date Collected: 10.26.2020 09:59 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.27.2020 14:02 % Moisture:
 Seq Number: 3140756 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2310	50.2	mg/kg	10.27.2020 21:11		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.27.2020 16:58 % Moisture:
 Seq Number: 3140768 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.28.2020 02:31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.28.2020 02:31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.28.2020 02:31	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.28.2020 02:31	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.28.2020 02:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	10.28.2020 02:31	
o-Terphenyl	84-15-1	114	%	70-135	10.28.2020 02:31	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS17**
Lab Sample Id: 676153-003

Matrix: Soil
Date Collected: 10.26.2020 09:59

Date Received: 10.27.2020 10:11
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 17:05

% Moisture:
Basis: Wet Weight

Seq Number: 3140788

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.28.2020 05:19	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.28.2020 05:19	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.28.2020 05:19	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.28.2020 05:19	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.28.2020 05:19	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.28.2020 05:19	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.28.2020 05:19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	109	%	70-130	10.28.2020 05:19		
4-Bromofluorobenzene	460-00-4	120	%	70-130	10.28.2020 05:19		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS18** Matrix: Soil Date Received: 10.27.2020 10:11
 Lab Sample Id: 676153-004 Date Collected: 10.26.2020 10:00 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.27.2020 14:02 % Moisture:
 Seq Number: 3140756 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4090	50.1	mg/kg	10.27.2020 21:17		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.27.2020 16:58 % Moisture:
 Seq Number: 3140768 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.2020 02:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.2020 02:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.2020 02:51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.2020 02:51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.2020 02:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	10.28.2020 02:51	
o-Terphenyl	84-15-1	121	%	70-135	10.28.2020 02:51	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS18**
 Lab Sample Id: 676153-004

Matrix: Soil
 Date Collected: 10.26.2020 10:00

Date Received: 10.27.2020 10:11
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 17:05

% Moisture:
 Basis: Wet Weight

Seq Number: 3140788

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.28.2020 05:41	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.28.2020 05:41	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.28.2020 05:41	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.28.2020 05:41	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.28.2020 05:41	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.28.2020 05:41	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.28.2020 05:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	124	%	70-130	10.28.2020 05:41	
1,4-Difluorobenzene	540-36-3	108	%	70-130	10.28.2020 05:41	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW17** Matrix: Soil Date Received: 10.27.2020 10:11
 Lab Sample Id: 676153-005 Date Collected: 10.26.2020 10:03 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.27.2020 14:02 % Moisture:
 Seq Number: 3140756 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	301	9.94	mg/kg	10.27.2020 21:23		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.27.2020 16:58 % Moisture:
 Seq Number: 3140768 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.28.2020 03:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.28.2020 03:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.28.2020 03:30	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.28.2020 03:30	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.28.2020 03:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	10.28.2020 03:30	
o-Terphenyl	84-15-1	115	%	70-135	10.28.2020 03:30	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW17**
 Lab Sample Id: 676153-005

Matrix: Soil
 Date Collected: 10.26.2020 10:03

Date Received: 10.27.2020 10:11
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 17:05

% Moisture:
 Basis: Wet Weight

Seq Number: 3140788

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.28.2020 07:01	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.28.2020 07:01	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.28.2020 07:01	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.28.2020 07:01	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.28.2020 07:01	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.28.2020 07:01	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.28.2020 07:01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.28.2020 07:01		
4-Bromofluorobenzene	460-00-4	114	%	70-130	10.28.2020 07:01		



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Muy Wayno Frac Pond

Sample Id: **SW18** Matrix: Soil Date Received: 10.27.2020 10:11
 Lab Sample Id: 676153-006 Date Collected: 10.26.2020 10:05 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.27.2020 14:02 % Moisture:
 Seq Number: 3140756 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	133	10.1	mg/kg	10.27.2020 21:41		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.27.2020 16:58 % Moisture:
 Seq Number: 3140768 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.28.2020 03:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.28.2020 03:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.28.2020 03:50	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.28.2020 03:50	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.28.2020 03:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	10.28.2020 03:50	
o-Terphenyl	84-15-1	114	%	70-135	10.28.2020 03:50	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW18**
 Lab Sample Id: 676153-006

Matrix: Soil
 Date Collected: 10.26.2020 10:05

Date Received: 10.27.2020 10:11
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 17:05

% Moisture:
 Basis: Wet Weight

Seq Number: 3140788

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.28.2020 07:24	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.28.2020 07:24	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.28.2020 07:24	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.28.2020 07:24	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.28.2020 07:24	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.28.2020 07:24	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.28.2020 07:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	10.28.2020 07:24	
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.28.2020 07:24	



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Muy Wayno Frac Pond

Sample Id: **SW19** Matrix: Soil Date Received: 10.27.2020 10:11
 Lab Sample Id: 676153-007 Date Collected: 10.26.2020 10:07 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.27.2020 14:02 % Moisture:
 Seq Number: 3140756 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	47.6	10.0	mg/kg	10.27.2020 21:47		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.27.2020 16:58 % Moisture:
 Seq Number: 3140768 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.2020 04:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.2020 04:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.2020 04:10	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.2020 04:10	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.2020 04:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	10.28.2020 04:10	
o-Terphenyl	84-15-1	112	%	70-135	10.28.2020 04:10	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW19**
 Lab Sample Id: 676153-007

Matrix: Soil
 Date Collected: 10.26.2020 10:07

Date Received: 10.27.2020 10:11
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 17:05

% Moisture:
 Basis: Wet Weight

Seq Number: 3140788

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.28.2020 07:46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.28.2020 07:46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.28.2020 07:46	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.28.2020 07:46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.28.2020 07:46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.28.2020 07:46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.28.2020 07:46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.28.2020 07:46		
4-Bromofluorobenzene	460-00-4	119	%	70-130	10.28.2020 07:46		



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Muy Wayno Frac Pond

Sample Id: **SW20** Matrix: Soil Date Received: 10.27.2020 10:11
 Lab Sample Id: 676153-008 Date Collected: 10.26.2020 10:09 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.27.2020 14:02 % Moisture:
 Seq Number: 3140756 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	70.7	9.92	mg/kg	10.27.2020 22:05		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.27.2020 16:58 % Moisture:
 Seq Number: 3140768 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.28.2020 04:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.28.2020 04:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.28.2020 04:30	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.28.2020 04:30	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.28.2020 04:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	10.28.2020 04:30	
o-Terphenyl	84-15-1	120	%	70-135	10.28.2020 04:30	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW20**
 Lab Sample Id: 676153-008

Matrix: Soil
 Date Collected: 10.26.2020 10:09

Date Received: 10.27.2020 10:11
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 17:05

% Moisture:
 Basis: Wet Weight

Seq Number: 3140788

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.28.2020 08:09	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.28.2020 08:09	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.28.2020 08:09	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.28.2020 08:09	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.28.2020 08:09	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.28.2020 08:09	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.28.2020 08:09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	10.28.2020 08:09		
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.28.2020 08:09		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW21** Matrix: Soil Date Received: 10.27.2020 10:11
 Lab Sample Id: 676153-009 Date Collected: 10.26.2020 10:10 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.27.2020 14:02 % Moisture:
 Seq Number: 3140756 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	40.2	9.94	mg/kg	10.27.2020 22:11		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.27.2020 16:58 % Moisture:
 Seq Number: 3140768 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.2020 04:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.2020 04:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.2020 04:50	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.2020 04:50	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.2020 04:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	10.28.2020 04:50	
o-Terphenyl	84-15-1	114	%	70-135	10.28.2020 04:50	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW21**
Lab Sample Id: 676153-009

Matrix: Soil
Date Collected: 10.26.2020 10:10

Date Received: 10.27.2020 10:11
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 17:05

% Moisture:
Basis: Wet Weight

Seq Number: 3140788

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.28.2020 08:31	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.28.2020 08:31	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.28.2020 08:31	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	10.28.2020 08:31	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.28.2020 08:31	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.28.2020 08:31	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.28.2020 08:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	10.28.2020 08:31	
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.28.2020 08:31	



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Muy Wayno Frac Pond

Sample Id: **SW22** Matrix: Soil Date Received: 10.27.2020 10:11
 Lab Sample Id: 676153-010 Date Collected: 10.26.2020 10:11 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 10.27.2020 14:02 % Moisture:
 Seq Number: 3140756 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	278	9.98	mg/kg	10.27.2020 22:17		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.27.2020 16:58 % Moisture:
 Seq Number: 3140768 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.28.2020 05:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.28.2020 05:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.28.2020 05:10	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.28.2020 05:10	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.28.2020 05:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	10.28.2020 05:10	
o-Terphenyl	84-15-1	115	%	70-135	10.28.2020 05:10	



Certificate of Analytical Results 676153

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW22**
Lab Sample Id: 676153-010

Matrix: Soil
Date Collected: 10.26.2020 10:11

Date Received: 10.27.2020 10:11
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.27.2020 17:05

% Moisture:
Basis: Wet Weight

Seq Number: 3140788

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.28.2020 08:54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.28.2020 08:54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.28.2020 08:54	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.28.2020 08:54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.28.2020 08:54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.28.2020 08:54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.28.2020 08:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	10.28.2020 08:54		
4-Bromofluorobenzene	460-00-4	118	%	70-130	10.28.2020 08:54		

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.

Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3140756

MB Sample Id: 7714019-1-BLK

Matrix: Solid

LCS Sample Id: 7714019-1-BKS

Prep Method: E300P

Date Prep: 10.27.2020

LCSD Sample Id: 7714019-1-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	264	106	262	105	90-110	1	20	mg/kg	10.27.2020 19:48	

Analytical Method: Chloride by EPA 300

Seq Number: 3140756

Parent Sample Id: 676136-001

Matrix: Soil

MS Sample Id: 676136-001 S

Prep Method: E300P

Date Prep: 10.27.2020

MSD Sample Id: 676136-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	200	209	105	206	102	90-110	1	20	mg/kg	10.27.2020 20:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3140756

Parent Sample Id: 676153-005

Matrix: Soil

MS Sample Id: 676153-005 S

Prep Method: E300P

Date Prep: 10.27.2020

MSD Sample Id: 676153-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	301	200	508	104	502	101	90-110	1	20	mg/kg	10.27.2020 21:29	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140768

MB Sample Id: 7714018-1-BLK

Matrix: Solid

LCS Sample Id: 7714018-1-BKS

Prep Method: SW8015P

Date Prep: 10.27.2020

LCSD Sample Id: 7714018-1-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	1160	116	70-135	8	35	mg/kg	10.27.2020 22:32	
Diesel Range Organics (DRO)	<50.0	1000	920	92	1040	104	70-135	12	35	mg/kg	10.27.2020 22:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		86		127		70-135	%	10.27.2020 22:32
o-Terphenyl	107		80		133		70-135	%	10.27.2020 22:32

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140768

Matrix: Solid

MB Sample Id: 7714018-1-BLK

Prep Method: SW8015P

Date Prep: 10.27.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.27.2020 22:12	

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.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3140768

Parent Sample Id: 676136-001

Matrix: Soil

MS Sample Id: 676136-001 S

Prep Method: SW8015P

Date Prep: 10.27.2020

MSD Sample Id: 676136-001 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	1080	108	1110	111	70-135	3	35	mg/kg	10.27.2020 23:32	
Diesel Range Organics (DRO)	<50.2	1000	1250	125	1270	127	70-135	2	35	mg/kg	10.27.2020 23:32	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		125		70-135	%	10.27.2020 23:32
o-Terphenyl	113		104		70-135	%	10.27.2020 23:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3140788

MB Sample Id: 7714021-1-BLK

Matrix: Solid

LCS Sample Id: 7714021-1-BKS

Prep Method: SW5035A

Date Prep: 10.27.2020

LCSD Sample Id: 7714021-1-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	0.101	101	0.104	104	70-130	3	35	mg/kg	10.28.2020 00:14	
Toluene	<0.00200	0.100	0.0989	99	0.0982	98	70-130	1	35	mg/kg	10.28.2020 00:14	
Ethylbenzene	<0.00200	0.100	0.0989	99	0.101	101	71-129	2	35	mg/kg	10.28.2020 00:14	
m,p-Xylenes	<0.00400	0.200	0.202	101	0.208	104	70-135	3	35	mg/kg	10.28.2020 00:14	
o-Xylene	<0.00200	0.100	0.101	101	0.103	103	71-133	2	35	mg/kg	10.28.2020 00:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		101		100		70-130	%	10.28.2020 00:14
4-Bromofluorobenzene	117		109		111		70-130	%	10.28.2020 00:14

Analytical Method: BTEX by EPA 8021B

Seq Number: 3140788

Parent Sample Id: 676136-001

Matrix: Soil

MS Sample Id: 676136-001 S

Prep Method: SW5035A

Date Prep: 10.27.2020

MSD Sample Id: 676136-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.112	112	0.0978	98	70-130	14	35	mg/kg	10.28.2020 00:59	
Toluene	<0.00201	0.100	0.105	105	0.0938	94	70-130	11	35	mg/kg	10.28.2020 00:59	
Ethylbenzene	<0.00201	0.100	0.107	107	0.0953	95	71-129	12	35	mg/kg	10.28.2020 00:59	
m,p-Xylenes	<0.00402	0.201	0.216	107	0.195	97	70-135	10	35	mg/kg	10.28.2020 00:59	
o-Xylene	<0.00201	0.100	0.108	108	0.0977	98	71-133	10	35	mg/kg	10.28.2020 00:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		93		70-130	%	10.28.2020 00:59
4-Bromofluorobenzene	113		102		70-130	%	10.28.2020 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: 167653

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 (770-449-8600) Tampa, FL (813-620-2000)

www.xenco.com Page 1 of 1

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:	lmmather@ltenv.com, dmoir@ltenv.com

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

Project Name:	Muy Wayno Frac Pond	Turn Around	
Project Number:	012920104	Routine	☒
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
	Temperature (°C):	1.0/0.5	Thermometer ID	TMM-007
	Received Intact:	Yes ☒ No ☐	Correction Factor:	-3.2
	Cooler Custody Seals:	Yes ☒ No ☐	Total Containers:	10
	Sample Custody Seals:	Yes ☒ No ☐		

07:51 AM

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8015)	Chloride (EPA 8015)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

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
		10-27-20 1644			

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10.27.2020 10.11.00 AM

Work Order #: 676153

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)?	.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

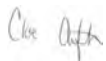
Samples received in bulk containers.

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Cloe Clifton

Date: 10.27.2020

Checklist reviewed by:

Date: 10.27.2020

Certificate of Analysis Summary 676442



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri 10.30.2020 08:48
Report Date: 11.03.2020 11:43
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	676442-001	676442-002	676442-003	676442-004	676442-005	676442-006
	<i>Field Id:</i>	FS19	FS20	FS21	FS22	FS23	SW23
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	4- ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	10.29.2020 09:32	10.29.2020 09:34	10.29.2020 09:36	10.29.2020 09:38	10.29.2020 09:41	10.29.2020 09:45
BTEX by EPA 8021B	<i>Extracted:</i>	10.30.2020 10:00	10.30.2020 10:00	10.30.2020 10:00	10.30.2020 10:00	10.30.2020 10:00	10.30.2020 10:00
	<i>Analyzed:</i>	10.30.2020 17:49	10.30.2020 18:11	10.30.2020 18:34	10.30.2020 18:56	10.30.2020 20:14	10.30.2020 20:36
	<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	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198
m,p-Xylenes		<0.00398 0.00398	<0.00401 0.00401	<0.00403 0.00403	<0.00398 0.00398	<0.00396 0.00396	<0.00396 0.00396
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	11.02.2020 09:32	11.02.2020 09:32	11.02.2020 09:32	11.02.2020 09:32	11.02.2020 09:32	11.02.2020 09:32
	<i>Analyzed:</i>	11.02.2020 10:33	11.02.2020 10:50	11.02.2020 10:56	11.02.2020 11:02	11.02.2020 11:07	11.02.2020 11:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2640 49.4	2480 49.6	2150 49.7	3370 49.9	2160 50.4	55.0 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	10.30.2020 09:30	10.30.2020 09:30	10.30.2020 09:30	10.30.2020 09:30	10.30.2020 09:30	10.30.2020 09:30
	<i>Analyzed:</i>	10.30.2020 10:47	10.30.2020 11:47	10.30.2020 12:07	10.30.2020 12:27	10.30.2020 12:47	10.30.2020 13:07
	<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	<50.2 50.2	<49.8 49.8	<49.9 49.9	<49.8 49.8	<50.0 50.0
Diesel Range Organics (DRO)		<49.8 49.8	<50.2 50.2	<49.8 49.8	<49.9 49.9	<49.8 49.8	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.2 50.2	<49.8 49.8	<49.9 49.9	<49.8 49.8	<50.0 50.0
Total GRO-DRO		<49.8 49.8	<50.2 50.2	<49.8 49.8	<49.9 49.9	<49.8 49.8	<50.0 50.0
Total TPH		<49.8 49.8	<50.2 50.2	<49.8 49.8	<49.9 49.9	<49.8 49.8	<50.0 50.0

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 676442



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri 10.30.2020 08:48
Report Date: 11.03.2020 11:43
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	676442-007	676442-008	676442-009	676442-010	676442-011	676442-012
	<i>Field Id:</i>	SW24	SW25	SW26	SW27	SW28	SW29
	<i>Depth:</i>	0-4 ft	0-4 ft	0-4 ft	0-4 ft	0-4 ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	10.29.2020 09:48	10.29.2020 09:50	10.29.2020 09:52	10.29.2020 10:13	10.29.2020 10:15	10.29.2020 10:18
BTEX by EPA 8021B	<i>Extracted:</i>	10.30.2020 10:00	10.30.2020 10:00	10.30.2020 10:00	10.30.2020 10:00	10.30.2020 10:00	10.30.2020 10:00
	<i>Analyzed:</i>	10.30.2020 20:59	10.30.2020 21:21	10.30.2020 21:43	10.30.2020 22:06	10.30.2020 22:28	10.30.2020 22:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
m,p-Xylenes		<0.00399 0.00399	<0.00402 0.00402	<0.00402 0.00402	<0.00402 0.00402	<0.00403 0.00403	<0.00404 0.00404
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	11.02.2020 09:32	11.02.2020 09:32	11.02.2020 09:32	11.02.2020 09:32	11.02.2020 09:32	11.02.2020 09:32
	<i>Analyzed:</i>	11.02.2020 11:30	11.02.2020 11:36	11.02.2020 11:41	11.02.2020 11:47	11.02.2020 11:52	11.02.2020 12:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		57.0 10.0	307 10.1	124 9.92	14.9 9.98	72.9 9.94	41.6 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	10.30.2020 09:30	10.30.2020 09:30	10.30.2020 09:30	10.30.2020 09:30	10.30.2020 09:30	10.30.2020 09:30
	<i>Analyzed:</i>	10.30.2020 13:27	10.30.2020 13:47	10.30.2020 14:07	10.30.2020 14:27	10.30.2020 15:08	10.30.2020 15:28
	<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	<49.9 49.9	<49.7 49.7	<50.3 50.3	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.7 49.7	<50.3 50.3	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.7 49.7	<50.3 50.3	<50.0 50.0
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.7 49.7	<50.3 50.3	<50.0 50.0
Total TPH		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.7 49.7	<50.3 50.3	<50.0 50.0

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 676442



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri 10.30.2020 08:48
Report Date: 11.03.2020 11:43
Project Manager: Jessica Kramer

Analysis Requested	Lab Id: 676442-013 Field Id: SW30 Depth: 0-4 ft Matrix: SOIL Sampled: 10.29.2020 10:20					
BTEX by EPA 8021B	Extracted: 10.30.2020 10:00 Analyzed: 10.31.2020 00:08 Units/RL: mg/kg RL					
Benzene	<0.00200 0.00200					
Toluene	<0.00200 0.00200					
Ethylbenzene	<0.00200 0.00200					
m,p-Xylenes	<0.00399 0.00399					
o-Xylene	<0.00200 0.00200					
Total Xylenes	<0.00200 0.00200					
Total BTEX	<0.00200 0.00200					
Chloride by EPA 300	Extracted: 11.02.2020 09:32 Analyzed: 11.02.2020 12:14 Units/RL: mg/kg RL					
Chloride	17.0 10.0					
TPH by SW8015 Mod	Extracted: 10.30.2020 09:30 Analyzed: 10.30.2020 15:48 Units/RL: mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<50.1 50.1					
Diesel Range Organics (DRO)	<50.1 50.1					
Motor Oil Range Hydrocarbons (MRO)	<50.1 50.1					
Total GRO-DRO	<50.1 50.1					
Total TPH	<50.1 50.1					

BRL - Below Reporting Limit

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



Analytical Report 676442

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.03.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.03.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **676442**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 676442. 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. 676442 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 676442****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS19	S	10.29.2020 09:32	4 ft	676442-001
FS20	S	10.29.2020 09:34	4 ft	676442-002
FS21	S	10.29.2020 09:36	4 ft	676442-003
FS22	S	10.29.2020 09:38	4 ft	676442-004
FS23	S	10.29.2020 09:41	4 ft	676442-005
SW23	S	10.29.2020 09:45	0 - 4 ft	676442-006
SW24	S	10.29.2020 09:48	0 - 4 ft	676442-007
SW25	S	10.29.2020 09:50	0 - 4 ft	676442-008
SW26	S	10.29.2020 09:52	0 - 4 ft	676442-009
SW27	S	10.29.2020 10:13	0 - 4 ft	676442-010
SW28	S	10.29.2020 10:15	0 - 4 ft	676442-011
SW29	S	10.29.2020 10:18	0 - 4 ft	676442-012
SW30	S	10.29.2020 10:20	0 - 4 ft	676442-013



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 676442

Report Date: 11.03.2020
Date Received: 10.30.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS19**
Lab Sample Id: 676442-001

Matrix: Soil
Date Collected: 10.29.2020 09:32

Date Received: 10.30.2020 08:48
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.02.2020 09:32

% Moisture:
Basis: Wet Weight

Seq Number: 3141203

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2640	49.4	mg/kg	11.02.2020 10:33		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 10.30.2020 09:30

% Moisture:
Basis: Wet Weight

Seq Number: 3141114

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.30.2020 10:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.30.2020 10:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.30.2020 10:47	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.30.2020 10:47	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.30.2020 10:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	10.30.2020 10:47	
o-Terphenyl	84-15-1	118	%	70-135	10.30.2020 10:47	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS19**
Lab Sample Id: 676442-001

Matrix: Soil
Date Collected: 10.29.2020 09:32

Date Received: 10.30.2020 08:48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.30.2020 17:49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.30.2020 17:49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.30.2020 17:49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.30.2020 17:49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.30.2020 17:49	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.30.2020 17:49	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.30.2020 17:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.30.2020 17:49		
4-Bromofluorobenzene	460-00-4	85	%	70-130	10.30.2020 17:49		



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS20** Matrix: Soil Date Received: 10.30.2020 08:48
 Lab Sample Id: 676442-002 Date Collected: 10.29.2020 09:34 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.02.2020 09:32 % Moisture:
 Seq Number: 3141203 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2480	49.6	mg/kg	11.02.2020 10:50		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.30.2020 09:30 % Moisture:
 Seq Number: 3141114 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.30.2020 11:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.30.2020 11:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.30.2020 11:47	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	10.30.2020 11:47	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.30.2020 11:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	10.30.2020 11:47	
o-Terphenyl	84-15-1	117	%	70-135	10.30.2020 11:47	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS20**
 Lab Sample Id: 676442-002

Matrix: Soil
 Date Collected: 10.29.2020 09:34

Date Received: 10.30.2020 08:48
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
 Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.2020 18:11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.2020 18:11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.2020 18:11	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	10.30.2020 18:11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.2020 18:11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.2020 18:11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.2020 18:11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.30.2020 18:11		
1,4-Difluorobenzene	540-36-3	107	%	70-130	10.30.2020 18:11		



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS21** Matrix: Soil Date Received: 10.30.2020 08:48
 Lab Sample Id: 676442-003 Date Collected: 10.29.2020 09:36 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.02.2020 09:32 % Moisture:
 Seq Number: 3141203 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2150	49.7	mg/kg	11.02.2020 10:56		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.30.2020 09:30 % Moisture:
 Seq Number: 3141114 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.30.2020 12:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.30.2020 12:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.30.2020 12:07	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.30.2020 12:07	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.30.2020 12:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	10.30.2020 12:07	
o-Terphenyl	84-15-1	117	%	70-135	10.30.2020 12:07	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS21**
Lab Sample Id: 676442-003

Matrix: Soil
Date Collected: 10.29.2020 09:36

Date Received: 10.30.2020 08:48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.30.2020 18:34	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.30.2020 18:34	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.30.2020 18:34	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.30.2020 18:34	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.30.2020 18:34	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.30.2020 18:34	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.30.2020 18:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	10.30.2020 18:34		
4-Bromofluorobenzene	460-00-4	87	%	70-130	10.30.2020 18:34		



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS22** Matrix: Soil Date Received: 10.30.2020 08:48
 Lab Sample Id: 676442-004 Date Collected: 10.29.2020 09:38 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.02.2020 09:32 % Moisture:
 Seq Number: 3141203 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3370	49.9	mg/kg	11.02.2020 11:02		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.30.2020 09:30 % Moisture:
 Seq Number: 3141114 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.30.2020 12:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.30.2020 12:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.30.2020 12:27	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.30.2020 12:27	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.30.2020 12:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	10.30.2020 12:27	
o-Terphenyl	84-15-1	114	%	70-135	10.30.2020 12:27	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS22**
Lab Sample Id: 676442-004

Matrix: Soil
Date Collected: 10.29.2020 09:38

Date Received: 10.30.2020 08:48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	10.30.2020 18:56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	10.30.2020 18:56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	10.30.2020 18:56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	10.30.2020 18:56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	10.30.2020 18:56	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	10.30.2020 18:56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	10.30.2020 18:56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	10.30.2020 18:56		
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.30.2020 18:56		



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS23**
Lab Sample Id: 676442-005

Matrix: Soil
Date Collected: 10.29.2020 09:41

Date Received: 10.30.2020 08:48
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.02.2020 09:32

% Moisture:
Basis: Wet Weight

Seq Number: 3141203

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2160	50.4	mg/kg	11.02.2020 11:07		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 10.30.2020 09:30

% Moisture:
Basis: Wet Weight

Seq Number: 3141114

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	10.30.2020 12:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	10.30.2020 12:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	10.30.2020 12:47	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	10.30.2020 12:47	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	10.30.2020 12:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	10.30.2020 12:47	
o-Terphenyl	84-15-1	111	%	70-135	10.30.2020 12:47	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS23**
Lab Sample Id: 676442-005

Matrix: Soil
Date Collected: 10.29.2020 09:41

Date Received: 10.30.2020 08:48
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.30.2020 20:14	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.30.2020 20:14	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.30.2020 20:14	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	10.30.2020 20:14	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.30.2020 20:14	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.30.2020 20:14	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.30.2020 20:14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	87	%	70-130	10.30.2020 20:14		
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.30.2020 20:14		



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW23** Matrix: Soil Date Received: 10.30.2020 08:48
 Lab Sample Id: 676442-006 Date Collected: 10.29.2020 09:45 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.02.2020 09:32 % Moisture:
 Seq Number: 3141203 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	55.0	10.1	mg/kg	11.02.2020 11:24		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.30.2020 09:30 % Moisture:
 Seq Number: 3141114 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.30.2020 13:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.30.2020 13:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.30.2020 13:07	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.30.2020 13:07	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.30.2020 13:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	10.30.2020 13:07	
o-Terphenyl	84-15-1	114	%	70-135	10.30.2020 13:07	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW23**
Lab Sample Id: 676442-006

Matrix: Soil
Date Collected: 10.29.2020 09:45

Date Received: 10.30.2020 08:48
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	10.30.2020 20:36	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	10.30.2020 20:36	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	10.30.2020 20:36	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	10.30.2020 20:36	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	10.30.2020 20:36	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	10.30.2020 20:36	U	1
Total BTEX		<0.00198	0.00198	mg/kg	10.30.2020 20:36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	10.30.2020 20:36		
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.30.2020 20:36		



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW24** Matrix: Soil Date Received: 10.30.2020 08:48
 Lab Sample Id: 676442-007 Date Collected: 10.29.2020 09:48 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.02.2020 09:32 % Moisture:
 Seq Number: 3141203 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	57.0	10.0	mg/kg	11.02.2020 11:30		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.30.2020 09:30 % Moisture:
 Seq Number: 3141114 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.30.2020 13:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.30.2020 13:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.30.2020 13:27	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.30.2020 13:27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.30.2020 13:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	10.30.2020 13:27	
o-Terphenyl	84-15-1	127	%	70-135	10.30.2020 13:27	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW24**
Lab Sample Id: 676442-007

Matrix: Soil
Date Collected: 10.29.2020 09:48

Date Received: 10.30.2020 08:48
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.30.2020 20:59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.30.2020 20:59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.30.2020 20:59	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.30.2020 20:59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.30.2020 20:59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.30.2020 20:59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.30.2020 20:59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	10.30.2020 20:59		
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.30.2020 20:59		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW25** Matrix: Soil Date Received: 10.30.2020 08:48
 Lab Sample Id: 676442-008 Date Collected: 10.29.2020 09:50 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.02.2020 09:32 % Moisture:
 Seq Number: 3141203 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	307	10.1	mg/kg	11.02.2020 11:36		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.30.2020 09:30 % Moisture:
 Seq Number: 3141114 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.30.2020 13:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.30.2020 13:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.30.2020 13:47	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.30.2020 13:47	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.30.2020 13:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	10.30.2020 13:47	
o-Terphenyl	84-15-1	117	%	70-135	10.30.2020 13:47	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW25**
Lab Sample Id: 676442-008

Matrix: Soil
Date Collected: 10.29.2020 09:50

Date Received: 10.30.2020 08:48
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.30.2020 21:21	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.30.2020 21:21	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.30.2020 21:21	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.30.2020 21:21	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.30.2020 21:21	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.30.2020 21:21	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.30.2020 21:21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	10.30.2020 21:21		
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.30.2020 21:21		



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW26** Matrix: Soil Date Received: 10.30.2020 08:48
 Lab Sample Id: 676442-009 Date Collected: 10.29.2020 09:52 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.02.2020 09:32 % Moisture:
 Seq Number: 3141203 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	124	9.92	mg/kg	11.02.2020 11:41		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.30.2020 09:30 % Moisture:
 Seq Number: 3141114 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	10.30.2020 14:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	10.30.2020 14:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	10.30.2020 14:07	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	10.30.2020 14:07	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	10.30.2020 14:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	10.30.2020 14:07	
o-Terphenyl	84-15-1	114	%	70-135	10.30.2020 14:07	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW26**
Lab Sample Id: 676442-009

Matrix: Soil
Date Collected: 10.29.2020 09:52

Date Received: 10.30.2020 08:48
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.30.2020 21:43	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.30.2020 21:43	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.30.2020 21:43	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.30.2020 21:43	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.30.2020 21:43	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.30.2020 21:43	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.30.2020 21:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	10.30.2020 21:43		
4-Bromofluorobenzene	460-00-4	91	%	70-130	10.30.2020 21:43		



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW27** Matrix: Soil Date Received: 10.30.2020 08:48
 Lab Sample Id: 676442-010 Date Collected: 10.29.2020 10:13 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.02.2020 09:32 % Moisture:
 Seq Number: 3141203 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.9	9.98	mg/kg	11.02.2020 11:47		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.30.2020 09:30 % Moisture:
 Seq Number: 3141114 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.7	49.7	mg/kg	10.30.2020 14:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.7	49.7	mg/kg	10.30.2020 14:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.7	49.7	mg/kg	10.30.2020 14:27	U	1
Total GRO-DRO	PHC628	<49.7	49.7	mg/kg	10.30.2020 14:27	U	1
Total TPH	PHC635	<49.7	49.7	mg/kg	10.30.2020 14:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	10.30.2020 14:27	
o-Terphenyl	84-15-1	121	%	70-135	10.30.2020 14:27	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW27**
Lab Sample Id: 676442-010

Matrix: Soil
Date Collected: 10.29.2020 10:13

Date Received: 10.30.2020 08:48
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	10.30.2020 22:06	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	10.30.2020 22:06	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	10.30.2020 22:06	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	10.30.2020 22:06	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	10.30.2020 22:06	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	10.30.2020 22:06	U	1
Total BTEX		<0.00201	0.00201	mg/kg	10.30.2020 22:06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	87	%	70-130	10.30.2020 22:06		
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.30.2020 22:06		



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW28** Matrix: Soil Date Received: 10.30.2020 08:48
 Lab Sample Id: 676442-011 Date Collected: 10.29.2020 10:15 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.02.2020 09:32 % Moisture:
 Seq Number: 3141203 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	72.9	9.94	mg/kg	11.02.2020 11:52		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.30.2020 09:30 % Moisture:
 Seq Number: 3141114 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	10.30.2020 15:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	10.30.2020 15:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	10.30.2020 15:08	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	10.30.2020 15:08	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	10.30.2020 15:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	10.30.2020 15:08	
o-Terphenyl	84-15-1	114	%	70-135	10.30.2020 15:08	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW28**
 Lab Sample Id: 676442-011

Matrix: Soil
 Date Collected: 10.29.2020 10:15

Date Received: 10.30.2020 08:48
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
 Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.30.2020 22:28	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.30.2020 22:28	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.30.2020 22:28	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	10.30.2020 22:28	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.30.2020 22:28	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.30.2020 22:28	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.30.2020 22:28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	88	%	70-130	10.30.2020 22:28		
4-Bromofluorobenzene	460-00-4	90	%	70-130	10.30.2020 22:28		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW29** Matrix: Soil Date Received: 10.30.2020 08:48
 Lab Sample Id: 676442-012 Date Collected: 10.29.2020 10:18 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.02.2020 09:32 % Moisture:
 Seq Number: 3141203 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	41.6	10.1	mg/kg	11.02.2020 12:08		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.30.2020 09:30 % Moisture:
 Seq Number: 3141114 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	10.30.2020 15:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	10.30.2020 15:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	10.30.2020 15:28	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	10.30.2020 15:28	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	10.30.2020 15:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	10.30.2020 15:28	
o-Terphenyl	84-15-1	117	%	70-135	10.30.2020 15:28	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW29**
 Lab Sample Id: 676442-012

Matrix: Soil
 Date Collected: 10.29.2020 10:18

Date Received: 10.30.2020 08:48
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
 Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	10.30.2020 22:50	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	10.30.2020 22:50	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	10.30.2020 22:50	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	10.30.2020 22:50	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	10.30.2020 22:50	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	10.30.2020 22:50	U	1
Total BTEX		<0.00202	0.00202	mg/kg	10.30.2020 22:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	70-130	10.30.2020 22:50	
1,4-Difluorobenzene	540-36-3	105	%	70-130	10.30.2020 22:50	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW30** Matrix: Soil Date Received: 10.30.2020 08:48
 Lab Sample Id: 676442-013 Date Collected: 10.29.2020 10:20 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.02.2020 09:32 % Moisture:
 Seq Number: 3141203 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.0	10.0	mg/kg	11.02.2020 12:14		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 10.30.2020 09:30 % Moisture:
 Seq Number: 3141114 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.30.2020 15:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.30.2020 15:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.30.2020 15:48	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	10.30.2020 15:48	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.30.2020 15:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	10.30.2020 15:48	
o-Terphenyl	84-15-1	110	%	70-135	10.30.2020 15:48	



Certificate of Analytical Results 676442

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW30**
 Lab Sample Id: 676442-013

Matrix: Soil
 Date Collected: 10.29.2020 10:20

Date Received: 10.30.2020 08:48
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 10.30.2020 10:00

% Moisture:
 Basis: Wet Weight

Seq Number: 3141116

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.31.2020 00:08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.31.2020 00:08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.31.2020 00:08	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	10.31.2020 00:08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	10.31.2020 00:08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	10.31.2020 00:08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	10.31.2020 00:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.31.2020 00:08		
4-Bromofluorobenzene	460-00-4	85	%	70-130	10.31.2020 00:08		



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.

Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3141203

MB Sample Id: 7714265-1-BLK

Matrix: Solid

LCS Sample Id: 7714265-1-BKS

Prep Method: E300P

Date Prep: 11.02.2020

LCSD Sample Id: 7714265-1-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	246	98	90-110	4	20	mg/kg	11.02.2020 10:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3141203

Parent Sample Id: 676442-001

Matrix: Soil

MS Sample Id: 676442-001 S

Prep Method: E300P

Date Prep: 11.02.2020

MSD Sample Id: 676442-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2640	203	2830	94	2830	93	90-110	0	20	mg/kg	11.02.2020 10:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3141203

Parent Sample Id: 676442-011

Matrix: Soil

MS Sample Id: 676442-011 S

Prep Method: E300P

Date Prep: 11.02.2020

MSD Sample Id: 676442-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	72.9	199	276	102	274	101	90-110	1	20	mg/kg	11.02.2020 11:57	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141114

MB Sample Id: 7714248-1-BLK

Matrix: Solid

LCS Sample Id: 7714248-1-BKS

Prep Method: SW8015P

Date Prep: 10.30.2020

LCSD Sample Id: 7714248-1-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	1170	117	1130	113	70-135	3	35	mg/kg	10.30.2020 10:07	
Diesel Range Organics (DRO)	<50.0	1000	1340	134	1330	133	70-135	1	35	mg/kg	10.30.2020 10:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		127		126		70-135	%	10.30.2020 10:07
o-Terphenyl	94		132		130		70-135	%	10.30.2020 10:07

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141114

Matrix: Solid

MB Sample Id: 7714248-1-BLK

Prep Method: SW8015P

Date Prep: 10.30.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.30.2020 09:47	

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.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141114

Parent Sample Id: 676442-001

Matrix: Soil

MS Sample Id: 676442-001 S

Prep Method: SW8015P

Date Prep: 10.30.2020

MSD Sample Id: 676442-001 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	875	88	840	84	70-135	4	35	mg/kg	10.30.2020 11:07	
Diesel Range Organics (DRO)	<50.1	1000	967	97	965	97	70-135	0	35	mg/kg	10.30.2020 11:07	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	134		128		70-135	%	10.30.2020 11:07
o-Terphenyl	128		133		70-135	%	10.30.2020 11:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141116

MB Sample Id: 7714253-1-BLK

Matrix: Solid

LCS Sample Id: 7714253-1-BKS

Prep Method: SW5035A

Date Prep: 10.30.2020

LCSD Sample Id: 7714253-1-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	0.105	105	70-130	4	35	mg/kg	10.30.2020 10:15	
Toluene	<0.00200	0.100	0.103	103	0.101	101	70-130	2	35	mg/kg	10.30.2020 10:15	
Ethylbenzene	<0.00200	0.100	0.0932	93	0.0916	92	71-129	2	35	mg/kg	10.30.2020 10:15	
m,p-Xylenes	<0.00400	0.200	0.186	93	0.184	92	70-135	1	35	mg/kg	10.30.2020 10:15	
o-Xylene	<0.00200	0.100	0.0937	94	0.0917	92	71-133	2	35	mg/kg	10.30.2020 10:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		101		101		70-130	%	10.30.2020 10:15
4-Bromofluorobenzene	87		87		85		70-130	%	10.30.2020 10:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141116

Parent Sample Id: 676442-001

Matrix: Soil

MS Sample Id: 676442-001 S

Prep Method: SW5035A

Date Prep: 10.30.2020

MSD Sample Id: 676442-001 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	0.107	107	0.107	107	70-130	0	35	mg/kg	10.30.2020 16:31	
Toluene	<0.00200	0.0998	0.100	100	0.101	101	70-130	1	35	mg/kg	10.30.2020 16:31	
Ethylbenzene	<0.00200	0.0998	0.0896	90	0.0921	92	71-129	3	35	mg/kg	10.30.2020 16:31	
m,p-Xylenes	<0.00399	0.200	0.178	89	0.184	92	70-135	3	35	mg/kg	10.30.2020 16:31	
o-Xylene	<0.00200	0.0998	0.0872	87	0.0895	90	71-133	3	35	mg/kg	10.30.2020 16:31	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		70-130	%	10.30.2020 16:31
4-Bromofluorobenzene	84		85		70-130	%	10.30.2020 16:31

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: 676442

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

www.xenco.com

Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle 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:	dmair@ltenv.com, kmoir@ltenv.com

Program: ☒ UST/PST State of Project: Reporting Level: ☐ Level I ☐ Level II ☐ Level III ☐ Level IV Deliverables: ☐ EDD ☐ ADAPT ☐ Other:	Work Order Comments ☐ RP ☐ Crownfields ☐ RC ☐ Spent Fund

Project Name:		Muy Wayno Frac Pond		Turn Around		ANALYSIS REQUEST												Work Order Notes					
Project Number:		012920104		Routine																			
P.O. Number:		Eddy		Rush:																			
Sampler's Name:		William Mather		Due Date:																			
SAMPLE RECEIPT		Temp Blank:		☒ Yes ☐ No		Wet Ice:		☒ Yes ☐ No															
Temperature (°C):		1.5/0.8				Thermometer ID		1-NM-003															
Received Intact:		☒ Yes ☐ No				Correction Factor:		-0.2															
Cooler Custody Seals:		☒ Yes ☐ No		N/A		Total Containers:		13															
Sample Custody Seals:		☐ Yes ☒ No		N/A																			
Sample Identification		Matrix		Date Sampled		Time Sampled		Depth		Number of Containers													
FS19		S		10/29/2020		9:32		4'		1												Composite	
FS20		S		10/29/2020		9:34		4'		1												Composite	
FS21		S		10/29/2020		9:36		4'		1												Composite	
FS22		S		10/29/2020		9:38		4'		1												Composite	
FS23		S		10/29/2020		9:41		4'		1												Composite	
SW23		S		10/29/2020		9:45		0-4'		1												Composite	
SW24		S		10/29/2020		9:48		0-4'		1												Composite	
SW25		S		10/29/2020		9:50		0-4'		1												Composite	
SW26		S		10/29/2020		9:52		0-4'		1												Composite	
SW27		S		10/29/2020		10:13		0-4'		1												Composite	
										TPH (EPA 8015)													
										BTEX (EPA 0-8021)													
										Chloride (EPA 300.0)													

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
		0847			

Chain of Custody

Work Order No: 676442

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:	jwmather@lternv.com, dmoir@lternv.com

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

[illegible]

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 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.

Circle Method(s) and Metal(s) to be analyzed	Total	200.7 / 6010	200.8 / 6020:
8RCRA 13PPM	Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn	
TCLP / SPLP 6010: 8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U		1631 / 245.1 / 7470 / 7471 : Hg

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquish:

Received by: (Signature)

Date/Time

Clare Appleton

10.30-20 0848

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466

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Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 10.30.2020 08.48.00 AM

Work Order #: 676442

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)?	.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

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:



Cloe Clifton

Date: 10.30.2020

Checklist reviewed by:



Jessica Kramer

Date: 10.30.2020

Certificate of Analysis Summary 676778



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, NM

Date Received in Lab: Tue 11.03.2020 12:20
Report Date: 11.05.2020 07:58
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	676778-001	676778-002	676778-003	676778-004	676778-005	676778-006
	<i>Field Id:</i>	FS24	FS25	FS26	FS27	FS28	FS29
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	4- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	10.30.2020 09:56	10.30.2020 09:57	10.30.2020 09:59	10.30.2020 10:01	10.30.2020 10:06	10.30.2020 10:07
BTEX by EPA 8021B	<i>Extracted:</i>	11.03.2020 14:07	11.03.2020 14:07	11.03.2020 14:07	11.03.2020 14:07	11.03.2020 14:07	11.03.2020 14:07
	<i>Analyzed:</i>	11.03.2020 20:02	11.03.2020 20:24	11.03.2020 20:46	11.03.2020 21:09	11.03.2020 22:26	11.03.2020 22:49
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
m,p-Xylenes		<0.00399 0.00399	<0.00397 0.00397	<0.00399 0.00399	<0.00401 0.00401	<0.00402 0.00402	<0.00404 0.00404
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 15:00
	<i>Analyzed:</i>	11.03.2020 18:38	11.03.2020 18:44	11.03.2020 18:49	11.03.2020 18:55	11.03.2020 19:11	11.03.2020 19:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		3840 49.6	860 10.0	2590 49.9	3500 50.1	1260 49.5	2140 50.4
TPH by SW8015 Mod	<i>Extracted:</i>	11.03.2020 13:00	11.03.2020 13:00	11.03.2020 13:00	11.03.2020 13:00	11.03.2020 13:00	11.03.2020 13:00
	<i>Analyzed:</i>	11.03.2020 18:22	11.03.2020 18:43	11.03.2020 19:03	11.03.2020 19:24	11.03.2020 19:44	11.03.2020 20:04
	<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	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9
Total GRO-DRO		<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9
Total TPH		<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<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

Certificate of Analysis Summary 676778



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, NM

Date Received in Lab: Tue 11.03.2020 12:20
Report Date: 11.05.2020 07:58
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	676778-007	676778-008	676778-009	676778-010	676778-011	676778-012
	<i>Field Id:</i>	FS30	FS31	FS32	SW31	SW32	SW33
	<i>Depth:</i>	4- ft	4- ft	4- ft	0-4 ft	0-4 ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	10.30.2020 10:09	10.30.2020 10:11	10.30.2020 10:13	10.30.2020 10:19	10.30.2020 10:21	10.30.2020 10:24
BTEX by EPA 8021B	<i>Extracted:</i>	11.03.2020 14:07	11.03.2020 14:07	11.03.2020 16:11	11.03.2020 16:11	11.03.2020 16:11	11.03.2020 16:11
	<i>Analyzed:</i>	11.03.2020 23:11	11.03.2020 23:34	11.04.2020 01:00	11.04.2020 01:23	11.04.2020 01:45	11.04.2020 02:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00397 0.00397	<0.00396 0.00396	<0.00399 0.00399	<0.00403 0.00403	<0.00401 0.00401
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 15:00
	<i>Analyzed:</i>	11.03.2020 19:22	11.03.2020 19:27	11.03.2020 19:33	11.03.2020 19:38	11.03.2020 19:44	11.03.2020 19:49
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		5130 50.0	4360 50.2	2640 49.7	34.7 9.94	393 9.90	197 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	11.03.2020 13:00	11.03.2020 13:00	11.03.2020 13:00	11.03.2020 13:00	11.03.2020 13:00	11.03.2020 13:00
	<i>Analyzed:</i>	11.03.2020 20:44	11.03.2020 21:05	11.03.2020 21:25	11.03.2020 21:45	11.03.2020 22:06	11.03.2020 22:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.2 50.2	<49.8 49.8	<50.2 50.2	<49.9 49.9	<49.8 49.8
Diesel Range Organics (DRO)		<50.2 50.2	<50.2 50.2	<49.8 49.8	<50.2 50.2	66.6 49.9	71.3 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.2 50.2	<49.8 49.8	<50.2 50.2	<49.9 49.9	<49.8 49.8
Total GRO-DRO		<50.2 50.2	<50.2 50.2	<49.8 49.8	<50.2 50.2	66.6 49.9	71.3 49.8
Total TPH		<50.2 50.2	<50.2 50.2	<49.8 49.8	<50.2 50.2	66.6 49.9	71.3 49.8

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 676778



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, NM

Date Received in Lab: Tue 11.03.2020 12:20
Report Date: 11.05.2020 07:58
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	676778-013	676778-014	676778-015	676778-016	676778-017	
	<i>Field Id:</i>	SW34	SW35	SW36	SW37	SW38	
	<i>Depth:</i>	0-4 ft	0-4 ft	0-4 ft	0-4 ft	0-4 ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	10.30.2020 10:26	10.30.2020 10:29	10.30.2020 10:30	10.30.2020 10:33	10.30.2020 10:35	
BTEX by EPA 8021B	<i>Extracted:</i>	11.03.2020 16:11	11.03.2020 16:11	11.03.2020 16:11	11.03.2020 16:11	11.03.2020 16:11	
	<i>Analyzed:</i>	11.04.2020 02:30	11.04.2020 02:52	11.04.2020 03:15	11.04.2020 03:37	11.04.2020 04:00	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398	<0.00397 0.00397	<0.00398 0.00398	<0.00399 0.00399	
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	
Chloride by EPA 300	<i>Extracted:</i>	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 15:00	
	<i>Analyzed:</i>	11.03.2020 20:17	11.03.2020 20:22	11.03.2020 20:28	11.03.2020 20:33	11.03.2020 20:38	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		335 9.98	98.7 9.96	58.7 9.94	48.7 10.0	151 9.98	
TPH by SW8015 Mod	<i>Extracted:</i>	11.03.2020 13:00	11.03.2020 13:00	11.03.2020 13:00	11.03.2020 13:00	11.03.2020 13:27	
	<i>Analyzed:</i>	11.03.2020 22:46	11.03.2020 23:06	11.03.2020 23:27	11.03.2020 23:47	11.03.2020 23:47	
	<i>Units/RL:</i>	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	52.5 49.8	53.5 50.0	<49.9 49.9	
Diesel Range Organics (DRO)		<50.1 50.1	<50.2 50.2	<49.8 49.8	<50.0 50.0	<49.9 49.9	
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.2 50.2	<49.8 49.8	<50.0 50.0	<49.9 49.9	
Total GRO-DRO		<50.1 50.1	<50.2 50.2	52.5 49.8	53.5 50.0	<49.9 49.9	
Total TPH		<50.1 50.1	<50.2 50.2	52.5 49.8	53.5 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 676778

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.05.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.05.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **676778**

Muy Wayno Frac Pond

Project Address: Eddy County, NM

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) 676778. 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. 676778 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 676778****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS24	S	10.30.2020 09:56	4 ft	676778-001
FS25	S	10.30.2020 09:57	4 ft	676778-002
FS26	S	10.30.2020 09:59	4 ft	676778-003
FS27	S	10.30.2020 10:01	4 ft	676778-004
FS28	S	10.30.2020 10:06	4 ft	676778-005
FS29	S	10.30.2020 10:07	4 ft	676778-006
FS30	S	10.30.2020 10:09	4 ft	676778-007
FS31	S	10.30.2020 10:11	4 ft	676778-008
FS32	S	10.30.2020 10:13	4 ft	676778-009
SW31	S	10.30.2020 10:19	0 - 4 ft	676778-010
SW32	S	10.30.2020 10:21	0 - 4 ft	676778-011
SW33	S	10.30.2020 10:24	0 - 4 ft	676778-012
SW34	S	10.30.2020 10:26	0 - 4 ft	676778-013
SW35	S	10.30.2020 10:29	0 - 4 ft	676778-014
SW36	S	10.30.2020 10:30	0 - 4 ft	676778-015
SW37	S	10.30.2020 10:33	0 - 4 ft	676778-016
SW38	S	10.30.2020 10:35	0 - 4 ft	676778-017



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 676778

Report Date: 11.05.2020
Date Received: 11.03.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 676778

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS24**
Lab Sample Id: 676778-001

Matrix: Soil
Date Collected: 10.30.2020 09:56

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141307

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3840	49.6	mg/kg	11.03.2020 18:38		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.03.2020 13:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141296

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.03.2020 18:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.03.2020 18:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.03.2020 18:22	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.03.2020 18:22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.03.2020 18:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.03.2020 18:22	
o-Terphenyl	84-15-1	126	%	70-135	11.03.2020 18:22	



Certificate of Analytical Results 676778

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS24**
Lab Sample Id: 676778-001

Matrix: Soil
Date Collected: 10.30.2020 09:56

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 14:07

% Moisture:
Basis: Wet Weight

Seq Number: 3141303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.03.2020 20:02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.03.2020 20:02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.03.2020 20:02	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.03.2020 20:02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.03.2020 20:02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.03.2020 20:02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.03.2020 20:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.03.2020 20:02		
4-Bromofluorobenzene	460-00-4	94	%	70-130	11.03.2020 20:02		



Certificate of Analytical Results 676778

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS25** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676778-002 Date Collected: 10.30.2020 09:57 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 15:00 % Moisture:
 Seq Number: 3141307 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	860	10.0	mg/kg	11.03.2020 18:44		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.03.2020 13:00 % Moisture:
 Seq Number: 3141296 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.03.2020 18:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.03.2020 18:43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.03.2020 18:43	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.03.2020 18:43	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.03.2020 18:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.03.2020 18:43	
o-Terphenyl	84-15-1	116	%	70-135	11.03.2020 18:43	



Certificate of Analytical Results 676778

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS25**
Lab Sample Id: 676778-002

Matrix: Soil
Date Collected: 10.30.2020 09:57

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 14:07

% Moisture:
Basis: Wet Weight

Seq Number: 3141303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.03.2020 20:24	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.03.2020 20:24	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.03.2020 20:24	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.03.2020 20:24	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.03.2020 20:24	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.03.2020 20:24	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.03.2020 20:24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.03.2020 20:24		
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.03.2020 20:24		



Certificate of Analytical Results 676778

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS26**
Lab Sample Id: 676778-003

Matrix: Soil
Date Collected: 10.30.2020 09:59

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141307

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2590	49.9	mg/kg	11.03.2020 18:49		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.03.2020 13:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141296

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.03.2020 19:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.03.2020 19:03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.03.2020 19:03	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.03.2020 19:03	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.03.2020 19:03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	11.03.2020 19:03	
o-Terphenyl	84-15-1	116	%	70-135	11.03.2020 19:03	



Certificate of Analytical Results 676778

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS26**
Lab Sample Id: 676778-003

Matrix: Soil
Date Collected: 10.30.2020 09:59

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 14:07

% Moisture:
Basis: Wet Weight

Seq Number: 3141303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.03.2020 20:46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.03.2020 20:46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.03.2020 20:46	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.03.2020 20:46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.03.2020 20:46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.03.2020 20:46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.03.2020 20:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.03.2020 20:46	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.03.2020 20:46	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS27** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676778-004 Date Collected: 10.30.2020 10:01 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 15:00 % Moisture:
 Seq Number: 3141307 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3500	50.1	mg/kg	11.03.2020 18:55		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.03.2020 13:00 % Moisture:
 Seq Number: 3141296 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.03.2020 19:24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.03.2020 19:24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.03.2020 19:24	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.03.2020 19:24	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.03.2020 19:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.03.2020 19:24	
o-Terphenyl	84-15-1	113	%	70-135	11.03.2020 19:24	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS27**
Lab Sample Id: 676778-004

Matrix: Soil
Date Collected: 10.30.2020 10:01

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 14:07

% Moisture:
Basis: Wet Weight

Seq Number: 3141303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.03.2020 21:09	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.03.2020 21:09	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.03.2020 21:09	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.03.2020 21:09	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.03.2020 21:09	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.03.2020 21:09	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.03.2020 21:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.03.2020 21:09	
4-Bromofluorobenzene	460-00-4	89	%	70-130	11.03.2020 21:09	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS28** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676778-005 Date Collected: 10.30.2020 10:06 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 15:00 % Moisture:
 Seq Number: 3141307 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1260	49.5	mg/kg	11.03.2020 19:11		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.03.2020 13:00 % Moisture:
 Seq Number: 3141296 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.03.2020 19:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.03.2020 19:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.03.2020 19:44	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.03.2020 19:44	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.03.2020 19:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.03.2020 19:44	
o-Terphenyl	84-15-1	113	%	70-135	11.03.2020 19:44	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS28**
Lab Sample Id: 676778-005

Matrix: Soil
Date Collected: 10.30.2020 10:06

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 14:07

% Moisture:
Basis: Wet Weight

Seq Number: 3141303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.03.2020 22:26	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.03.2020 22:26	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.03.2020 22:26	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.03.2020 22:26	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.03.2020 22:26	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.03.2020 22:26	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.03.2020 22:26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	87	%	70-130	11.03.2020 22:26		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.03.2020 22:26		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS29**
Lab Sample Id: 676778-006

Matrix: Soil
Date Collected: 10.30.2020 10:07

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141307

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2140	50.4	mg/kg	11.03.2020 19:16		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.03.2020 13:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141296

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.03.2020 20:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.03.2020 20:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.03.2020 20:04	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.03.2020 20:04	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.03.2020 20:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.03.2020 20:04	
o-Terphenyl	84-15-1	108	%	70-135	11.03.2020 20:04	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS29**
 Lab Sample Id: 676778-006

Matrix: Soil
 Date Collected: 10.30.2020 10:07

Date Received: 11.03.2020 12:20
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 14:07

% Moisture:
 Basis: Wet Weight

Seq Number: 3141303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.03.2020 22:49	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.03.2020 22:49	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.03.2020 22:49	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.03.2020 22:49	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.03.2020 22:49	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.03.2020 22:49	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.03.2020 22:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.03.2020 22:49		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.03.2020 22:49		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS30** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676778-007 Date Collected: 10.30.2020 10:09 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 15:00 % Moisture:
 Seq Number: 3141307 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5130	50.0	mg/kg	11.03.2020 19:22		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.03.2020 13:00 % Moisture:
 Seq Number: 3141296 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.03.2020 20:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.03.2020 20:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.03.2020 20:44	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.03.2020 20:44	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.03.2020 20:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.03.2020 20:44	
o-Terphenyl	84-15-1	109	%	70-135	11.03.2020 20:44	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS30**
 Lab Sample Id: 676778-007

Matrix: Soil
 Date Collected: 10.30.2020 10:09

Date Received: 11.03.2020 12:20
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 14:07

% Moisture:
 Basis: Wet Weight

Seq Number: 3141303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.03.2020 23:11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.03.2020 23:11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.03.2020 23:11	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.03.2020 23:11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.03.2020 23:11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.03.2020 23:11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.03.2020 23:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.03.2020 23:11	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.03.2020 23:11	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS31**
Lab Sample Id: 676778-008

Matrix: Soil
Date Collected: 10.30.2020 10:11

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141307

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4360	50.2	mg/kg	11.03.2020 19:27		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.03.2020 13:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141296

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.03.2020 21:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.03.2020 21:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.03.2020 21:05	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.03.2020 21:05	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.03.2020 21:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.03.2020 21:05	
o-Terphenyl	84-15-1	113	%	70-135	11.03.2020 21:05	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS31**
Lab Sample Id: 676778-008

Matrix: Soil
Date Collected: 10.30.2020 10:11

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 14:07

% Moisture:
Basis: Wet Weight

Seq Number: 3141303

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.03.2020 23:34	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.03.2020 23:34	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.03.2020 23:34	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.03.2020 23:34	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.03.2020 23:34	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.03.2020 23:34	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.03.2020 23:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.03.2020 23:34		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.03.2020 23:34		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS32** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676778-009 Date Collected: 10.30.2020 10:13 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 15:00 % Moisture:
 Seq Number: 3141307 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2640	49.7	mg/kg	11.03.2020 19:33		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.03.2020 13:00 % Moisture:
 Seq Number: 3141296 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.03.2020 21:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.03.2020 21:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.03.2020 21:25	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.03.2020 21:25	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.03.2020 21:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.03.2020 21:25	
o-Terphenyl	84-15-1	117	%	70-135	11.03.2020 21:25	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS32**
Lab Sample Id: 676778-009

Matrix: Soil
Date Collected: 10.30.2020 10:13

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.04.2020 01:00	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.04.2020 01:00	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.04.2020 01:00	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.04.2020 01:00	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.04.2020 01:00	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.04.2020 01:00	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.04.2020 01:00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.04.2020 01:00		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.04.2020 01:00		



Certificate of Analytical Results 676778

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW31**
Lab Sample Id: 676778-010

Matrix: Soil
Date Collected: 10.30.2020 10:19

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141307

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.7	9.94	mg/kg	11.03.2020 19:38		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.03.2020 13:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141296

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.03.2020 21:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.03.2020 21:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.03.2020 21:45	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.03.2020 21:45	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.03.2020 21:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.03.2020 21:45	
o-Terphenyl	84-15-1	120	%	70-135	11.03.2020 21:45	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW31**
Lab Sample Id: 676778-010

Matrix: Soil
Date Collected: 10.30.2020 10:19

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.04.2020 01:23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.04.2020 01:23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.04.2020 01:23	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.04.2020 01:23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.04.2020 01:23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.04.2020 01:23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.04.2020 01:23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.04.2020 01:23		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.04.2020 01:23		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW32**
Lab Sample Id: 676778-011

Matrix: Soil
Date Collected: 10.30.2020 10:21

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141307

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	393	9.90	mg/kg	11.03.2020 19:44		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.03.2020 13:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141296

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.03.2020 22:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	66.6	49.9	mg/kg	11.03.2020 22:06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.03.2020 22:06	U	1
Total GRO-DRO	PHC628	66.6	49.9	mg/kg	11.03.2020 22:06		1
Total TPH	PHC635	66.6	49.9	mg/kg	11.03.2020 22:06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	11.03.2020 22:06	
o-Terphenyl	84-15-1	120	%	70-135	11.03.2020 22:06	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW32**
Lab Sample Id: 676778-011

Matrix: Soil
Date Collected: 10.30.2020 10:21

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.04.2020 01:45	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.04.2020 01:45	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.04.2020 01:45	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.04.2020 01:45	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.04.2020 01:45	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.04.2020 01:45	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.04.2020 01:45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.04.2020 01:45		
1,4-Difluorobenzene	540-36-3	108	%	70-130	11.04.2020 01:45		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW33** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676778-012 Date Collected: 10.30.2020 10:24 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 15:00 % Moisture:
 Seq Number: 3141307 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	197	10.0	mg/kg	11.03.2020 19:49		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.03.2020 13:00 % Moisture:
 Seq Number: 3141296 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.03.2020 22:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	71.3	49.8	mg/kg	11.03.2020 22:26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.03.2020 22:26	U	1
Total GRO-DRO	PHC628	71.3	49.8	mg/kg	11.03.2020 22:26		1
Total TPH	PHC635	71.3	49.8	mg/kg	11.03.2020 22:26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.03.2020 22:26	
o-Terphenyl	84-15-1	111	%	70-135	11.03.2020 22:26	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW33**
Lab Sample Id: 676778-012

Matrix: Soil
Date Collected: 10.30.2020 10:24

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.04.2020 02:08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.04.2020 02:08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.04.2020 02:08	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.04.2020 02:08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.04.2020 02:08	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.04.2020 02:08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.04.2020 02:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.04.2020 02:08		
1,4-Difluorobenzene	540-36-3	108	%	70-130	11.04.2020 02:08		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW34** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676778-013 Date Collected: 10.30.2020 10:26 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 15:00 % Moisture:
 Seq Number: 3141307 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	335	9.98	mg/kg	11.03.2020 20:17		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.03.2020 13:00 % Moisture:
 Seq Number: 3141296 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.03.2020 22:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.03.2020 22:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.03.2020 22:46	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.03.2020 22:46	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.03.2020 22:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	11.03.2020 22:46	
o-Terphenyl	84-15-1	124	%	70-135	11.03.2020 22:46	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW34**
Lab Sample Id: 676778-013

Matrix: Soil
Date Collected: 10.30.2020 10:26

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.04.2020 02:30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.04.2020 02:30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.04.2020 02:30	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.04.2020 02:30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.04.2020 02:30	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.04.2020 02:30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.04.2020 02:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.04.2020 02:30	
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.04.2020 02:30	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW35** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676778-014 Date Collected: 10.30.2020 10:29 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 15:00 % Moisture:
 Seq Number: 3141307 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	98.7	9.96	mg/kg	11.03.2020 20:22		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.03.2020 13:00 % Moisture:
 Seq Number: 3141296 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.03.2020 23:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.03.2020 23:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.03.2020 23:06	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.03.2020 23:06	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.03.2020 23:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	11.03.2020 23:06	
o-Terphenyl	84-15-1	111	%	70-135	11.03.2020 23:06	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW35**
Lab Sample Id: 676778-014

Matrix: Soil
Date Collected: 10.30.2020 10:29

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.04.2020 02:52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.04.2020 02:52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.04.2020 02:52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.04.2020 02:52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.04.2020 02:52	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.04.2020 02:52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.04.2020 02:52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.04.2020 02:52		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.04.2020 02:52		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW36** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676778-015 Date Collected: 10.30.2020 10:30 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 15:00 % Moisture:
 Seq Number: 3141307 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	58.7	9.94	mg/kg	11.03.2020 20:28		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.03.2020 13:00 % Moisture:
 Seq Number: 3141296 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	52.5	49.8	mg/kg	11.03.2020 23:27		1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.03.2020 23:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.03.2020 23:27	U	1
Total GRO-DRO	PHC628	52.5	49.8	mg/kg	11.03.2020 23:27		1
Total TPH	PHC635	52.5	49.8	mg/kg	11.03.2020 23:27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	11.03.2020 23:27	
o-Terphenyl	84-15-1	120	%	70-135	11.03.2020 23:27	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW36**
Lab Sample Id: 676778-015

Matrix: Soil
Date Collected: 10.30.2020 10:30

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.04.2020 03:15	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.04.2020 03:15	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.04.2020 03:15	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.04.2020 03:15	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.04.2020 03:15	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.04.2020 03:15	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.04.2020 03:15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.04.2020 03:15		
1,4-Difluorobenzene	540-36-3	108	%	70-130	11.04.2020 03:15		



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Muy Wayno Frac Pond

Sample Id: **SW37** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676778-016 Date Collected: 10.30.2020 10:33 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 15:00 % Moisture:
 Seq Number: 3141307 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	48.7	10.0	mg/kg	11.03.2020 20:33		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.03.2020 13:00 % Moisture:
 Seq Number: 3141296 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	53.5	50.0	mg/kg	11.03.2020 23:47		1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.03.2020 23:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.03.2020 23:47	U	1
Total GRO-DRO	PHC628	53.5	50.0	mg/kg	11.03.2020 23:47		1
Total TPH	PHC635	53.5	50.0	mg/kg	11.03.2020 23:47		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.03.2020 23:47	
o-Terphenyl	84-15-1	120	%	70-135	11.03.2020 23:47	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW37**
Lab Sample Id: 676778-016

Matrix: Soil
Date Collected: 10.30.2020 10:33

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.04.2020 03:37	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.04.2020 03:37	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.04.2020 03:37	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.04.2020 03:37	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.04.2020 03:37	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.04.2020 03:37	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.04.2020 03:37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.04.2020 03:37		
1,4-Difluorobenzene	540-36-3	93	%	70-130	11.04.2020 03:37		



Certificate of Analytical Results 676778

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW38**
Lab Sample Id: 676778-017

Matrix: Soil
Date Collected: 10.30.2020 10:35

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141307

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	151	9.98	mg/kg	11.03.2020 20:38		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.03.2020 13:27

% Moisture:
Basis: Wet Weight

Seq Number: 3141297

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.03.2020 23:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.03.2020 23:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.03.2020 23:47	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.03.2020 23:47	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.03.2020 23:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	132	%	70-135	11.03.2020 23:47	
o-Terphenyl	84-15-1	129	%	70-135	11.03.2020 23:47	



Certificate of Analytical Results 676778

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW38**
 Lab Sample Id: 676778-017

Matrix: Soil
 Date Collected: 10.30.2020 10:35

Date Received: 11.03.2020 12:20
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
 Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.04.2020 04:00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.04.2020 04:00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.04.2020 04:00	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.04.2020 04:00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.04.2020 04:00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.04.2020 04:00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.04.2020 04:00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	11.04.2020 04:00		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.04.2020 04:00		

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.

Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3141307

MB Sample Id: 7714457-1-BLK

Matrix: Solid

LCS Sample Id: 7714457-1-BKS

Prep Method: E300P

Date Prep: 11.03.2020

LCSD Sample Id: 7714457-1-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	260	104	90-110	0	20	mg/kg	11.03.2020 18:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3141307

Parent Sample Id: 676767-003

Matrix: Soil

MS Sample Id: 676767-003 S

Prep Method: E300P

Date Prep: 11.03.2020

MSD Sample Id: 676767-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	429	199	630	101	631	102	90-110	0	20	mg/kg	11.03.2020 18:27	

Analytical Method: Chloride by EPA 300

Seq Number: 3141307

Parent Sample Id: 676778-012

Matrix: Soil

MS Sample Id: 676778-012 S

Prep Method: E300P

Date Prep: 11.03.2020

MSD Sample Id: 676778-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	197	201	414	108	414	108	90-110	0	20	mg/kg	11.03.2020 19:55	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141296

MB Sample Id: 7714454-1-BLK

Matrix: Solid

LCS Sample Id: 7714454-1-BKS

Prep Method: SW8015P

Date Prep: 11.03.2020

LCSD Sample Id: 7714454-1-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	909	91	883	88	70-135	3	35	mg/kg	11.03.2020 15:40	
Diesel Range Organics (DRO)	<50.0	1000	1010	101	1000	100	70-135	1	35	mg/kg	11.03.2020 15:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		123		108		70-135	%	11.03.2020 15:40
o-Terphenyl	101		99		99		70-135	%	11.03.2020 15:40

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141297

MB Sample Id: 7714426-1-BLK

Matrix: Solid

LCS Sample Id: 7714426-1-BKS

Prep Method: SW8015P

Date Prep: 11.03.2020

LCSD Sample Id: 7714426-1-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	1180	118	1130	113	70-135	4	35	mg/kg	11.03.2020 15:40	
Diesel Range Organics (DRO)	<50.0	1000	1250	125	1200	120	70-135	4	35	mg/kg	11.03.2020 15:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		130		126		70-135	%	11.03.2020 15:40
o-Terphenyl	117		120		118		70-135	%	11.03.2020 15:40

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.

Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141296

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.03.2020

MB Sample Id: 7714454-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.03.2020 15:20	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141297

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.03.2020

MB Sample Id: 7714426-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.03.2020 15:20	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141296

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.03.2020

Parent Sample Id: 676721-001

MS Sample Id: 676721-001 S

MSD Sample Id: 676721-001 SD

Parameter

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	903	91	982	98	70-135	8	35	mg/kg	11.03.2020 16:41	
Diesel Range Organics (DRO)	<49.9	997	1010	101	1070	107	70-135	6	35	mg/kg	11.03.2020 16:41	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		128		70-135	%	11.03.2020 16:41
o-Terphenyl	114		117		70-135	%	11.03.2020 16:41

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141297

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.03.2020

Parent Sample Id: 676707-001

MS Sample Id: 676707-001 S

MSD Sample Id: 676707-001 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)	<50.3	1010	1130	112	1050	105	70-135	7	35	mg/kg	11.03.2020 16:41	
Diesel Range Organics (DRO)	<50.3	1010	1150	114	1140	114	70-135	1	35	mg/kg	11.03.2020 16:41	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		133		70-135	%	11.03.2020 16:41
o-Terphenyl	123		105		70-135	%	11.03.2020 16:41

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.
Muy Wayno Frac Pond

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141303

Matrix: Solid

Prep Method: SW5035A

Date Prep: 11.03.2020

MB Sample Id: 7714462-1-BLK

LCS Sample Id: 7714462-1-BKS

LCSD Sample Id: 7714462-1-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	0.0975	98	0.0945	95	70-130	3	35	mg/kg	11.03.2020 15:44	
Toluene	<0.00200	0.100	0.0952	95	0.0926	93	70-130	3	35	mg/kg	11.03.2020 15:44	
Ethylbenzene	<0.00200	0.100	0.0880	88	0.0861	86	71-129	2	35	mg/kg	11.03.2020 15:44	
m,p-Xylenes	<0.00400	0.200	0.178	89	0.173	87	70-135	3	35	mg/kg	11.03.2020 15:44	
o-Xylene	<0.00200	0.100	0.0872	87	0.0851	85	71-133	2	35	mg/kg	11.03.2020 15:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		100		100		70-130	%	11.03.2020 15:44
4-Bromofluorobenzene	88		85		85		70-130	%	11.03.2020 15:44

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141313

Matrix: Solid

Prep Method: SW5035A

Date Prep: 11.03.2020

MB Sample Id: 7714467-1-BLK

LCS Sample Id: 7714467-1-BKS

LCSD Sample Id: 7714467-1-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	0.0865	87	0.0906	91	70-130	5	35	mg/kg	11.03.2020 22:56	
Toluene	<0.00200	0.100	0.0841	84	0.0865	87	70-130	3	35	mg/kg	11.03.2020 22:56	
Ethylbenzene	<0.00200	0.100	0.0856	86	0.0907	91	71-129	6	35	mg/kg	11.03.2020 22:56	
m,p-Xylenes	<0.00400	0.200	0.175	88	0.185	93	70-135	6	35	mg/kg	11.03.2020 22:56	
o-Xylene	<0.00200	0.100	0.0876	88	0.0889	89	71-133	1	35	mg/kg	11.03.2020 22:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		97		102		70-130	%	11.03.2020 22:56
4-Bromofluorobenzene	108		104		110		70-130	%	11.03.2020 22:56

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141303

Matrix: Soil

Prep Method: SW5035A

Date Prep: 11.03.2020

Parent Sample Id: 676707-001

MS Sample Id: 676707-001 S

MSD Sample Id: 676707-001 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	0.129	128	0.117	117	70-130	10	35	mg/kg	11.03.2020 16:29	
Toluene	<0.00201	0.101	0.123	122	0.111	111	70-130	10	35	mg/kg	11.03.2020 16:29	
Ethylbenzene	<0.00201	0.101	0.111	110	0.0997	100	71-129	11	35	mg/kg	11.03.2020 16:29	
m,p-Xylenes	<0.00402	0.201	0.225	112	0.200	100	70-135	12	35	mg/kg	11.03.2020 16:29	
o-Xylene	<0.00201	0.101	0.109	108	0.0983	98	71-133	10	35	mg/kg	11.03.2020 16:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		99		70-130	%	11.03.2020 16:29
4-Bromofluorobenzene	86		85		70-130	%	11.03.2020 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



LT Environmental, Inc.
Muy Wayno Frac Pond

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141313

Parent Sample Id: 676778-009

Matrix: Soil

MS Sample Id: 676778-009 S

Prep Method: SW5035A

Date Prep: 11.03.2020

MSD Sample Id: 676778-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.100	101	0.108	108	70-130	8	35	mg/kg	11.03.2020 23:41	
Toluene	<0.00199	0.0994	0.0891	90	0.0983	99	70-130	10	35	mg/kg	11.03.2020 23:41	
Ethylbenzene	<0.00199	0.0994	0.0862	87	0.100	100	71-129	15	35	mg/kg	11.03.2020 23:41	
m,p-Xylenes	<0.00398	0.199	0.173	87	0.203	102	70-135	16	35	mg/kg	11.03.2020 23:41	
o-Xylene	<0.00199	0.0994	0.0918	92	0.102	102	71-133	11	35	mg/kg	11.03.2020 23:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		104		70-130	%	11.03.2020 23:41
4-Bromofluorobenzene	110		111		70-130	%	11.03.2020 23:41

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



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

Chain of Custody

Work Order No: 1076778

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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:	wmather@ltenv.com, dmoir@ltenv.com

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

Project Name:	Muy Wayne Frac Pond	Turn Around	
Project Number:	012920104	Routine	☒
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT				Temp Blank:		Wet Ice:		Thermometer ID	
Temperature (°C):	1.3 / 1.2	Yes	No						TMM007
Received Intact:	Yes	No							
Cooler Custody Seals:	Yes	No							Correction Factor: -0.2
Sample Custody Seals:	Yes	No							Total Containers: 17

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)								
SW32	S	10/30/2020	10:21	0-4'	1	X	X	X								Composite
SW33	S	10/30/2020	10:24	0-4'	1	X	X	X								Composite
SW34	S	10/30/2020	10:26	0-4'	1	X	X	X								Composite
SW35	S	10/30/2020	10:29	0-4'	1	X	X	X								Composite
SW36	S	10/30/2020	10:30	0-4'	1	X	X	X								Composite
SW37	S	10/30/2020	10:33	0-4'	1	X	X	X								Composite
SW38	S	10/30/2020	10:35	0-4'	1	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		TCCLP / SPLP 6010:	8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U											

Office: 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>	11/3/20 1220	<i>[Signature]</i>	<i>[Signature]</i>	11/3/20 12:20



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 775-392-7550 Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813)
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Chain of Custody

Work Order No: 676770

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

ANALYSIS REQUEST

Work Order Notes

[illegible][illegible][illegible][illegible]

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

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 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 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 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 service.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	11/3/20 1220	<i>[Signature]</i>	<i>[Signature]</i>	11/3/20 12:20

Revised Date 05/14/18 Rev. 2017

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.03.2020 12.20.00 PM

Work Order #: 676778

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T_NM_007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

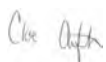
Samples received in bulk containers.

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Cloe Clifton

Date: 11.03.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.04.2020

Certificate of Analysis Summary 676786



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, NM

Date Received in Lab: Tue 11.03.2020 12:20
Report Date: 11.05.2020 10:52
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	676786-001	676786-002	676786-003	676786-004	676786-005	676786-006
	<i>Field Id:</i>	FS30	FS31	FS32	SW39	SW40	SW41
	<i>Depth:</i>	4- ft	4- ft	4- ft	0-4 ft	0-4 ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.02.2020 12:08	11.02.2020 12:12	11.02.2020 12:15	11.02.2020 12:45	11.02.2020 13:38	11.02.2020 12:48
BTEX by EPA 8021B	<i>Extracted:</i>	11.03.2020 16:11	11.03.2020 16:11	11.03.2020 16:11	11.03.2020 16:11	11.03.2020 16:11	11.03.2020 16:11
	<i>Analyzed:</i>	11.04.2020 04:22	11.04.2020 04:44	11.04.2020 06:04	11.04.2020 06:27	11.04.2020 06:49	11.04.2020 07:11
	<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	<0.00202 0.00202	<0.00198 0.00198
Toluene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198
m,p-Xylenes		<0.00403 0.00403	<0.00401 0.00401	<0.00399 0.00399	<0.00398 0.00398	<0.00404 0.00404	<0.00396 0.00396
o-Xylene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198
Total Xylenes		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198
Total BTEX		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00198 0.00198
Chloride by EPA 300	<i>Extracted:</i>	11.03.2020 15:00	11.03.2020 15:00	11.03.2020 17:13	11.03.2020 17:13	11.03.2020 17:13	11.03.2020 17:13
	<i>Analyzed:</i>	11.03.2020 20:44	11.03.2020 20:49	11.03.2020 21:39	11.03.2020 21:44	11.03.2020 21:50	11.03.2020 21:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		4020 49.7	2130 50.3	2070 49.6	231 9.98	749 10.0	578 9.94
TPH by SW8015 Mod	<i>Extracted:</i>	11.04.2020 13:00	11.04.2020 13:00	11.04.2020 13:00	11.04.2020 13:00	11.04.2020 13:00	11.04.2020 13:00
	<i>Analyzed:</i>	11.04.2020 16:26	11.04.2020 17:27	11.04.2020 17:47	11.04.2020 18:07	11.04.2020 18:27	11.04.2020 18:48
	<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	<50.2 50.2	<50.3 50.3	<49.9 49.9	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<50.2 50.2	<50.3 50.3	<49.9 49.9	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.2 50.2	<50.3 50.3	<49.9 49.9	<50.0 50.0	<50.0 50.0
Total GRO-DRO		<50.0 50.0	<50.2 50.2	<50.3 50.3	<49.9 49.9	<50.0 50.0	<50.0 50.0
Total TPH		<50.0 50.0	<50.2 50.2	<50.3 50.3	<49.9 49.9	<50.0 50.0	<50.0 50.0

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 676786



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, NM

Date Received in Lab: Tue 11.03.2020 12:20
Report Date: 11.05.2020 10:52
Project Manager: Jessica Kramer

Analysis Requested	Lab Id: 676786-007 Field Id: SW42 Depth: 0-4 ft Matrix: SOIL Sampled: 11.02.2020 12:50					
BTEX by EPA 8021B	Extracted: 11.03.2020 16:11 Analyzed: 11.04.2020 07:34 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: 11.03.2020 17:13 Analyzed: 11.03.2020 22:06 Units/RL: mg/kg RL					
Chloride	886 10.0					
TPH by SW8015 Mod	Extracted: 11.04.2020 13:00 Analyzed: 11.04.2020 19:08 Units/RL: mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<49.8 49.8					
Diesel Range Organics (DRO)	<49.8 49.8					
Motor Oil Range Hydrocarbons (MRO)	<49.8 49.8					
Total GRO-DRO	<49.8 49.8					
Total TPH	<49.8 49.8					

BRL - Below Reporting Limit

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



Analytical Report 676786

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.05.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.05.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **676786**

Muy Wayno Frac Pond

Project Address: Eddy County, NM

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) 676786. 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. 676786 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,

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 676786****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS30	S	11.02.2020 12:08	4 ft	676786-001
FS31	S	11.02.2020 12:12	4 ft	676786-002
FS32	S	11.02.2020 12:15	4 ft	676786-003
SW39	S	11.02.2020 12:45	0 - 4 ft	676786-004
SW40	S	11.02.2020 13:38	0 - 4 ft	676786-005
SW41	S	11.02.2020 12:48	0 - 4 ft	676786-006
SW42	S	11.02.2020 12:50	0 - 4 ft	676786-007



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 676786

Report Date: 11.05.2020
Date Received: 11.03.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS30**
Lab Sample Id: 676786-001

Matrix: Soil
Date Collected: 11.02.2020 12:08

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141307

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4020	49.7	mg/kg	11.03.2020 20:44		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.04.2020 13:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141396

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.04.2020 16:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.04.2020 16:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.04.2020 16:26	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.04.2020 16:26	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.04.2020 16:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	11.04.2020 16:26	
o-Terphenyl	84-15-1	108	%	70-135	11.04.2020 16:26	



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS30**
 Lab Sample Id: 676786-001

Matrix: Soil
 Date Collected: 11.02.2020 12:08

Date Received: 11.03.2020 12:20
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
 Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.04.2020 04:22	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.04.2020 04:22	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.04.2020 04:22	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.04.2020 04:22	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.04.2020 04:22	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.04.2020 04:22	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.04.2020 04:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.04.2020 04:22		
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.04.2020 04:22		



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS31**
Lab Sample Id: 676786-002

Matrix: Soil
Date Collected: 11.02.2020 12:12

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 15:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141307

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2130	50.3	mg/kg	11.03.2020 20:49		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.04.2020 13:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141396

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.04.2020 17:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.04.2020 17:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.04.2020 17:27	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.04.2020 17:27	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.04.2020 17:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.04.2020 17:27	
o-Terphenyl	84-15-1	104	%	70-135	11.04.2020 17:27	



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS31**
Lab Sample Id: 676786-002

Matrix: Soil
Date Collected: 11.02.2020 12:12

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.04.2020 04:44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.04.2020 04:44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.04.2020 04:44	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.04.2020 04:44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.04.2020 04:44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.04.2020 04:44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.04.2020 04:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.04.2020 04:44		
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.04.2020 04:44		



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS32** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676786-003 Date Collected: 11.02.2020 12:15 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 17:13 % Moisture:
 Seq Number: 3141308 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2070	49.6	mg/kg	11.03.2020 21:39		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.04.2020 13:00 % Moisture:
 Seq Number: 3141396 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.04.2020 17:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.04.2020 17:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.04.2020 17:47	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.04.2020 17:47	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.04.2020 17:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.04.2020 17:47	
o-Terphenyl	84-15-1	106	%	70-135	11.04.2020 17:47	



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS32**
Lab Sample Id: 676786-003

Matrix: Soil
Date Collected: 11.02.2020 12:15

Date Received: 11.03.2020 12:20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.04.2020 06:04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.04.2020 06:04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.04.2020 06:04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.04.2020 06:04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.04.2020 06:04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.04.2020 06:04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.04.2020 06:04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.04.2020 06:04		
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.04.2020 06:04		



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW39** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676786-004 Date Collected: 11.02.2020 12:45 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 17:13 % Moisture:
 Seq Number: 3141308 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	231	9.98	mg/kg	11.03.2020 21:44		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.04.2020 13:00 % Moisture:
 Seq Number: 3141396 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.04.2020 18:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.04.2020 18:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.04.2020 18:07	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.04.2020 18:07	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.04.2020 18:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.04.2020 18:07	
o-Terphenyl	84-15-1	93	%	70-135	11.04.2020 18:07	



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW39**
Lab Sample Id: 676786-004

Matrix: Soil
Date Collected: 11.02.2020 12:45

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.04.2020 06:27	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.04.2020 06:27	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.04.2020 06:27	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.04.2020 06:27	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.04.2020 06:27	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.04.2020 06:27	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.04.2020 06:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.04.2020 06:27		
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.04.2020 06:27		



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW40** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676786-005 Date Collected: 11.02.2020 13:38 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 17:13 % Moisture:
 Seq Number: 3141308 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	749	10.0	mg/kg	11.03.2020 21:50		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.04.2020 13:00 % Moisture:
 Seq Number: 3141396 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.04.2020 18:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.04.2020 18:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.04.2020 18:27	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.04.2020 18:27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.04.2020 18:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	11.04.2020 18:27	
o-Terphenyl	84-15-1	100	%	70-135	11.04.2020 18:27	



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW40**
Lab Sample Id: 676786-005

Matrix: Soil
Date Collected: 11.02.2020 13:38

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.04.2020 06:49	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.04.2020 06:49	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.04.2020 06:49	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.04.2020 06:49	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.04.2020 06:49	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.04.2020 06:49	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.04.2020 06:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.04.2020 06:49		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.04.2020 06:49		



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW41**
Lab Sample Id: 676786-006

Matrix: Soil
Date Collected: 11.02.2020 12:48

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 17:13

% Moisture:
Basis: Wet Weight

Seq Number: 3141308

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	578	9.94	mg/kg	11.03.2020 21:22		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.04.2020 13:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141396

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.04.2020 18:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.04.2020 18:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.04.2020 18:48	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.04.2020 18:48	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.04.2020 18:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	11.04.2020 18:48	
o-Terphenyl	84-15-1	96	%	70-135	11.04.2020 18:48	



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW41**
Lab Sample Id: 676786-006

Matrix: Soil
Date Collected: 11.02.2020 12:48

Date Received: 11.03.2020 12:20
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.04.2020 07:11	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.04.2020 07:11	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.04.2020 07:11	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.04.2020 07:11	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.04.2020 07:11	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.04.2020 07:11	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.04.2020 07:11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	123	%	70-130	11.04.2020 07:11		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.04.2020 07:11		



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW42** Matrix: Soil Date Received: 11.03.2020 12:20
 Lab Sample Id: 676786-007 Date Collected: 11.02.2020 12:50 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.03.2020 17:13 % Moisture:
 Seq Number: 3141308 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	886	10.0	mg/kg	11.03.2020 22:06		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.04.2020 13:00 % Moisture:
 Seq Number: 3141396 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.04.2020 19:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.04.2020 19:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.04.2020 19:08	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.04.2020 19:08	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.04.2020 19:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.04.2020 19:08	
o-Terphenyl	84-15-1	103	%	70-135	11.04.2020 19:08	



Certificate of Analytical Results 676786

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW42**
 Lab Sample Id: 676786-007

Matrix: Soil
 Date Collected: 11.02.2020 12:50

Date Received: 11.03.2020 12:20
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.03.2020 16:11

% Moisture:
 Basis: Wet Weight

Seq Number: 3141313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.04.2020 07:34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.04.2020 07:34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.04.2020 07:34	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.04.2020 07:34	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.04.2020 07:34	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.04.2020 07:34	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.04.2020 07:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.04.2020 07:34		
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.04.2020 07:34		

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.

Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3141307

MB Sample Id: 7714457-1-BLK

Matrix: Solid

LCS Sample Id: 7714457-1-BKS

Prep Method: E300P

Date Prep: 11.03.2020

LCSD Sample Id: 7714457-1-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	260	104	90-110	0	20	mg/kg	11.03.2020 18:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3141308

MB Sample Id: 7714459-1-BLK

Matrix: Solid

LCS Sample Id: 7714459-1-BKS

Prep Method: E300P

Date Prep: 11.03.2020

LCSD Sample Id: 7714459-1-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	260	104	90-110	0	20	mg/kg	11.03.2020 21:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3141307

Parent Sample Id: 676767-003

Matrix: Soil

MS Sample Id: 676767-003 S

Prep Method: E300P

Date Prep: 11.03.2020

MSD Sample Id: 676767-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	429	199	630	101	631	102	90-110	0	20	mg/kg	11.03.2020 18:27	

Analytical Method: Chloride by EPA 300

Seq Number: 3141307

Parent Sample Id: 676778-012

Matrix: Soil

MS Sample Id: 676778-012 S

Prep Method: E300P

Date Prep: 11.03.2020

MSD Sample Id: 676778-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	197	201	414	108	414	108	90-110	0	20	mg/kg	11.03.2020 19:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3141308

Parent Sample Id: 676786-006

Matrix: Soil

MS Sample Id: 676786-006 S

Prep Method: E300P

Date Prep: 11.03.2020

MSD Sample Id: 676786-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	578	200	769	96	771	97	90-110	0	20	mg/kg	11.03.2020 21:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3141308

Parent Sample Id: 676812-002

Matrix: Soil

MS Sample Id: 676812-002 S

Prep Method: E300P

Date Prep: 11.03.2020

MSD Sample Id: 676812-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	12000	494	12500	101	12500	101	90-110	0	20	mg/kg	11.03.2020 22:44	

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.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141396

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.04.2020

MB Sample Id: 7714497-1-BLK

LCS Sample Id: 7714497-1-BKS

LCSD Sample Id: 7714497-1-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	968	97	934	93	70-135	4	35	mg/kg	11.04.2020 15:46	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1040	104	70-135	5	35	mg/kg	11.04.2020 15:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		132		130		70-135	%	11.04.2020 15:46
o-Terphenyl	103		108		104		70-135	%	11.04.2020 15:46

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141396

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.04.2020

MB Sample Id: 7714497-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.04.2020 15:25	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141396

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.04.2020

Parent Sample Id: 676786-001

MS Sample Id: 676786-001 S

MSD Sample Id: 676786-001 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	856	86	849	85	70-135	1	35	mg/kg	11.04.2020 16:46	
Diesel Range Organics (DRO)	<50.0	999	937	94	958	96	70-135	2	35	mg/kg	11.04.2020 16:46	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		134		70-135	%	11.04.2020 16:46
o-Terphenyl	110		115		70-135	%	11.04.2020 16:46

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141313

Matrix: Solid

Prep Method: SW5035A

Date Prep: 11.03.2020

MB Sample Id: 7714467-1-BLK

LCS Sample Id: 7714467-1-BKS

LCSD Sample Id: 7714467-1-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	0.0865	87	0.0906	91	70-130	5	35	mg/kg	11.03.2020 22:56	
Toluene	<0.00200	0.100	0.0841	84	0.0865	87	70-130	3	35	mg/kg	11.03.2020 22:56	
Ethylbenzene	<0.00200	0.100	0.0856	86	0.0907	91	71-129	6	35	mg/kg	11.03.2020 22:56	
m,p-Xylenes	<0.00400	0.200	0.175	88	0.185	93	70-135	6	35	mg/kg	11.03.2020 22:56	
o-Xylene	<0.00200	0.100	0.0876	88	0.0889	89	71-133	1	35	mg/kg	11.03.2020 22:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		97		102		70-130	%	11.03.2020 22:56
4-Bromofluorobenzene	108		104		110		70-130	%	11.03.2020 22:56

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
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.
Muy Wayno Frac Pond

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141313

Parent Sample Id: 676778-009

Matrix: Soil

MS Sample Id: 676778-009 S

Prep Method: SW5035A

Date Prep: 11.03.2020

MSD Sample Id: 676778-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.100	101	0.108	108	70-130	8	35	mg/kg	11.03.2020 23:41	
Toluene	<0.00199	0.0994	0.0891	90	0.0983	99	70-130	10	35	mg/kg	11.03.2020 23:41	
Ethylbenzene	<0.00199	0.0994	0.0862	87	0.100	100	71-129	15	35	mg/kg	11.03.2020 23:41	
m,p-Xylenes	<0.00398	0.199	0.173	87	0.203	102	70-135	16	35	mg/kg	11.03.2020 23:41	
o-Xylene	<0.00199	0.0994	0.0918	92	0.102	102	71-133	11	35	mg/kg	11.03.2020 23:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		104		70-130	%	11.03.2020 23:41
4-Bromofluorobenzene	110		111		70-130	%	11.03.2020 23:41

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



Chain of Custody

Work Order No: 10767816

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

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 Street	Address:	
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	
Phone:	(432) 236-3849	Email:	lmmather@ltenv.com, dmoir@ltenv.com

Program: ☒ UST/PST ☐ RP ☐ Growfields ☐ RC ☐ Deepfund State of Project:	
Reporting Level II ☐ Level III ☐ FT/UST ☐ RP ☐ Level IV ☐	Deliverables: EDD ☐ ADAPT ☐ Other: ☐

Project Name:	Muy Wayno Frac Pond	Turn Around	
Project Number:	012920104	Routine	☒
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT		Temp Blank:	☒ Yes ☐ No	Wet Ice:	☒ Yes ☐ No
Temperature (°C):	1.4/1.2	Thermometer ID	TMM007		
Received Intact:	☒ Yes ☐ No	Correction Factor:	-0.2		
Cooler Custody Seals:	☒ Yes ☐ No	Total Containers:	7		
Sample Custody Seals:	☒ Yes ☐ No				

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)									
FS30	S	11/2/2020	12:08	4'	1	X	X	X									Composite
FS31	S	11/2/2020	12:12	4'	1	X	X	X									Composite
FS32	S	11/2/2020	12:15	4'	1	X	X	X									Composite
SW39	S	11/2/2020	12:45	0-4'	1	X	X	X									Composite
SW40	S	11/2/2020	13:38	0-4'	1	X	X	X									Composite
SW41	S	11/2/2020	12:48	0-4'	1	X	X	X									Composite
SW42	S	11/2/2020	12:50	0-4'	1	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

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>	11/3/20 1220	<i>[Signature]</i>	<i>[Signature]</i>	11/3/20 12:20

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.03.2020 12.20.00 PM

Work Order #: 676786

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T_NM_007

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



Cloe Clifton

Date: 11.03.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.04.2020

Certificate of Analysis Summary 676974



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 11.05.2020 10:30
Report Date: 11.06.2020 16:21
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	676974-001	676974-002	676974-003	676974-004	676974-005	676974-006
	<i>Field Id:</i>	SW43	SW44	FS33	FS34	FS35	SW45
	<i>Depth:</i>	0-4 ft	0-4 ft	4- ft	4- ft	4- ft	0-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.03.2020 12:42	11.03.2020 12:46	11.03.2020 13:25	11.03.2020 13:28	11.03.2020 13:31	11.03.2020 13:39
BTEX by EPA 8021B	<i>Extracted:</i>	11.05.2020 12:54	11.05.2020 12:54	11.05.2020 12:54	11.05.2020 12:54	11.05.2020 12:54	11.05.2020 12:54
	<i>Analyzed:</i>	11.05.2020 17:32	11.05.2020 17:54	11.05.2020 18:17	11.05.2020 18:39	11.05.2020 19:01	11.05.2020 19:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00400 0.00400	<0.00398 0.00398	<0.00404 0.00404	<0.00402 0.00402	<0.00396 0.00396	<0.00400 0.00400
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	11.05.2020 16:00	11.05.2020 16:00	11.05.2020 16:00	11.05.2020 16:00	11.05.2020 16:00	11.05.2020 16:00
	<i>Analyzed:</i>	11.05.2020 16:27	11.05.2020 16:44	11.05.2020 16:50	11.05.2020 16:55	11.05.2020 17:00	11.05.2020 17:17
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		129 9.96	1130 50.0	1250 50.1	670 9.94	680 10.1	130 9.92
TPH by SW8015 Mod	<i>Extracted:</i>	11.05.2020 14:04	11.05.2020 14:04	11.05.2020 14:04	11.05.2020 14:04	11.05.2020 14:04	11.05.2020 14:04
	<i>Analyzed:</i>	11.05.2020 16:33	11.05.2020 18:05	11.05.2020 18:25	11.05.2020 18:45	11.05.2020 19:05	11.05.2020 19:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.1 50.1	<50.1 50.1	<49.8 49.8	<50.2 50.2	<50.2 50.2
Diesel Range Organics (DRO)		<50.2 50.2	<50.1 50.1	<50.1 50.1	<49.8 49.8	<50.2 50.2	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.1 50.1	<50.1 50.1	<49.8 49.8	<50.2 50.2	<50.2 50.2
Total GRO-DRO		<50.2 50.2	<50.1 50.1	<50.1 50.1	<49.8 49.8	<50.2 50.2	<50.2 50.2
Total TPH		<50.2 50.2	<50.1 50.1	<50.1 50.1	<49.8 49.8	<50.2 50.2	<50.2 50.2

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 676974



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 11.05.2020 10:30
Report Date: 11.06.2020 16:21
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	676974-007	676974-008	676974-009	676974-010	676974-011	676974-012
	<i>Field Id:</i>	SW48	SW46	SW47	FS36	FS37	FS38
	<i>Depth:</i>	0-4 ft	0-4 ft	0-4 ft	4- ft	4- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.03.2020 13:46	11.04.2020 10:18	11.04.2020 10:21	11.04.2020 10:27	11.04.2020 10:28	11.04.2020 10:30
BTEX by EPA 8021B	<i>Extracted:</i>	11.05.2020 12:54	11.05.2020 12:54	11.05.2020 12:54	11.05.2020 12:54	11.05.2020 12:54	11.05.2020 12:54
	<i>Analyzed:</i>	11.05.2020 19:46	11.05.2020 20:09	11.05.2020 20:31	11.05.2020 20:53	11.05.2020 22:13	11.05.2020 22:35
	<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	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Toluene		<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Ethylbenzene		<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
m,p-Xylenes		<0.00396 0.00396	<0.00397 0.00397	<0.00399 0.00399	<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398
o-Xylene		<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Total Xylenes		<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Total BTEX		<0.00198 0.00198	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199
Chloride by EPA 300	<i>Extracted:</i>	11.05.2020 16:00	11.05.2020 16:00	11.05.2020 16:00	11.05.2020 16:00	11.05.2020 16:00	11.05.2020 16:00
	<i>Analyzed:</i>	11.05.2020 17:22	11.05.2020 17:28	11.05.2020 17:33	11.05.2020 17:39	11.05.2020 17:44	11.05.2020 18:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		39.3 9.98	107 10.0	18.8 9.98	996 9.98	664 9.92	105 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	11.05.2020 14:04	11.05.2020 14:04	11.05.2020 14:04	11.05.2020 14:04	11.05.2020 14:04	11.05.2020 14:04
	<i>Analyzed:</i>	11.05.2020 19:46	11.05.2020 20:06	11.05.2020 20:26	11.05.2020 20:46	11.05.2020 21:27	11.05.2020 21:47
	<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	<50.0 50.0	<50.2 50.2	<50.2 50.2	<50.2 50.2	<49.8 49.8
Diesel Range Organics (DRO)		<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.2 50.2	<50.2 50.2	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.2 50.2	<50.2 50.2	<49.8 49.8
Total GRO-DRO		<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.2 50.2	<50.2 50.2	<49.8 49.8
Total TPH		<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.2 50.2	<50.2 50.2	<49.8 49.8

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 676974



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 11.05.2020 10:30
Report Date: 11.06.2020 16:21
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	676974-013	676974-014	676974-015	676974-016		
	Field Id:	SW49	SW50	SW51	SW52		
	Depth:	0-4 ft	0-4 ft	0-4 ft	0-4 ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	11.04.2020 10:35	11.04.2020 10:37	11.04.2020 10:40	11.04.2020 10:43		
BTEX by EPA 8021B	Extracted:	11.05.2020 12:54	11.05.2020 12:54	11.05.2020 12:54	11.05.2020 12:54		
	Analyzed:	11.05.2020 22:58	11.05.2020 23:20	11.05.2020 23:43	11.06.2020 00:05		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Toluene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Ethylbenzene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402	<0.00400 0.00400	<0.00399 0.00399		
o-Xylene		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Total Xylenes		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Total BTEX		<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200		
Chloride by EPA 300	Extracted:	11.05.2020 16:00	11.05.2020 16:00	11.05.2020 16:00	11.05.2020 16:00		
	Analyzed:	11.05.2020 18:06	11.05.2020 18:23	11.05.2020 18:28	11.05.2020 18:34		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		91.2 9.98	29.8 10.0	40.7 10.1	17.0 9.96		
TPH by SW8015 Mod	Extracted:	11.05.2020 14:04	11.05.2020 14:04	11.05.2020 14:04	11.05.2020 14:04		
	Analyzed:	11.05.2020 22:07	11.05.2020 22:27	11.05.2020 22:47	11.05.2020 23:07		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.1 50.1	<50.3 50.3	<50.1 50.1		
Diesel Range Organics (DRO)		<49.9 49.9	<50.1 50.1	<50.3 50.3	<50.1 50.1		
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.1 50.1	<50.3 50.3	<50.1 50.1		
Total GRO-DRO		<49.9 49.9	<50.1 50.1	<50.3 50.3	<50.1 50.1		
Total TPH		<49.9 49.9	<50.1 50.1	<50.3 50.3	<50.1 50.1		

BRL - Below Reporting Limit

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



Analytical Report 676974

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.06.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.06.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **676974**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 676974. 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. 676974 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 676974****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW43	S	11.03.2020 12:42	0 - 4 ft	676974-001
SW44	S	11.03.2020 12:46	0 - 4 ft	676974-002
FS33	S	11.03.2020 13:25	4 ft	676974-003
FS34	S	11.03.2020 13:28	4 ft	676974-004
FS35	S	11.03.2020 13:31	4 ft	676974-005
SW45	S	11.03.2020 13:39	0 - 4 ft	676974-006
SW48	S	11.03.2020 13:46	0 - 4 ft	676974-007
SW46	S	11.04.2020 10:18	0 - 4 ft	676974-008
SW47	S	11.04.2020 10:21	0 - 4 ft	676974-009
FS36	S	11.04.2020 10:27	4 ft	676974-010
FS37	S	11.04.2020 10:28	4 ft	676974-011
FS38	S	11.04.2020 10:30	4 ft	676974-012
SW49	S	11.04.2020 10:35	0 - 4 ft	676974-013
SW50	S	11.04.2020 10:37	0 - 4 ft	676974-014
SW51	S	11.04.2020 10:40	0 - 4 ft	676974-015
SW52	S	11.04.2020 10:43	0 - 4 ft	676974-016



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 676974

Report Date: 11.06.2020
Date Received: 11.05.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 676974

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW43**
Lab Sample Id: 676974-001

Matrix: Soil
Date Collected: 11.03.2020 12:42

Date Received: 11.05.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141520

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	129	9.96	mg/kg	11.05.2020 16:27		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.05.2020 14:04

% Moisture:
Basis: Wet Weight

Seq Number: 3141525

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.05.2020 16:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.05.2020 16:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.05.2020 16:33	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.05.2020 16:33	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.05.2020 16:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.05.2020 16:33	
o-Terphenyl	84-15-1	115	%	70-135	11.05.2020 16:33	



Certificate of Analytical Results 676974

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW43**
 Lab Sample Id: 676974-001

Matrix: Soil
 Date Collected: 11.03.2020 12:42

Date Received: 11.05.2020 10:30
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
 Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.05.2020 17:32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.05.2020 17:32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.05.2020 17:32	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.05.2020 17:32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.05.2020 17:32	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.05.2020 17:32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.05.2020 17:32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	108	%	70-130	11.05.2020 17:32		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.05.2020 17:32		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW44** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-002 Date Collected: 11.03.2020 12:46 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1130	50.0	mg/kg	11.05.2020 16:44		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.05.2020 18:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.05.2020 18:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.05.2020 18:05	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.05.2020 18:05	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.05.2020 18:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.05.2020 18:05	
o-Terphenyl	84-15-1	104	%	70-135	11.05.2020 18:05	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW44**
Lab Sample Id: 676974-002

Matrix: Soil
Date Collected: 11.03.2020 12:46

Date Received: 11.05.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.05.2020 17:54	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.05.2020 17:54	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.05.2020 17:54	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.05.2020 17:54	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.05.2020 17:54	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.05.2020 17:54	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.05.2020 17:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.05.2020 17:54	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.05.2020 17:54	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS33**
Lab Sample Id: 676974-003

Matrix: Soil
Date Collected: 11.03.2020 13:25

Date Received: 11.05.2020 10:30
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141520

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1250	50.1	mg/kg	11.05.2020 16:50		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.05.2020 14:04

% Moisture:
Basis: Wet Weight

Seq Number: 3141525

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.05.2020 18:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.05.2020 18:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.05.2020 18:25	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.05.2020 18:25	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.05.2020 18:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.05.2020 18:25	
o-Terphenyl	84-15-1	113	%	70-135	11.05.2020 18:25	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS33**
Lab Sample Id: 676974-003

Matrix: Soil
Date Collected: 11.03.2020 13:25

Date Received: 11.05.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.05.2020 18:17	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.05.2020 18:17	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.05.2020 18:17	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.05.2020 18:17	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.05.2020 18:17	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.05.2020 18:17	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.05.2020 18:17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.05.2020 18:17		
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.05.2020 18:17		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS34** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-004 Date Collected: 11.03.2020 13:28 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	670	9.94	mg/kg	11.05.2020 16:55		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.05.2020 18:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.05.2020 18:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.05.2020 18:45	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.05.2020 18:45	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.05.2020 18:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	11.05.2020 18:45	
o-Terphenyl	84-15-1	95	%	70-135	11.05.2020 18:45	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS34**
Lab Sample Id: 676974-004

Matrix: Soil
Date Collected: 11.03.2020 13:28

Date Received: 11.05.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.05.2020 18:39	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.05.2020 18:39	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.05.2020 18:39	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.05.2020 18:39	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.05.2020 18:39	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.05.2020 18:39	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.05.2020 18:39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.05.2020 18:39		
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.05.2020 18:39		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS35** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-005 Date Collected: 11.03.2020 13:31 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	680	10.1	mg/kg	11.05.2020 17:00		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.05.2020 19:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.05.2020 19:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.05.2020 19:05	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.05.2020 19:05	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.05.2020 19:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	11.05.2020 19:05	
o-Terphenyl	84-15-1	102	%	70-135	11.05.2020 19:05	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS35**
Lab Sample Id: 676974-005

Matrix: Soil
Date Collected: 11.03.2020 13:31

Date Received: 11.05.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.05.2020 19:01	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.05.2020 19:01	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.05.2020 19:01	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.05.2020 19:01	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.05.2020 19:01	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.05.2020 19:01	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.05.2020 19:01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.05.2020 19:01		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.05.2020 19:01		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW45** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-006 Date Collected: 11.03.2020 13:39 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	130	9.92	mg/kg	11.05.2020 17:17		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.05.2020 19:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.05.2020 19:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.05.2020 19:25	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.05.2020 19:25	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.05.2020 19:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.05.2020 19:25	
o-Terphenyl	84-15-1	97	%	70-135	11.05.2020 19:25	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW45**
Lab Sample Id: 676974-006

Matrix: Soil
Date Collected: 11.03.2020 13:39

Date Received: 11.05.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.05.2020 19:24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.05.2020 19:24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.05.2020 19:24	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.05.2020 19:24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.05.2020 19:24	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.05.2020 19:24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.05.2020 19:24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.05.2020 19:24		
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.05.2020 19:24		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW48** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-007 Date Collected: 11.03.2020 13:46 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.3	9.98	mg/kg	11.05.2020 17:22		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.05.2020 19:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.05.2020 19:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.05.2020 19:46	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.05.2020 19:46	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.05.2020 19:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.05.2020 19:46	
o-Terphenyl	84-15-1	107	%	70-135	11.05.2020 19:46	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW48**
Lab Sample Id: 676974-007

Matrix: Soil
Date Collected: 11.03.2020 13:46

Date Received: 11.05.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.05.2020 19:46	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.05.2020 19:46	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.05.2020 19:46	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.05.2020 19:46	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.05.2020 19:46	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.05.2020 19:46	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.05.2020 19:46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.05.2020 19:46		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.05.2020 19:46		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW46** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-008 Date Collected: 11.04.2020 10:18 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	107	10.0	mg/kg	11.05.2020 17:28		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.05.2020 20:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.05.2020 20:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.05.2020 20:06	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.05.2020 20:06	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.05.2020 20:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.05.2020 20:06	
o-Terphenyl	84-15-1	106	%	70-135	11.05.2020 20:06	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW46**
 Lab Sample Id: 676974-008

Matrix: Soil
 Date Collected: 11.04.2020 10:18

Date Received: 11.05.2020 10:30
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
 Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.05.2020 20:09	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.05.2020 20:09	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.05.2020 20:09	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.05.2020 20:09	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.05.2020 20:09	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.05.2020 20:09	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.05.2020 20:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.05.2020 20:09	
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.05.2020 20:09	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW47** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-009 Date Collected: 11.04.2020 10:21 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.8	9.98	mg/kg	11.05.2020 17:33		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.05.2020 20:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.05.2020 20:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.05.2020 20:26	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.05.2020 20:26	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.05.2020 20:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.05.2020 20:26	
o-Terphenyl	84-15-1	100	%	70-135	11.05.2020 20:26	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW47**
Lab Sample Id: 676974-009

Matrix: Soil
Date Collected: 11.04.2020 10:21

Date Received: 11.05.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.05.2020 20:31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.05.2020 20:31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.05.2020 20:31	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.05.2020 20:31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.05.2020 20:31	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.05.2020 20:31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.05.2020 20:31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.05.2020 20:31		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.05.2020 20:31		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS36** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-010 Date Collected: 11.04.2020 10:27 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	996	9.98	mg/kg	11.05.2020 17:39		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.05.2020 20:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.05.2020 20:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.05.2020 20:46	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.05.2020 20:46	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.05.2020 20:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.05.2020 20:46	
o-Terphenyl	84-15-1	102	%	70-135	11.05.2020 20:46	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS36**
Lab Sample Id: 676974-010

Matrix: Soil
Date Collected: 11.04.2020 10:27

Date Received: 11.05.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.05.2020 20:53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.05.2020 20:53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.05.2020 20:53	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.05.2020 20:53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.05.2020 20:53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.05.2020 20:53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.05.2020 20:53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.05.2020 20:53		
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.05.2020 20:53		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS37** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-011 Date Collected: 11.04.2020 10:28 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	664	9.92	mg/kg	11.05.2020 17:44		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.05.2020 21:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.05.2020 21:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.05.2020 21:27	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.05.2020 21:27	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.05.2020 21:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.05.2020 21:27	
o-Terphenyl	84-15-1	101	%	70-135	11.05.2020 21:27	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS37**
Lab Sample Id: 676974-011

Matrix: Soil
Date Collected: 11.04.2020 10:28

Date Received: 11.05.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.05.2020 22:13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.05.2020 22:13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.05.2020 22:13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.05.2020 22:13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.05.2020 22:13	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.05.2020 22:13	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.05.2020 22:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.05.2020 22:13		
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.05.2020 22:13		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS38** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-012 Date Collected: 11.04.2020 10:30 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	105	10.0	mg/kg	11.05.2020 18:01		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.05.2020 21:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.05.2020 21:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.05.2020 21:47	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.05.2020 21:47	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.05.2020 21:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.05.2020 21:47	
o-Terphenyl	84-15-1	102	%	70-135	11.05.2020 21:47	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS38**
Lab Sample Id: 676974-012

Matrix: Soil
Date Collected: 11.04.2020 10:30

Date Received: 11.05.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.05.2020 22:35	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.05.2020 22:35	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.05.2020 22:35	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.05.2020 22:35	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.05.2020 22:35	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.05.2020 22:35	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.05.2020 22:35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.05.2020 22:35		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.05.2020 22:35		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW49** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-013 Date Collected: 11.04.2020 10:35 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	91.2	9.98	mg/kg	11.05.2020 18:06		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.05.2020 22:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.05.2020 22:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.05.2020 22:07	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.05.2020 22:07	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.05.2020 22:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.05.2020 22:07	
o-Terphenyl	84-15-1	98	%	70-135	11.05.2020 22:07	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW49**
 Lab Sample Id: 676974-013

Matrix: Soil
 Date Collected: 11.04.2020 10:35

Date Received: 11.05.2020 10:30
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
 Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.05.2020 22:58	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.05.2020 22:58	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.05.2020 22:58	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.05.2020 22:58	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.05.2020 22:58	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.05.2020 22:58	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.05.2020 22:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.05.2020 22:58	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.05.2020 22:58	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW50** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-014 Date Collected: 11.04.2020 10:37 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.8	10.0	mg/kg	11.05.2020 18:23		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.05.2020 22:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.05.2020 22:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.05.2020 22:27	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.05.2020 22:27	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.05.2020 22:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.05.2020 22:27	
o-Terphenyl	84-15-1	101	%	70-135	11.05.2020 22:27	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW50**
 Lab Sample Id: 676974-014

Matrix: Soil
 Date Collected: 11.04.2020 10:37

Date Received: 11.05.2020 10:30
 Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
 Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.05.2020 23:20	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.05.2020 23:20	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.05.2020 23:20	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.05.2020 23:20	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.05.2020 23:20	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.05.2020 23:20	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.05.2020 23:20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.05.2020 23:20		
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.05.2020 23:20		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW51**
Lab Sample Id: 676974-015

Matrix: Soil
Date Collected: 11.04.2020 10:40

Date Received: 11.05.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141520

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	40.7	10.1	mg/kg	11.05.2020 18:28		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.05.2020 14:04

% Moisture:
Basis: Wet Weight

Seq Number: 3141525

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.05.2020 22:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.05.2020 22:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.05.2020 22:47	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.05.2020 22:47	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.05.2020 22:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	11.05.2020 22:47	
o-Terphenyl	84-15-1	99	%	70-135	11.05.2020 22:47	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW51**
Lab Sample Id: 676974-015

Matrix: Soil
Date Collected: 11.04.2020 10:40

Date Received: 11.05.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.05.2020 23:43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.05.2020 23:43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.05.2020 23:43	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.05.2020 23:43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.05.2020 23:43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.05.2020 23:43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.05.2020 23:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.05.2020 23:43		
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.05.2020 23:43		



Certificate of Analytical Results 676974

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW52** Matrix: Soil Date Received: 11.05.2020 10:30
 Lab Sample Id: 676974-016 Date Collected: 11.04.2020 10:43 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.05.2020 16:00 % Moisture:
 Seq Number: 3141520 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.0	9.96	mg/kg	11.05.2020 18:34		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.05.2020 14:04 % Moisture:
 Seq Number: 3141525 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.05.2020 23:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.05.2020 23:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.05.2020 23:07	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.05.2020 23:07	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.05.2020 23:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.05.2020 23:07	
o-Terphenyl	84-15-1	108	%	70-135	11.05.2020 23:07	



Certificate of Analytical Results 676974

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW52**
Lab Sample Id: 676974-016

Matrix: Soil
Date Collected: 11.04.2020 10:43

Date Received: 11.05.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.05.2020 12:54

% Moisture:
Basis: Wet Weight

Seq Number: 3141518

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.06.2020 00:05	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.06.2020 00:05	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.06.2020 00:05	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.06.2020 00:05	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.06.2020 00:05	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.06.2020 00:05	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.06.2020 00:05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	128	%	70-130	11.06.2020 00:05		
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.06.2020 00:05		



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.

Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3141520

MB Sample Id: 7714604-1-BLK

Matrix: Solid

LCS Sample Id: 7714604-1-BKS

Prep Method: E300P

Date Prep: 11.05.2020

LCSD Sample Id: 7714604-1-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	250	100	90-110	3	20	mg/kg	11.05.2020 16:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3141520

Parent Sample Id: 676974-001

Matrix: Soil

MS Sample Id: 676974-001 S

Prep Method: E300P

Date Prep: 11.05.2020

MSD Sample Id: 676974-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	129	200	333	102	329	100	90-110	1	20	mg/kg	11.05.2020 16:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3141520

Parent Sample Id: 676974-011

Matrix: Soil

MS Sample Id: 676974-011 S

Prep Method: E300P

Date Prep: 11.05.2020

MSD Sample Id: 676974-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	664	199	855	96	845	90	90-110	1	20	mg/kg	11.05.2020 17:50	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141525

MB Sample Id: 7714605-1-BLK

Matrix: Solid

LCS Sample Id: 7714605-1-BKS

Prep Method: SW8015P

Date Prep: 11.05.2020

LCSD Sample Id: 7714605-1-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	958	96	70-135	1	35	mg/kg	11.05.2020 15:53	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	1070	107	70-135	0	35	mg/kg	11.05.2020 15:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		131		134		70-135	%	11.05.2020 15:53
o-Terphenyl	101		104		106		70-135	%	11.05.2020 15:53

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141525

Matrix: Solid

MB Sample Id: 7714605-1-BLK

Prep Method: SW8015P

Date Prep: 11.05.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.05.2020 15:33	

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.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141525

Parent Sample Id: 676974-001

Matrix: Soil

MS Sample Id: 676974-001 S

Prep Method: SW8015P

Date Prep: 11.05.2020

MSD Sample Id: 676974-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	892	89	922	92	70-135	3	35	mg/kg	11.05.2020 17:25	
Diesel Range Organics (DRO)	<50.0	1000	1020	102	1050	105	70-135	3	35	mg/kg	11.05.2020 17:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		133		70-135	%	11.05.2020 17:25
o-Terphenyl	122		123		70-135	%	11.05.2020 17:25

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141518

MB Sample Id: 7714602-1-BLK

Matrix: Solid

LCS Sample Id: 7714602-1-BKS

Prep Method: SW5035A

Date Prep: 11.05.2020

LCSD Sample Id: 7714602-1-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	0.0954	95	0.0948	95	70-130	1	35	mg/kg	11.05.2020 15:27	
Toluene	<0.00200	0.100	0.0902	90	0.0899	90	70-130	0	35	mg/kg	11.05.2020 15:27	
Ethylbenzene	<0.00200	0.100	0.0947	95	0.0943	94	71-129	0	35	mg/kg	11.05.2020 15:27	
m,p-Xylenes	<0.00400	0.200	0.196	98	0.189	95	70-135	4	35	mg/kg	11.05.2020 15:27	
o-Xylene	<0.00200	0.100	0.0940	94	0.0953	95	71-133	1	35	mg/kg	11.05.2020 15:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		100		99		70-130	%	11.05.2020 15:27
4-Bromofluorobenzene	105		106		107		70-130	%	11.05.2020 15:27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141518

Parent Sample Id: 676974-001

Matrix: Soil

MS Sample Id: 676974-001 S

Prep Method: SW5035A

Date Prep: 11.05.2020

MSD Sample Id: 676974-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.102	102	0.101	101	70-130	1	35	mg/kg	11.05.2020 16:12	
Toluene	<0.00201	0.100	0.0948	95	0.0926	93	70-130	2	35	mg/kg	11.05.2020 16:12	
Ethylbenzene	<0.00201	0.100	0.0958	96	0.0935	94	71-129	2	35	mg/kg	11.05.2020 16:12	
m,p-Xylenes	<0.00402	0.201	0.195	97	0.193	97	70-135	1	35	mg/kg	11.05.2020 16:12	
o-Xylene	<0.00201	0.100	0.0970	97	0.0943	94	71-133	3	35	mg/kg	11.05.2020 16:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	11.05.2020 16:12
4-Bromofluorobenzene	111		108		70-130	%	11.05.2020 16:12

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: 676934

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

www.xenco.com

Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
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:	ymathier@xenco.com, dmoir@xenco.com

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

Project Name:	Muy Wayno Frac Pond	Turn Around
Project Number:	012920104	Routine
P.O. Number:	Eddy	Rush:
Sampler's Name:	William Mather	Due Date:

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	0.6/0.4	Thermometer ID					
Received Intact:	Yes	No					
Cooler Custody Seals:	Yes	No					
Sample Custody Seals:	Yes	No					
Total Containers:		16					

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST										Work Order Notes
SW43	S	11/3/2020	12:42	0-4'	1	X	X	X											Composite
SW44	S	11/3/2020	12:46	0-4'	1	X	X	X											Composite
FS33	S	11/3/2020	13:25	4'	1	X	X	X											Composite
FS34	S	11/3/2020	13:28	4'	1	X	X	X											Composite
FS35	S	11/3/2020	13:31	4'	1	X	X	X											Composite
SW45	S	11/3/2020	13:39	0-4'	1	X	X	X											Composite
SW48	S	11/3/2020	13:46	0-4'	1	X	X	X											Composite
SW46	S	11/4/2020	10:18	0-4'	1	X	X	X											Composite
SW47	S	11/4/2020	10:21	0-4'	1	X	X	X											Composite
FS36	S	11/4/2020	10:27	4'	1	X	X	X											Composite

Total 200.7 / 6010 200.8 / 6020:

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

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions 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
		11/05/20 @ 10:15			11:5:20 10:30

Work Order No: 62160974

Page 2 of 2

Work Order Comments				
Program: UST/PST	☐ RP	☐ Crownfields	☐ RC	\$perfund ☐
State of Project:				
Reporting Level II	☐ level III	☐ PST/UST	☐ RP	☐ level IV ☐
Deliverables: EDD	☐	ADAPT	☐	Other: ☐

ANALYSIS REQUEST											Work Order Notes
r of Containers											
A 8015)											
PA 0=8021)											
(EPA 300.0)											
											TAT starts the day received by the lab, if received by 4:30pm

[illegible]

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 to 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
		11/05/20 @ 1015			11.5.20 1036

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.05.2020 10.30.00 AM

Work Order #: 676974

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:



Cloe Clifton

Date: 11.05.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.06.2020

Certificate of Analysis Summary 677183



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri 11.06.2020 16:46
Report Date: 11.11.2020 13:59
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	677183-001	677183-002	677183-003	677183-004	677183-005	
	Field Id:	FS39	SW55	SW56	SW57	SW58	
	Depth:	3- ft	0-3 ft	0-3 ft	0-3 ft	0-3 ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	11.05.2020 12:10	11.05.2020 12:24	11.05.2020 12:26	11.05.2020 12:29	11.06.2020 17:51	
BTEX by EPA 8021B	Extracted:	11.09.2020 10:11	11.09.2020 10:11	11.09.2020 10:11	11.09.2020 10:11	11.09.2020 10:11	
	Analyzed:	11.09.2020 17:10	11.09.2020 17:33	11.09.2020 17:55	11.09.2020 18:18	11.09.2020 19:37	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	RL	
Benzene		<0.00200	<0.00200	<0.00201	<0.00199	<0.00200	
Toluene		<0.00200	<0.00200	<0.00201	<0.00199	<0.00200	
Ethylbenzene		<0.00200	<0.00200	<0.00201	<0.00199	<0.00200	
m,p-Xylenes		<0.00400	<0.00401	<0.00402	<0.00398	<0.00399	
o-Xylene		<0.00200	<0.00200	<0.00201	<0.00199	<0.00200	
Total Xylenes		<0.00200	<0.00200	<0.00201	<0.00199	<0.00200	
Total BTEX		<0.00200	<0.00200	<0.00201	<0.00199	<0.00200	
Chloride by EPA 300	Extracted:	11.09.2020 14:31	11.09.2020 14:31	11.09.2020 14:31	11.09.2020 14:31	11.09.2020 16:07	
	Analyzed:	11.09.2020 17:28	11.09.2020 17:34	11.09.2020 17:39	11.09.2020 17:45	11.09.2020 18:18	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	RL	
Chloride		147	294	111	111	11.1	
TPH by SW8015 Mod	Extracted:	11.10.2020 10:04	11.10.2020 10:04	11.10.2020 13:00	11.10.2020 13:00	11.10.2020 13:00	
	Analyzed:	11.10.2020 10:50	11.10.2020 11:30	11.10.2020 20:08	11.10.2020 20:49	11.10.2020 21:10	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	RL	
Gasoline Range Hydrocarbons (GRO)		<49.8	<49.8	<50.0	<50.2	<50.1	
Diesel Range Organics (DRO)		<49.8	<49.8	<50.0	<50.2	<50.1	
Motor Oil Range Hydrocarbons (MRO)		<49.8	<49.8	<50.0	<50.2	<50.1	
Total GRO-DRO		<49.8	<49.8	<50.0	<50.2	<50.1	
Total TPH		<49.8	<49.8	<50.0	<50.2	<50.1	

BRL - Below Reporting Limit

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



Analytical Report 677183

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.11.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.11.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **677183**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 677183. 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. 677183 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 677183****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS39	S	11.05.2020 12:10	3 ft	677183-001
SW55	S	11.05.2020 12:24	0 - 3 ft	677183-002
SW56	S	11.05.2020 12:26	0 - 3 ft	677183-003
SW57	S	11.05.2020 12:29	0 - 3 ft	677183-004
SW58	S	11.06.2020 17:51	0 - 3 ft	677183-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 677183

Report Date: 11.11.2020
Date Received: 11.06.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 677183

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS39**
Lab Sample Id: 677183-001

Matrix: Soil
Date Collected: 11.05.2020 12:10

Date Received: 11.06.2020 16:46
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.09.2020 14:31

% Moisture:
Basis: Wet Weight

Seq Number: 3141793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	147	10.1	mg/kg	11.09.2020 17:28		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.10.2020 10:04

% Moisture:
Basis: Wet Weight

Seq Number: 3141880

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.10.2020 10:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.10.2020 10:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.10.2020 10:50	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.10.2020 10:50	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.10.2020 10:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.10.2020 10:50	
o-Terphenyl	84-15-1	118	%	70-135	11.10.2020 10:50	



Certificate of Analytical Results 677183

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS39**
Lab Sample Id: 677183-001

Matrix: Soil
Date Collected: 11.05.2020 12:10

Date Received: 11.06.2020 16:46
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.09.2020 10:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.09.2020 17:10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.09.2020 17:10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.09.2020 17:10	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.09.2020 17:10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.09.2020 17:10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.09.2020 17:10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.09.2020 17:10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.09.2020 17:10		
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.09.2020 17:10		



Certificate of Analytical Results 677183

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW55**
Lab Sample Id: 677183-002

Matrix: Soil
Date Collected: 11.05.2020 12:24

Date Received: 11.06.2020 16:46
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.09.2020 14:31

% Moisture:
Basis: Wet Weight

Seq Number: 3141793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	294	9.92	mg/kg	11.09.2020 17:34		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.10.2020 10:04

% Moisture:
Basis: Wet Weight

Seq Number: 3141880

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.10.2020 11:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.10.2020 11:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.10.2020 11:30	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.10.2020 11:30	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.10.2020 11:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.10.2020 11:30	
o-Terphenyl	84-15-1	126	%	70-135	11.10.2020 11:30	



Certificate of Analytical Results 677183

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW55**
Lab Sample Id: 677183-002

Matrix: Soil
Date Collected: 11.05.2020 12:24

Date Received: 11.06.2020 16:46
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.09.2020 10:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.09.2020 17:33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.09.2020 17:33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.09.2020 17:33	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.09.2020 17:33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.09.2020 17:33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.09.2020 17:33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.09.2020 17:33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	11.09.2020 17:33		
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.09.2020 17:33		



Certificate of Analytical Results 677183

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW56**
Lab Sample Id: 677183-003

Matrix: Soil
Date Collected: 11.05.2020 12:26

Date Received: 11.06.2020 16:46
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.09.2020 14:31

% Moisture:
Basis: Wet Weight

Seq Number: 3141793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	111	9.90	mg/kg	11.09.2020 17:39		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.10.2020 13:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141919

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.10.2020 20:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.10.2020 20:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.10.2020 20:08	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.10.2020 20:08	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.10.2020 20:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.10.2020 20:08	
o-Terphenyl	84-15-1	118	%	70-135	11.10.2020 20:08	



Certificate of Analytical Results 677183

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW56**
Lab Sample Id: 677183-003

Matrix: Soil
Date Collected: 11.05.2020 12:26

Date Received: 11.06.2020 16:46
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.09.2020 10:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.09.2020 17:55	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.09.2020 17:55	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.09.2020 17:55	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.09.2020 17:55	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.09.2020 17:55	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.09.2020 17:55	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.09.2020 17:55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.09.2020 17:55		
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.09.2020 17:55		



Certificate of Analytical Results 677183

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW57** Matrix: Soil Date Received: 11.06.2020 16:46
 Lab Sample Id: 677183-004 Date Collected: 11.05.2020 12:29 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.09.2020 14:31 % Moisture:
 Seq Number: 3141793 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	111	10.0	mg/kg	11.09.2020 17:45		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.10.2020 13:00 % Moisture:
 Seq Number: 3141919 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.10.2020 20:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.10.2020 20:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.10.2020 20:49	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.10.2020 20:49	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.10.2020 20:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	11.10.2020 20:49	
o-Terphenyl	84-15-1	112	%	70-135	11.10.2020 20:49	



Certificate of Analytical Results 677183

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW57**
Lab Sample Id: 677183-004

Matrix: Soil
Date Collected: 11.05.2020 12:29

Date Received: 11.06.2020 16:46
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.09.2020 10:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.09.2020 18:18	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.09.2020 18:18	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.09.2020 18:18	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.09.2020 18:18	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.09.2020 18:18	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.09.2020 18:18	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.09.2020 18:18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.09.2020 18:18		
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.09.2020 18:18		



Certificate of Analytical Results 677183

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW58**
Lab Sample Id: 677183-005

Matrix: Soil
Date Collected: 11.06.2020 17:51

Date Received: 11.06.2020 16:46
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.09.2020 16:07

% Moisture:
Basis: Wet Weight

Seq Number: 3141794

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.1	9.94	mg/kg	11.09.2020 18:18		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.10.2020 13:00

% Moisture:
Basis: Wet Weight

Seq Number: 3141919

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.10.2020 21:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.10.2020 21:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.10.2020 21:10	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.10.2020 21:10	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.10.2020 21:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.10.2020 21:10	
o-Terphenyl	84-15-1	92	%	70-135	11.10.2020 21:10	



Certificate of Analytical Results 677183

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW58**
Lab Sample Id: 677183-005

Matrix: Soil
Date Collected: 11.06.2020 17:51

Date Received: 11.06.2020 16:46
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.09.2020 10:11

% Moisture:
Basis: Wet Weight

Seq Number: 3141941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.09.2020 19:37	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.09.2020 19:37	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.09.2020 19:37	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.09.2020 19:37	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.09.2020 19:37	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.09.2020 19:37	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.09.2020 19:37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.09.2020 19:37		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.09.2020 19:37		

Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.

Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3141793

MB Sample Id: 7714798-1-BLK

Matrix: Solid

LCS Sample Id: 7714798-1-BKS

Prep Method: E300P

Date Prep: 11.09.2020

LCSD Sample Id: 7714798-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	249	100	245	98	90-110	2	20	mg/kg	11.09.2020 15:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3141794

MB Sample Id: 7714802-1-BLK

Matrix: Solid

LCS Sample Id: 7714802-1-BKS

Prep Method: E300P

Date Prep: 11.09.2020

LCSD Sample Id: 7714802-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	252	101	244	98	90-110	3	20	mg/kg	11.09.2020 18:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3141793

Parent Sample Id: 677168-001

Matrix: Soil

MS Sample Id: 677168-001 S

Prep Method: E300P

Date Prep: 11.09.2020

MSD Sample Id: 677168-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	18400	198	18600	101	18600	101	90-110	0	20	mg/kg	11.09.2020 15:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3141793

Parent Sample Id: 677178-001

Matrix: Solid

MS Sample Id: 677178-001 S

Prep Method: E300P

Date Prep: 11.09.2020

MSD Sample Id: 677178-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	121	200	319	99	309	95	90-110	3	20	mg/kg	11.09.2020 16:39	

Analytical Method: Chloride by EPA 300

Seq Number: 3141794

Parent Sample Id: 677183-005

Matrix: Soil

MS Sample Id: 677183-005 S

Prep Method: E300P

Date Prep: 11.09.2020

MSD Sample Id: 677183-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.1	200	208	98	206	97	90-110	1	20	mg/kg	11.09.2020 18:23	

Analytical Method: Chloride by EPA 300

Seq Number: 3141794

Parent Sample Id: 677184-010

Matrix: Soil

MS Sample Id: 677184-010 S

Prep Method: E300P

Date Prep: 11.09.2020

MSD Sample Id: 677184-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1670	202	1870	99	1860	94	90-110	1	20	mg/kg	11.09.2020 19:40	

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.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141880

MB Sample Id: 7714835-1-BLK

Matrix: Solid

LCS Sample Id: 7714835-1-BKS

Prep Method: SW8015P

Date Prep: 11.09.2020

LCSD Sample Id: 7714835-1-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	1120	112	1100	110	70-135	2	35	mg/kg	11.09.2020 16:20	
Diesel Range Organics (DRO)	<50.0	1000	1220	122	1220	122	70-135	0	35	mg/kg	11.09.2020 16:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		128		118		70-135	%	11.09.2020 16:20
o-Terphenyl	123		119		120		70-135	%	11.09.2020 16:20

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141919

MB Sample Id: 7714921-1-BLK

Matrix: Solid

LCS Sample Id: 7714921-1-BKS

Prep Method: SW8015P

Date Prep: 11.10.2020

LCSD Sample Id: 7714921-1-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	1110	111	1160	116	70-135	4	35	mg/kg	11.10.2020 15:36	
Diesel Range Organics (DRO)	<50.0	1000	1230	123	1330	133	70-135	8	35	mg/kg	11.10.2020 15:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		130		129		70-135	%	11.10.2020 15:36
o-Terphenyl	120		119		130		70-135	%	11.10.2020 15:36

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141880

Matrix: Solid

MB Sample Id: 7714835-1-BLK

Prep Method: SW8015P

Date Prep: 11.09.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.09.2020 16:00	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141919

Matrix: Solid

MB Sample Id: 7714921-1-BLK

Prep Method: SW8015P

Date Prep: 11.10.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.10.2020 15:14	

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.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141880

Parent Sample Id: 677115-001

Matrix: Soil

MS Sample Id: 677115-001 S

Prep Method: SW8015P

Date Prep: 11.09.2020

MSD Sample Id: 677115-001 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)	<49.8	996	928	93	924	91	70-135	0	35	mg/kg	11.09.2020 17:21	
Diesel Range Organics (DRO)	<49.8	996	912	92	943	93	70-135	3	35	mg/kg	11.09.2020 17:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		99		70-135	%	11.09.2020 17:21
o-Terphenyl	94		112		70-135	%	11.09.2020 17:21

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141919

Parent Sample Id: 677299-002

Matrix: Soil

MS Sample Id: 677299-002 S

Prep Method: SW8015P

Date Prep: 11.10.2020

MSD Sample Id: 677299-002 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)	<50.1	1000	992	99	895	90	70-135	10	35	mg/kg	11.10.2020 16:39	
Diesel Range Organics (DRO)	<50.1	1000	1130	113	1040	105	70-135	8	35	mg/kg	11.10.2020 16:39	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		104		70-135	%	11.10.2020 16:39
o-Terphenyl	90		108		70-135	%	11.10.2020 16:39

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141941

MB Sample Id: 7714805-1-BLK

Matrix: Solid

LCS Sample Id: 7714805-1-BKS

Prep Method: SW5035A

Date Prep: 11.09.2020

LCSD Sample Id: 7714805-1-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	0.0968	97	0.0965	97	70-130	0	35	mg/kg	11.09.2020 10:56	
Toluene	<0.00200	0.100	0.0926	93	0.0929	93	70-130	0	35	mg/kg	11.09.2020 10:56	
Ethylbenzene	<0.00200	0.100	0.0962	96	0.0962	96	71-129	0	35	mg/kg	11.09.2020 10:56	
m,p-Xylenes	<0.00400	0.200	0.198	99	0.196	98	70-135	1	35	mg/kg	11.09.2020 10:56	
o-Xylene	<0.00200	0.100	0.0967	97	0.0957	96	71-133	1	35	mg/kg	11.09.2020 10:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		100		102		70-130	%	11.09.2020 10:56
4-Bromofluorobenzene	117		110		113		70-130	%	11.09.2020 10:56

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

$[D] = 100 * (C-A) / B$
 $RPD = 200 * |(C-E) / (C+E)|$
 $[D] = 100 * (C) / [B]$
 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.
Muy Wayno Frac Pond

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141941

Matrix: Soil

Prep Method: SW5035A

Date Prep: 11.09.2020

Parent Sample Id: 677178-001

MS Sample Id: 677178-001 S

MSD Sample Id: 677178-001 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	0.109	109	0.106	105	70-130	3	35	mg/kg	11.09.2020 13:36	
Toluene	<0.00200	0.100	0.101	101	0.101	100	70-130	0	35	mg/kg	11.09.2020 13:36	
Ethylbenzene	<0.00200	0.100	0.102	102	0.105	104	71-129	3	35	mg/kg	11.09.2020 13:36	
m,p-Xylenes	<0.00401	0.200	0.209	105	0.213	106	70-135	2	35	mg/kg	11.09.2020 13:36	
o-Xylene	<0.00200	0.100	0.103	103	0.105	104	71-133	2	35	mg/kg	11.09.2020 13:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		101		70-130	%	11.09.2020 13:36
4-Bromofluorobenzene	112		105		70-130	%	11.09.2020 13:36

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: 1637183

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 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

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

Project Name:	Muy Wayno Frac Pond	Turn Around	
Project Number:	012920104	Routine	☒
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT	Temp Blank:	☒ Yes ☐ No	Wet Ice:	☒ Yes ☐ No
Temperature (°C):	16/1.4	Thermometer ID		
Received Intact:	☒ Yes ☐ No	Correction Factor:	T-44003 -0.2	
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	5	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
FS39	S	11/5/2020	12:10	3'	1	X	X	X		Composite
SW55	S	11/5/2020	12:24	0-3'	1	X	X	X		Composite
SW56	S	11/5/2020	12:26	0-3'	1	X	X	X		Composite
SW57	S	11/5/2020	12:29	0-3'	1	X	X	X		Composite
SW58	S	11/5/2020	12:30	0-3'	1	X	X	X		Composite

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 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 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 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>	11/6/20 16:46	<i>[Signature]</i>	<i>[Signature]</i>	11/6/20 16:46

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.06.2020 04.46.00 PM

Work Order #: 677183

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

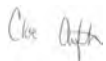
Samples received in bulk containers.

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Cloe Clifton

Date: 11.06.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.10.2020

Certificate of Analysis Summary 677374



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Tue 11.10.2020 10:30
Report Date: 11.12.2020 15:52
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	677374-001	677374-002	677374-003	677374-004	677374-005	677374-006
	<i>Field Id:</i>	FS40	FS41	FS42	FS43	FS44	FS45
	<i>Depth:</i>	4- ft	4- ft	4- ft	4- ft	4- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.09.2020 10:37	11.09.2020 11:06	11.09.2020 09:14	11.09.2020 09:16	11.09.2020 09:52	11.09.2020 10:08
BTEX by EPA 8021B	<i>Extracted:</i>	11.10.2020 13:01	11.10.2020 13:01	11.10.2020 13:01	11.10.2020 13:01	11.10.2020 13:01	11.10.2020 13:01
	<i>Analyzed:</i>	11.10.2020 23:19	11.10.2020 23:42	11.11.2020 00:04	11.11.2020 00:26	11.11.2020 00:49	11.11.2020 01:11
	<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	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00401 0.00401	<0.00401 0.00401	<0.00398 0.00398	<0.00399 0.00399	<0.00399 0.00399
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	11.10.2020 14:05	11.10.2020 14:05	11.10.2020 14:05	11.10.2020 14:05	11.10.2020 14:05	11.10.2020 14:05
	<i>Analyzed:</i>	11.10.2020 18:24	11.10.2020 18:30	11.10.2020 18:35	11.10.2020 18:41	11.10.2020 18:46	11.10.2020 18:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		197 9.98	546 10.0	763 10.0	767 9.92	5700 49.9	1750 50.0
TPH by SW8015 Mod	<i>Extracted:</i>	11.10.2020 12:03	11.10.2020 12:03	11.10.2020 12:03	11.10.2020 12:03	11.10.2020 12:03	11.10.2020 12:03
	<i>Analyzed:</i>	11.10.2020 19:48	11.10.2020 20:08	11.10.2020 20:49	11.10.2020 21:10	11.10.2020 21:30	11.10.2020 21:50
	<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	<49.9 49.9	<50.3 50.3	<50.2 50.2	<50.2 50.2
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.3 50.3	<50.2 50.2	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.3 50.3	<50.2 50.2	<50.2 50.2
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.3 50.3	<50.2 50.2	<50.2 50.2
Total TPH		<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.3 50.3	<50.2 50.2	<50.2 50.2

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 677374



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Tue 11.10.2020 10:30
Report Date: 11.12.2020 15:52
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	677374-007	677374-008	677374-009	677374-010	677374-011	
	Field Id:	SW59	SW60	SW61	SW62	SW63	
	Depth:	0-4 ft	0-4 ft	0-4 ft	0-4 ft	0-4 ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	11.09.2020 09:21	11.09.2020 09:18	11.09.2020 09:58	11.09.2020 10:01	11.09.2020 10:04	
BTEX by EPA 8021B	Extracted:	11.11.2020 09:00	11.11.2020 09:00	11.11.2020 09:00	11.11.2020 09:00	11.11.2020 09:00	
	Analyzed:	11.11.2020 11:59	11.11.2020 12:22	11.11.2020 12:44	11.11.2020 13:07	11.11.2020 13:29	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	RL	
Benzene		<0.00200	<0.00200	<0.00199	<0.00199	<0.00202	
Toluene		<0.00200	<0.00200	<0.00199	<0.00199	<0.00202	
Ethylbenzene		<0.00200	<0.00200	<0.00199	<0.00199	<0.00202	
m,p-Xylenes		<0.00399	<0.00400	<0.00398	<0.00398	<0.00404	
o-Xylene		<0.00200	<0.00200	<0.00199	<0.00199	<0.00202	
Total Xylenes		<0.00200	<0.00200	<0.00199	<0.00199	<0.00202	
Total BTEX		<0.00200	<0.00200	<0.00199	<0.00199	<0.00202	
Chloride by EPA 300	Extracted:	11.10.2020 15:30	11.10.2020 15:30	11.10.2020 15:30	11.10.2020 15:30	11.10.2020 15:30	
	Analyzed:	11.10.2020 19:25	11.10.2020 19:41	11.10.2020 19:46	11.10.2020 19:52	11.10.2020 19:57	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	RL	
Chloride		674	203	65.5	10.2	26.0	
TPH by SW8015 Mod	Extracted:	11.10.2020 12:03	11.10.2020 12:03	11.10.2020 12:03	11.10.2020 12:03	11.10.2020 12:03	
	Analyzed:	11.10.2020 22:11	11.10.2020 22:31	11.10.2020 22:51	11.10.2020 23:11	11.10.2020 23:31	
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		RL	RL	RL	RL	RL	
Gasoline Range Hydrocarbons (GRO)		<50.0	<50.1	<49.8	<49.8	<49.9	
Diesel Range Organics (DRO)		<50.0	<50.1	<49.8	<49.8	<49.9	
Motor Oil Range Hydrocarbons (MRO)		<50.0	<50.1	<49.8	<49.8	<49.9	
Total GRO-DRO		<50.0	<50.1	<49.8	<49.8	<49.9	
Total TPH		<50.0	<50.1	<49.8	<49.8	<49.9	

BRL - Below Reporting Limit

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



Analytical Report 677374

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.12.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.12.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **677374**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 677374. 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. 677374 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 677374****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS40	S	11.09.2020 10:37	4 ft	677374-001
FS41	S	11.09.2020 11:06	4 ft	677374-002
FS42	S	11.09.2020 09:14	4 ft	677374-003
FS43	S	11.09.2020 09:16	4 ft	677374-004
FS44	S	11.09.2020 09:52	4 ft	677374-005
FS45	S	11.09.2020 10:08	4 ft	677374-006
SW59	S	11.09.2020 09:21	0 - 4 ft	677374-007
SW60	S	11.09.2020 09:18	0 - 4 ft	677374-008
SW61	S	11.09.2020 09:58	0 - 4 ft	677374-009
SW62	S	11.09.2020 10:01	0 - 4 ft	677374-010
SW63	S	11.09.2020 10:04	0 - 4 ft	677374-011



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 677374

Report Date: 11.12.2020
Date Received: 11.10.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS40**
 Lab Sample Id: 677374-001

Matrix: Soil
 Date Collected: 11.09.2020 10:37

Date Received: 11.10.2020 10:30
 Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.10.2020 14:05

% Moisture:
 Basis: Wet Weight

Seq Number: 3141921

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	197	9.98	mg/kg	11.10.2020 18:24		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.10.2020 12:03

% Moisture:
 Basis: Wet Weight

Seq Number: 3141920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.10.2020 19:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.10.2020 19:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.10.2020 19:48	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.10.2020 19:48	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.10.2020 19:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.10.2020 19:48	
o-Terphenyl	84-15-1	104	%	70-135	11.10.2020 19:48	



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS40**
Lab Sample Id: 677374-001

Matrix: Soil
Date Collected: 11.09.2020 10:37

Date Received: 11.10.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.10.2020 13:01

% Moisture:
Basis: Wet Weight

Seq Number: 3141914

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.10.2020 23:19	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.10.2020 23:19	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.10.2020 23:19	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.10.2020 23:19	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.10.2020 23:19	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.10.2020 23:19	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.10.2020 23:19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.10.2020 23:19		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.10.2020 23:19		



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS41**
Lab Sample Id: 677374-002

Matrix: Soil
Date Collected: 11.09.2020 11:06

Date Received: 11.10.2020 10:30
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.10.2020 14:05

% Moisture:
Basis: Wet Weight

Seq Number: 3141921

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	546	10.0	mg/kg	11.10.2020 18:30		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.10.2020 12:03

% Moisture:
Basis: Wet Weight

Seq Number: 3141920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.10.2020 20:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.10.2020 20:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.10.2020 20:08	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.10.2020 20:08	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.10.2020 20:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.10.2020 20:08	
o-Terphenyl	84-15-1	110	%	70-135	11.10.2020 20:08	



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS41**
Lab Sample Id: 677374-002

Matrix: Soil
Date Collected: 11.09.2020 11:06

Date Received: 11.10.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.10.2020 13:01

% Moisture:
Basis: Wet Weight

Seq Number: 3141914

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.10.2020 23:42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.10.2020 23:42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.10.2020 23:42	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.10.2020 23:42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.10.2020 23:42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.10.2020 23:42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.10.2020 23:42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.10.2020 23:42		
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.10.2020 23:42		



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS42** Matrix: Soil Date Received: 11.10.2020 10:30
 Lab Sample Id: 677374-003 Date Collected: 11.09.2020 09:14 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.10.2020 14:05 % Moisture:
 Seq Number: 3141921 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	763	10.0	mg/kg	11.10.2020 18:35		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.10.2020 12:03 % Moisture:
 Seq Number: 3141920 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.10.2020 20:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.10.2020 20:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.10.2020 20:49	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.10.2020 20:49	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.10.2020 20:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.10.2020 20:49	
o-Terphenyl	84-15-1	96	%	70-135	11.10.2020 20:49	



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS42**
Lab Sample Id: 677374-003

Matrix: Soil
Date Collected: 11.09.2020 09:14

Date Received: 11.10.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.10.2020 13:01

% Moisture:
Basis: Wet Weight

Seq Number: 3141914

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.11.2020 00:04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.11.2020 00:04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.11.2020 00:04	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.11.2020 00:04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.11.2020 00:04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.11.2020 00:04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.11.2020 00:04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	125	%	70-130	11.11.2020 00:04		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.11.2020 00:04		



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS43**
Lab Sample Id: 677374-004

Matrix: Soil
Date Collected: 11.09.2020 09:16

Date Received: 11.10.2020 10:30
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.10.2020 14:05

% Moisture:
Basis: Wet Weight

Seq Number: 3141921

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	767	9.92	mg/kg	11.10.2020 18:41		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.10.2020 12:03

% Moisture:
Basis: Wet Weight

Seq Number: 3141920

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.10.2020 21:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.10.2020 21:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.10.2020 21:10	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.10.2020 21:10	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.10.2020 21:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	11.10.2020 21:10	
o-Terphenyl	84-15-1	104	%	70-135	11.10.2020 21:10	



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS43**
Lab Sample Id: 677374-004

Matrix: Soil
Date Collected: 11.09.2020 09:16

Date Received: 11.10.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.10.2020 13:01

% Moisture:
Basis: Wet Weight

Seq Number: 3141914

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.11.2020 00:26	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.11.2020 00:26	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.11.2020 00:26	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.11.2020 00:26	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.11.2020 00:26	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.11.2020 00:26	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.11.2020 00:26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.11.2020 00:26		
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.11.2020 00:26		



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS44** Matrix: Soil Date Received: 11.10.2020 10:30
 Lab Sample Id: 677374-005 Date Collected: 11.09.2020 09:52 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.10.2020 14:05 % Moisture:
 Seq Number: 3141921 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5700	49.9	mg/kg	11.10.2020 18:46		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.10.2020 12:03 % Moisture:
 Seq Number: 3141920 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.10.2020 21:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.10.2020 21:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.10.2020 21:30	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.10.2020 21:30	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.10.2020 21:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.10.2020 21:30	
o-Terphenyl	84-15-1	108	%	70-135	11.10.2020 21:30	



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS44**
Lab Sample Id: 677374-005

Matrix: Soil
Date Collected: 11.09.2020 09:52

Date Received: 11.10.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.10.2020 13:01

% Moisture:
Basis: Wet Weight

Seq Number: 3141914

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.11.2020 00:49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.11.2020 00:49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.11.2020 00:49	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.11.2020 00:49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.11.2020 00:49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.11.2020 00:49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.11.2020 00:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.11.2020 00:49		
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.11.2020 00:49		



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS45** Matrix: Soil Date Received: 11.10.2020 10:30
 Lab Sample Id: 677374-006 Date Collected: 11.09.2020 10:08 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.10.2020 14:05 % Moisture:
 Seq Number: 3141921 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1750	50.0	mg/kg	11.10.2020 18:52		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.10.2020 12:03 % Moisture:
 Seq Number: 3141920 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.10.2020 21:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.10.2020 21:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.10.2020 21:50	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.10.2020 21:50	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.10.2020 21:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	11.10.2020 21:50	
o-Terphenyl	84-15-1	116	%	70-135	11.10.2020 21:50	



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS45**
Lab Sample Id: 677374-006

Matrix: Soil
Date Collected: 11.09.2020 10:08

Date Received: 11.10.2020 10:30
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.10.2020 13:01

% Moisture:
Basis: Wet Weight

Seq Number: 3141914

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.11.2020 01:11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.11.2020 01:11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.11.2020 01:11	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.11.2020 01:11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.11.2020 01:11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.11.2020 01:11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.11.2020 01:11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.11.2020 01:11		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.11.2020 01:11		



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW59** Matrix: Soil Date Received: 11.10.2020 10:30
 Lab Sample Id: 677374-007 Date Collected: 11.09.2020 09:21 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.10.2020 15:30 % Moisture:
 Seq Number: 3141922 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	674	9.94	mg/kg	11.10.2020 19:25		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.10.2020 12:03 % Moisture:
 Seq Number: 3141920 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.10.2020 22:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.10.2020 22:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.10.2020 22:11	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.10.2020 22:11	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.10.2020 22:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.10.2020 22:11	
o-Terphenyl	84-15-1	112	%	70-135	11.10.2020 22:11	



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW59**
Lab Sample Id: 677374-007

Matrix: Soil
Date Collected: 11.09.2020 09:21

Date Received: 11.10.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.11.2020 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142036

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.11.2020 11:59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.11.2020 11:59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.11.2020 11:59	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.11.2020 11:59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.11.2020 11:59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.11.2020 11:59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.11.2020 11:59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.11.2020 11:59		
4-Bromofluorobenzene	460-00-4	107	%	70-130	11.11.2020 11:59		



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW60** Matrix: Soil Date Received: 11.10.2020 10:30
 Lab Sample Id: 677374-008 Date Collected: 11.09.2020 09:18 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.10.2020 15:30 % Moisture:
 Seq Number: 3141922 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	203	10.0	mg/kg	11.10.2020 19:41		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.10.2020 12:03 % Moisture:
 Seq Number: 3141920 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.10.2020 22:31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.10.2020 22:31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.10.2020 22:31	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.10.2020 22:31	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.10.2020 22:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	11.10.2020 22:31	
o-Terphenyl	84-15-1	98	%	70-135	11.10.2020 22:31	



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW60**
Lab Sample Id: 677374-008

Matrix: Soil
Date Collected: 11.09.2020 09:18

Date Received: 11.10.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.11.2020 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142036

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.11.2020 12:22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.11.2020 12:22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.11.2020 12:22	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.11.2020 12:22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.11.2020 12:22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.11.2020 12:22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.11.2020 12:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.11.2020 12:22		
4-Bromofluorobenzene	460-00-4	105	%	70-130	11.11.2020 12:22		



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW61** Matrix: Soil Date Received: 11.10.2020 10:30
 Lab Sample Id: 677374-009 Date Collected: 11.09.2020 09:58 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.10.2020 15:30 % Moisture:
 Seq Number: 3141922 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	65.5	10.0	mg/kg	11.10.2020 19:46		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.10.2020 12:03 % Moisture:
 Seq Number: 3141920 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.10.2020 22:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.10.2020 22:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.10.2020 22:51	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.10.2020 22:51	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.10.2020 22:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.10.2020 22:51	
o-Terphenyl	84-15-1	112	%	70-135	11.10.2020 22:51	



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW61**
Lab Sample Id: 677374-009

Matrix: Soil
Date Collected: 11.09.2020 09:58

Date Received: 11.10.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.11.2020 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142036

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.11.2020 12:44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.11.2020 12:44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.11.2020 12:44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.11.2020 12:44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.11.2020 12:44	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.11.2020 12:44	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.11.2020 12:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.11.2020 12:44		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.11.2020 12:44		



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW62** Matrix: Soil Date Received: 11.10.2020 10:30
 Lab Sample Id: 677374-010 Date Collected: 11.09.2020 10:01 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.10.2020 15:30 % Moisture:
 Seq Number: 3141922 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.2	10.0	mg/kg	11.10.2020 19:52		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.10.2020 12:03 % Moisture:
 Seq Number: 3141920 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.10.2020 23:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.10.2020 23:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.10.2020 23:11	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.10.2020 23:11	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.10.2020 23:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.10.2020 23:11	
o-Terphenyl	84-15-1	98	%	70-135	11.10.2020 23:11	



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW62**
Lab Sample Id: 677374-010

Matrix: Soil
Date Collected: 11.09.2020 10:01

Date Received: 11.10.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.11.2020 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142036

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.11.2020 13:07	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.11.2020 13:07	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.11.2020 13:07	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.11.2020 13:07	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.11.2020 13:07	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.11.2020 13:07	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.11.2020 13:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	11.11.2020 13:07		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.11.2020 13:07		



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW63** Matrix: Soil Date Received: 11.10.2020 10:30
 Lab Sample Id: 677374-011 Date Collected: 11.09.2020 10:04 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.10.2020 15:30 % Moisture:
 Seq Number: 3141922 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26.0	9.94	mg/kg	11.10.2020 19:57		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.10.2020 12:03 % Moisture:
 Seq Number: 3141920 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.10.2020 23:31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.10.2020 23:31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.10.2020 23:31	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.10.2020 23:31	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.10.2020 23:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.10.2020 23:31	
o-Terphenyl	84-15-1	106	%	70-135	11.10.2020 23:31	



Certificate of Analytical Results 677374

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW63**
Lab Sample Id: 677374-011

Matrix: Soil
Date Collected: 11.09.2020 10:04

Date Received: 11.10.2020 10:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.11.2020 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142036

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.11.2020 13:29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.11.2020 13:29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.11.2020 13:29	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.11.2020 13:29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.11.2020 13:29	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.11.2020 13:29	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.11.2020 13:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.11.2020 13:29		
4-Bromofluorobenzene	460-00-4	108	%	70-130	11.11.2020 13:29		

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.
Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3141921

MB Sample Id: 7714902-1-BLK

Matrix: Solid

LCS Sample Id: 7714902-1-BKS

Prep Method: E300P

Date Prep: 11.10.2020

LCSD Sample Id: 7714902-1-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	247	99	90-110	2	20	mg/kg	11.10.2020 16:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3141922

MB Sample Id: 7714926-1-BLK

Matrix: Solid

LCS Sample Id: 7714926-1-BKS

Prep Method: E300P

Date Prep: 11.10.2020

LCSD Sample Id: 7714926-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	257	103	249	100	90-110	3	20	mg/kg	11.10.2020 19:14	

Analytical Method: Chloride by EPA 300

Seq Number: 3141921

Parent Sample Id: 677299-002

Matrix: Soil

MS Sample Id: 677299-002 S

Prep Method: E300P

Date Prep: 11.10.2020

MSD Sample Id: 677299-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	483	200	685	101	686	101	90-110	0	20	mg/kg	11.10.2020 16:29	

Analytical Method: Chloride by EPA 300

Seq Number: 3141921

Parent Sample Id: 677372-003

Matrix: Soil

MS Sample Id: 677372-003 S

Prep Method: E300P

Date Prep: 11.10.2020

MSD Sample Id: 677372-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	17400	200	17600	100	17600	100	90-110	0	20	mg/kg	11.10.2020 17:57	

Analytical Method: Chloride by EPA 300

Seq Number: 3141922

Parent Sample Id: 677264-014

Matrix: Soil

MS Sample Id: 677264-014 S

Prep Method: E300P

Date Prep: 11.10.2020

MSD Sample Id: 677264-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	150	200	351	101	350	100	90-110	0	20	mg/kg	11.11.2020 10:15	

Analytical Method: Chloride by EPA 300

Seq Number: 3141922

Parent Sample Id: 677374-007

Matrix: Soil

MS Sample Id: 677374-007 S

Prep Method: E300P

Date Prep: 11.10.2020

MSD Sample Id: 677374-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	674	199	863	95	868	97	90-110	1	20	mg/kg	11.10.2020 19:30	

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

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

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

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



LT Environmental, Inc.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141920

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.10.2020

MB Sample Id: 7714924-1-BLK

LCS Sample Id: 7714924-1-BKS

LCSD Sample Id: 7714924-1-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	948	95	928	93	70-135	2	35	mg/kg	11.10.2020 15:36	
Diesel Range Organics (DRO)	<50.0	1000	1040	104	1040	104	70-135	0	35	mg/kg	11.10.2020 15:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		128		110		70-135	%	11.10.2020 15:36
o-Terphenyl	98		98		100		70-135	%	11.10.2020 15:36

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141920

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.10.2020

MB Sample Id: 7714924-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.10.2020 15:14	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3141920

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.10.2020

Parent Sample Id: 677371-001

MS Sample Id: 677371-001 S

MSD Sample Id: 677371-001 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)	<49.8	995	922	93	925	93	70-135	0	35	mg/kg	11.10.2020 16:39	
Diesel Range Organics (DRO)	<49.8	995	911	92	920	92	70-135	1	35	mg/kg	11.10.2020 16:39	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		110		70-135	%	11.10.2020 16:39
o-Terphenyl	118		94		70-135	%	11.10.2020 16:39

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141914

Matrix: Solid

Prep Method: SW5035A

Date Prep: 11.10.2020

MB Sample Id: 7714901-1-BLK

LCS Sample Id: 7714901-1-BKS

LCSD Sample Id: 7714901-1-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	0.0955	96	0.0977	98	70-130	2	35	mg/kg	11.10.2020 15:04	
Toluene	<0.00200	0.100	0.0906	91	0.0902	90	70-130	0	35	mg/kg	11.10.2020 15:04	
Ethylbenzene	<0.00200	0.100	0.0934	93	0.0939	94	71-129	1	35	mg/kg	11.10.2020 15:04	
m,p-Xylenes	<0.00400	0.200	0.195	98	0.192	96	70-135	2	35	mg/kg	11.10.2020 15:04	
o-Xylene	<0.00200	0.100	0.0941	94	0.0949	95	71-133	1	35	mg/kg	11.10.2020 15:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		99		101		70-130	%	11.10.2020 15:04
4-Bromofluorobenzene	112		107		110		70-130	%	11.10.2020 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.
Muy Wayno Frac Pond

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142036

Matrix: Solid

Prep Method: SW5035A

Date Prep: 11.11.2020

MB Sample Id: 7714968-1-BLK

LCS Sample Id: 7714968-1-BKS

LCSD Sample Id: 7714968-1-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	0.0977	98	0.0988	99	70-130	1	35	mg/kg	11.11.2020 09:57	
Toluene	<0.00200	0.100	0.0765	77	0.0780	78	70-130	2	35	mg/kg	11.11.2020 09:57	
Ethylbenzene	<0.00200	0.100	0.0963	96	0.0980	98	71-129	2	35	mg/kg	11.11.2020 09:57	
m,p-Xylenes	<0.00400	0.200	0.193	97	0.197	99	70-135	2	35	mg/kg	11.11.2020 09:57	
o-Xylene	<0.00200	0.100	0.0961	96	0.0979	98	71-133	2	35	mg/kg	11.11.2020 09:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		99		98		70-130	%	11.11.2020 09:57
4-Bromofluorobenzene	103		100		100		70-130	%	11.11.2020 09:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3141914

Matrix: Soil

Prep Method: SW5035A

Date Prep: 11.10.2020

Parent Sample Id: 677299-002

MS Sample Id: 677299-002 S

MSD Sample Id: 677299-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.112	111	0.108	108	70-130	4	35	mg/kg	11.10.2020 15:48	
Toluene	<0.00201	0.101	0.106	105	0.102	102	70-130	4	35	mg/kg	11.10.2020 15:48	
Ethylbenzene	<0.00201	0.101	0.110	109	0.106	106	71-129	4	35	mg/kg	11.10.2020 15:48	
m,p-Xylenes	<0.00402	0.201	0.221	110	0.214	107	70-135	3	35	mg/kg	11.10.2020 15:48	
o-Xylene	<0.00201	0.101	0.111	110	0.107	107	71-133	4	35	mg/kg	11.10.2020 15:48	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		101		70-130	%	11.10.2020 15:48
4-Bromofluorobenzene	112		112		70-130	%	11.10.2020 15:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142036

Matrix: Soil

Prep Method: SW5035A

Date Prep: 11.11.2020

Parent Sample Id: 677374-007

MS Sample Id: 677374-007 S

MSD Sample Id: 677374-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0956	96	0.100	100	70-130	4	35	mg/kg	11.11.2020 10:42	
Toluene	<0.00201	0.100	0.0751	75	0.0783	78	70-130	4	35	mg/kg	11.11.2020 10:42	
Ethylbenzene	<0.00201	0.100	0.0942	94	0.0982	98	71-129	4	35	mg/kg	11.11.2020 10:42	
m,p-Xylenes	<0.00402	0.201	0.189	94	0.198	99	70-135	5	35	mg/kg	11.11.2020 10:42	
o-Xylene	<0.00201	0.100	0.0935	94	0.0977	98	71-133	4	35	mg/kg	11.11.2020 10:42	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		70-130	%	11.11.2020 10:42
4-Bromofluorobenzene	106		101		70-130	%	11.11.2020 10:42

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. 1077374

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 2

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

ANALYSIS REQUEST

Work Order Notes

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

Project Name:	Muy Wayno Frac Pond	Turn Around	
Project Number:	012920104	Routine	☒
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	Sample Comments
FS40	S	11/9/2020	10:37	4'	1	X	X	X	Composite
FS41	S	11/9/2020	11:06	4'	1	X	X	X	Composite
FS42	S	11/9/2020	9:14	4'	1	X	X	X	Composite
FS43	S	11/9/2020	9:16	4'	1	X	X	X	Composite
FS44	S	11/9/2020	9:52	4'	1	X	X	X	Composite
FS45	S	11/9/2020	10:08	4'	1	X	X	X	Composite
SW59	S	11/9/2020	9:21	0-4'	1	X	X	X	Composite
SW60	S	11/9/2020	9:18	0-4'	1	X	X	X	Composite
SW61	S	11/9/2020	9:58	0-4'	1	X	X	X	Composite
SW62	S	11/9/2020	10:01	0-4'	1	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

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>	11/10/20 10:20	<i>[Signature]</i>	<i>[Signature]</i>	11-10-20 10:30



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) 281-2400
Hobbs, NM (575-392-7550)

Chain of Custody

Work Order No: 677379

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Page 1 of 5

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

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

Project Name:	Muy Wayno Frac Pond	Turn Around	
Project Number:	12920104	Routine	P
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT

Temperature (^o C):	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Received Inlact:	Yes	No		Thermometer ID		
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:		
Sample Custody Seals:	Yes	No	N/A	Total Containers:		

[Handwritten signature]

Number of Containers

(EPA 8015)	
(EPA 0=8021)	
(EPA 300.0)	
TAT starts the day received by the lab, if received by 4:30pm	

[illegible]

Total 200.7 / 6010 200.8 / 6020:

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sll U V Zn

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

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U

1631 / 245.1 / 1410 / 1411 : 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
		11/10/20 1020			11-16-26 1030

Revised Date 05/14/18 Rev. 2018.

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.10.2020 10.30.00 AM

Work Order #: 677374

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T_NM_007

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



Cloe Clifton

Date: 11.10.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.11.2020

Certificate of Analysis Summary 677806



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 11.12.2020 16:37
Report Date: 11.17.2020 09:11
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	677806-001	677806-002	677806-003	677806-004	677806-005	677806-006
	<i>Field Id:</i>	FS50	FS51	FS52	FS53	FS54	FS55
	<i>Depth:</i>	2- ft	2- ft	2- ft	2- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.12.2020 10:23	11.12.2020 10:25	11.12.2020 10:27	11.12.2020 10:28	11.12.2020 13:31	11.12.2020 13:33
BTEX by EPA 8021B	<i>Extracted:</i>	11.13.2020 17:37	11.13.2020 17:37	11.13.2020 17:37	11.13.2020 17:37	11.13.2020 17:37	11.13.2020 17:37
	<i>Analyzed:</i>	11.13.2020 22:41	11.13.2020 23:03	11.13.2020 23:26	11.13.2020 23:48	11.14.2020 00:11	11.14.2020 00:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00404 0.00404	<0.00404 0.00404	<0.00398 0.00398	<0.00399 0.00399	<0.00401 0.00401
o-Xylene		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	11.13.2020 14:42	11.13.2020 14:42	11.13.2020 14:42	11.13.2020 14:42	11.13.2020 17:59	11.13.2020 17:59
	<i>Analyzed:</i>	11.13.2020 19:30	11.13.2020 19:36	11.13.2020 19:41	11.13.2020 19:47	11.13.2020 20:20	11.13.2020 20:36
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		65.9 10.0	114 10.1	99.2 10.1	65.1 10.1	344 9.96	224 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	11.13.2020 17:03	11.13.2020 17:03	11.13.2020 17:03	11.13.2020 17:03	11.13.2020 17:03	11.13.2020 17:03
	<i>Analyzed:</i>	11.13.2020 23:18	11.14.2020 00:18	11.14.2020 00:39	11.14.2020 00:59	11.14.2020 01:19	11.14.2020 01:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<49.9 49.9
Diesel Range Organics (DRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<49.9 49.9
Total GRO-DRO		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<49.9 49.9
Total TPH		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<49.9 49.9

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 677806



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 11.12.2020 16:37
Report Date: 11.17.2020 09:11
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	677806-007					
	Field Id:	SW70					
	Depth:	0-3 ft					
	Matrix:	SOIL					
	Sampled:	11.12.2020 13:36					
BTEX by EPA 8021B	Extracted:	11.13.2020 17:37					
	Analyzed:	11.14.2020 00:56					
	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:	11.13.2020 17:59					
	Analyzed:	11.13.2020 20:42					
	Units/RL:	mg/kg RL					
Chloride		58.6 10.0					
TPH by SW8015 Mod	Extracted:	11.13.2020 17:03					
	Analyzed:	11.14.2020 02:00					
	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					

BRL - Below Reporting Limit

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



Analytical Report 677806

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.17.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.17.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **677806**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 677806. 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. 677806 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 677806****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS50	S	11.12.2020 10:23	2 ft	677806-001
FS51	S	11.12.2020 10:25	2 ft	677806-002
FS52	S	11.12.2020 10:27	2 ft	677806-003
FS53	S	11.12.2020 10:28	2 ft	677806-004
FS54	S	11.12.2020 13:31	3 ft	677806-005
FS55	S	11.12.2020 13:33	3 ft	677806-006
SW70	S	11.12.2020 13:36	0 - 3 ft	677806-007



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 677806

Report Date: 11.17.2020
Date Received: 11.12.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 677806

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS50**
Lab Sample Id: 677806-001

Matrix: Soil
Date Collected: 11.12.2020 10:23

Date Received: 11.12.2020 16:37
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 14:42

% Moisture:
Basis: Wet Weight

Seq Number: 3142336

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	65.9	10.0	mg/kg	11.13.2020 19:30		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: CAC

Analyst: CAC

Date Prep: 11.13.2020 17:03

% Moisture:
Basis: Wet Weight

Seq Number: 3142312

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.13.2020 23:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.13.2020 23:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.13.2020 23:18	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.13.2020 23:18	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.13.2020 23:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.13.2020 23:18	
o-Terphenyl	84-15-1	116	%	70-135	11.13.2020 23:18	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS50**
Lab Sample Id: 677806-001

Matrix: Soil
Date Collected: 11.12.2020 10:23

Date Received: 11.12.2020 16:37
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.13.2020 22:41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.13.2020 22:41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.13.2020 22:41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.13.2020 22:41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.13.2020 22:41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.13.2020 22:41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.13.2020 22:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.13.2020 22:41	
4-Bromofluorobenzene	460-00-4	88	%	70-130	11.13.2020 22:41	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS51** Matrix: Soil Date Received: 11.12.2020 16:37
 Lab Sample Id: 677806-002 Date Collected: 11.12.2020 10:25 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.13.2020 14:42 % Moisture:
 Seq Number: 3142336 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	114	10.1	mg/kg	11.13.2020 19:36		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: CAC
 Analyst: CAC Date Prep: 11.13.2020 17:03 % Moisture:
 Seq Number: 3142312 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.14.2020 00:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.14.2020 00:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.14.2020 00:18	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.14.2020 00:18	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.14.2020 00:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	11.14.2020 00:18	
o-Terphenyl	84-15-1	108	%	70-135	11.14.2020 00:18	



Certificate of Analytical Results 677806

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS51**
 Lab Sample Id: 677806-002

Matrix: Soil
 Date Collected: 11.12.2020 10:25

Date Received: 11.12.2020 16:37
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
 Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.13.2020 23:03	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.13.2020 23:03	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.13.2020 23:03	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.13.2020 23:03	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.13.2020 23:03	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.13.2020 23:03	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.13.2020 23:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	11.13.2020 23:03		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.13.2020 23:03		



Certificate of Analytical Results 677806

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS52**
Lab Sample Id: 677806-003

Matrix: Soil
Date Collected: 11.12.2020 10:27

Date Received: 11.12.2020 16:37
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 14:42

% Moisture:
Basis: Wet Weight

Seq Number: 3142336

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	99.2	10.1	mg/kg	11.13.2020 19:41		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: CAC

Analyst: CAC

Date Prep: 11.13.2020 17:03

% Moisture:
Basis: Wet Weight

Seq Number: 3142312

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.14.2020 00:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.14.2020 00:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.14.2020 00:39	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.14.2020 00:39	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.14.2020 00:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	11.14.2020 00:39	
o-Terphenyl	84-15-1	112	%	70-135	11.14.2020 00:39	



Certificate of Analytical Results 677806

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS52**
 Lab Sample Id: 677806-003

Matrix: Soil
 Date Collected: 11.12.2020 10:27

Date Received: 11.12.2020 16:37
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
 Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.13.2020 23:26	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.13.2020 23:26	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.13.2020 23:26	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.13.2020 23:26	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.13.2020 23:26	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.13.2020 23:26	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.13.2020 23:26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.13.2020 23:26		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.13.2020 23:26		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS53** Matrix: Soil Date Received: 11.12.2020 16:37
 Lab Sample Id: 677806-004 Date Collected: 11.12.2020 10:28 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.13.2020 14:42 % Moisture:
 Seq Number: 3142336 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	65.1	10.1	mg/kg	11.13.2020 19:47		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: CAC
 Analyst: CAC Date Prep: 11.13.2020 17:03 % Moisture:
 Seq Number: 3142312 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.14.2020 00:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.14.2020 00:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.14.2020 00:59	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.14.2020 00:59	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.14.2020 00:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.14.2020 00:59	
o-Terphenyl	84-15-1	106	%	70-135	11.14.2020 00:59	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS53**
 Lab Sample Id: 677806-004

Matrix: Soil
 Date Collected: 11.12.2020 10:28

Date Received: 11.12.2020 16:37
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
 Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.13.2020 23:48	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.13.2020 23:48	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.13.2020 23:48	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.13.2020 23:48	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.13.2020 23:48	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	11.13.2020 23:48	U	1
Total BTEX		<0.00199	0.00199	mg/kg	11.13.2020 23:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.13.2020 23:48	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.13.2020 23:48	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS54** Matrix: Soil Date Received: 11.12.2020 16:37
 Lab Sample Id: 677806-005 Date Collected: 11.12.2020 13:31 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.13.2020 17:59 % Moisture:
 Seq Number: 3142337 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	344	9.96	mg/kg	11.13.2020 20:20		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: CAC
 Analyst: CAC Date Prep: 11.13.2020 17:03 % Moisture:
 Seq Number: 3142312 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.14.2020 01:19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.14.2020 01:19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.14.2020 01:19	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.14.2020 01:19	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.14.2020 01:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.14.2020 01:19	
o-Terphenyl	84-15-1	96	%	70-135	11.14.2020 01:19	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS54**
Lab Sample Id: 677806-005

Matrix: Soil
Date Collected: 11.12.2020 13:31

Date Received: 11.12.2020 16:37
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.14.2020 00:11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.14.2020 00:11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.14.2020 00:11	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.14.2020 00:11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.14.2020 00:11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.14.2020 00:11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.14.2020 00:11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	11.14.2020 00:11		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.14.2020 00:11		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS55** Matrix: **Soil** Date Received: 11.12.2020 16:37
 Lab Sample Id: 677806-006 Date Collected: 11.12.2020 13:33 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: **MAB**
 Analyst: **MAB** Date Prep: 11.13.2020 17:59 % Moisture:
 Seq Number: 3142337 Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	224	10.0	mg/kg	11.13.2020 20:36		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: **CAC**
 Analyst: **CAC** Date Prep: 11.13.2020 17:03 % Moisture:
 Seq Number: 3142312 Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.14.2020 01:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.14.2020 01:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.14.2020 01:39	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.14.2020 01:39	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.14.2020 01:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.14.2020 01:39	
o-Terphenyl	84-15-1	112	%	70-135	11.14.2020 01:39	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS55**
 Lab Sample Id: 677806-006

Matrix: Soil
 Date Collected: 11.12.2020 13:33

Date Received: 11.12.2020 16:37
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
 Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.14.2020 00:33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.14.2020 00:33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.14.2020 00:33	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.14.2020 00:33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.14.2020 00:33	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.14.2020 00:33	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.14.2020 00:33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.14.2020 00:33		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.14.2020 00:33		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW70**
Lab Sample Id: 677806-007

Matrix: Soil
Date Collected: 11.12.2020 13:36

Date Received: 11.12.2020 16:37
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:59

% Moisture:
Basis: Wet Weight

Seq Number: 3142337

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	58.6	10.0	mg/kg	11.13.2020 20:42		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: CAC

Analyst: CAC

Date Prep: 11.13.2020 17:03

% Moisture:
Basis: Wet Weight

Seq Number: 3142312

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.14.2020 02:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.14.2020 02:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.14.2020 02:00	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.14.2020 02:00	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.14.2020 02:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	11.14.2020 02:00	
o-Terphenyl	84-15-1	118	%	70-135	11.14.2020 02:00	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW70**
 Lab Sample Id: 677806-007

Matrix: Soil
 Date Collected: 11.12.2020 13:36

Date Received: 11.12.2020 16:37
 Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
 Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.14.2020 00:56	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.14.2020 00:56	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.14.2020 00:56	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.14.2020 00:56	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.14.2020 00:56	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.14.2020 00:56	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.14.2020 00:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	88	%	70-130	11.14.2020 00:56	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.14.2020 00:56	

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.
Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3142336

MB Sample Id: 7715159-1-BLK

Matrix: Solid

LCS Sample Id: 7715159-1-BKS

Prep Method: E300P

Date Prep: 11.13.2020

LCSD Sample Id: 7715159-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	249	100	244	98	90-110	2	20	mg/kg	11.13.2020 17:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3142337

MB Sample Id: 7715203-1-BLK

Matrix: Solid

LCS Sample Id: 7715203-1-BKS

Prep Method: E300P

Date Prep: 11.13.2020

LCSD Sample Id: 7715203-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	249	100	244	98	90-110	2	20	mg/kg	11.13.2020 20:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3142336

Parent Sample Id: 677780-013

Matrix: Soil

MS Sample Id: 677780-013 S

Prep Method: E300P

Date Prep: 11.13.2020

MSD Sample Id: 677780-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	19.7	199	213	97	217	99	90-110	2	20	mg/kg	11.13.2020 17:30	

Analytical Method: Chloride by EPA 300

Seq Number: 3142336

Parent Sample Id: 677780-045

Matrix: Soil

MS Sample Id: 677780-045 S

Prep Method: E300P

Date Prep: 11.13.2020

MSD Sample Id: 677780-045 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	134	201	327	96	334	99	90-110	2	20	mg/kg	11.13.2020 18:47	

Analytical Method: Chloride by EPA 300

Seq Number: 3142337

Parent Sample Id: 677806-005

Matrix: Soil

MS Sample Id: 677806-005 S

Prep Method: E300P

Date Prep: 11.13.2020

MSD Sample Id: 677806-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	344	200	543	100	540	98	90-110	1	20	mg/kg	11.13.2020 20:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3142337

Parent Sample Id: 677810-003

Matrix: Soil

MS Sample Id: 677810-003 S

Prep Method: E300P

Date Prep: 11.13.2020

MSD Sample Id: 677810-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	20.0	199	217	99	217	99	90-110	0	20	mg/kg	11.13.2020 21:42	

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

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

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

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



LT Environmental, Inc.

Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142312

MB Sample Id: 7715201-1-BLK

Matrix: Solid

LCS Sample Id: 7715201-1-BKS

Prep Method: SW8015P

Date Prep: 11.13.2020

LCSD Sample Id: 7715201-1-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	1040	104	1140	114	70-135	9	35	mg/kg	11.13.2020 22:37	
Diesel Range Organics (DRO)	<50.0	1000	1080	108	1030	103	70-135	5	35	mg/kg	11.13.2020 22:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	134		110		115		70-135	%	11.13.2020 22:37
o-Terphenyl	130		130		117		70-135	%	11.13.2020 22:37

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142312

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.13.2020

MB Sample Id: 7715201-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.13.2020 22:17	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142312

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.13.2020

Parent Sample Id: 677806-001

MS Sample Id: 677806-001 S

MSD Sample Id: 677806-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1080	108	1130	113	70-135	5	35	mg/kg	11.13.2020 23:38	
Diesel Range Organics (DRO)	<50.0	1000	1140	114	1110	111	70-135	3	35	mg/kg	11.13.2020 23:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		119		70-135	%	11.13.2020 23:38
o-Terphenyl	96		106		70-135	%	11.13.2020 23:38

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142322

Matrix: Solid

Prep Method: SW5035A

Date Prep: 11.13.2020

MB Sample Id: 7715196-1-BLK

LCS Sample Id: 7715196-1-BKS

LCSD Sample Id: 7715196-1-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	0.101	101	0.104	104	70-130	3	35	mg/kg	11.13.2020 19:53	
Toluene	<0.00200	0.100	0.0977	98	0.100	100	70-130	2	35	mg/kg	11.13.2020 19:53	
Ethylbenzene	<0.00200	0.100	0.0909	91	0.0932	93	71-129	2	35	mg/kg	11.13.2020 19:53	
m,p-Xylenes	<0.00400	0.200	0.183	92	0.188	94	70-135	3	35	mg/kg	11.13.2020 19:53	
o-Xylene	<0.00200	0.100	0.0908	91	0.0933	93	71-133	3	35	mg/kg	11.13.2020 19:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		100		99		70-130	%	11.13.2020 19:53
4-Bromofluorobenzene	92		84		86		70-130	%	11.13.2020 19:53

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.

Muy Wayno Frac Pond

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142322

Parent Sample Id: 677780-055

Matrix: Soil

MS Sample Id: 677780-055 S

Prep Method: SW5035A

Date Prep: 11.13.2020

MSD Sample Id: 677780-055 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	0.108	107	0.118	118	70-130	9	35	mg/kg	11.13.2020 20:38	
Toluene	<0.00201	0.101	0.100	99	0.111	111	70-130	10	35	mg/kg	11.13.2020 20:38	
Ethylbenzene	<0.00201	0.101	0.0897	89	0.0996	100	71-129	10	35	mg/kg	11.13.2020 20:38	
m,p-Xylenes	<0.00402	0.201	0.180	90	0.201	100	70-135	11	35	mg/kg	11.13.2020 20:38	
o-Xylene	<0.00201	0.101	0.0894	89	0.0991	99	71-133	10	35	mg/kg	11.13.2020 20:38	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene			101		100		70-130			%	11.13.2020 20:38	
4-Bromofluorobenzene			88		87		70-130			%	11.13.2020 20:38	

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

Work Order No: 16778006

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 Littlell
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:	lwmather@ltenv.com, dmoir@ltenv.com

Project Name:	Mly Wayno Frac Pond	Turn Around	
Project Number:	012920104	Routine	
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT		Temp Blank:	☒ Yes	Wet Ice:	☒ Yes	No
Temperature (°C):	5.8/8.4	Thermometer ID	TMM003			
Received Intact:	☒ Yes	Correction Factor:	-0.2			
Cooler Custody Seals:	Yes (No) N/A	Total Containers:	7			
Sample Custody Seals:	Yes (No) N/A					

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (E	BTEX (	Chlorid												Sample Comments
FS50	S	11/12/2020	10:23	2'	1	X	X	X	X											Composite
FS51	S	11/12/2020	10:25	2'	1	X	X	X	X											Composite
FS52	S	11/12/2020	10:27	2'	1	X	X	X	X											Composite
FS53	S	11/12/2020	10:28	2'	1	X	X	X	X											Composite
FS54	S	11/12/2020	13:31	3'	1	X	X	X	X											Composite
FS55	S	11/12/2020	13:33	3'	1	X	X	X	X											Composite
SW70	S	11/12/2020	13:36	0'-3'	1	X	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 Pb 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
		11-12-20 16:37			

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.12.2020 04.37.00 PM

Work Order #: 677806

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)?	8.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	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:



Cloe Clifton

Date: 11.13.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.13.2020

Certificate of Analysis Summary 677807



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: William Mather
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 11.12.2020 16:37
Report Date: 11.17.2020 09:09
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	677807-001	677807-002	677807-003	677807-004	677807-005	
	<i>Field Id:</i>	SW66	SW67	SW68	SW69	FS49	
	<i>Depth:</i>	0-4 ft	0-4 ft	0-3 ft	0-3 ft	3- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	11.11.2020 09:39	11.11.2020 09:44	11.11.2020 12:30	11.11.2020 11:27	11.11.2020 10:41	
BTEX by EPA 8021B	<i>Extracted:</i>	11.13.2020 17:37	11.13.2020 17:37	11.13.2020 17:37	11.13.2020 17:37	11.13.2020 17:37	
	<i>Analyzed:</i>	11.14.2020 01:18	11.14.2020 02:36	11.14.2020 02:58	11.14.2020 03:21	11.14.2020 03:43	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	
m,p-Xylenes		<0.00396 0.00396	<0.00399 0.00399	<0.00400 0.00400	<0.00401 0.00401	<0.00402 0.00402	
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	
Total Xylenes		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	
Total BTEX		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	
Chloride by EPA 300	<i>Extracted:</i>	11.13.2020 17:59	11.13.2020 17:59	11.13.2020 17:59	11.13.2020 17:59	11.13.2020 17:59	
	<i>Analyzed:</i>	11.13.2020 20:47	11.13.2020 20:53	11.13.2020 20:58	11.13.2020 21:15	11.13.2020 21:20	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		550 10.1	177 10.0	399 9.92	469 10.0	76.9 10.1	
TPH by SW8015 Mod	<i>Extracted:</i>	11.13.2020 12:00	11.13.2020 12:00	11.13.2020 12:00	11.13.2020 12:00	11.13.2020 12:00	
	<i>Analyzed:</i>	11.13.2020 20:16	11.13.2020 20:36	11.13.2020 20:56	11.13.2020 21:17	11.13.2020 21:37	
	<i>Units/RL:</i>	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	<50.0 50.0	<49.9 49.9	<50.1 50.1	
Diesel Range Organics (DRO)		<50.1 50.1	<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.1 50.1	
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.1 50.1	
Total GRO-DRO		<50.1 50.1	<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.1 50.1	
Total TPH		<50.1 50.1	<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.1 50.1	

BRL - Below Reporting Limit

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



Analytical Report 677807

for

LT Environmental, Inc.

Project Manager: William Mather

Muy Wayno Frac Pond

012920104

11.17.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.17.2020

Project Manager: **William Mather**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **677807**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

William Mather:

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) 677807. 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. 677807 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 677807****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW66	S	11.11.2020 09:39	0 - 4 ft	677807-001
SW67	S	11.11.2020 09:44	0 - 4 ft	677807-002
SW68	S	11.11.2020 12:30	0 - 3 ft	677807-003
SW69	S	11.11.2020 11:27	0 - 3 ft	677807-004
FS49	S	11.11.2020 10:41	3 ft	677807-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 677807

Report Date: 11.17.2020
Date Received: 11.12.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 677807

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW66**
Lab Sample Id: 677807-001

Matrix: Soil
Date Collected: 11.11.2020 09:39

Date Received: 11.12.2020 16:37
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:59

% Moisture:
Basis: Wet Weight

Seq Number: 3142337

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	550	10.1	mg/kg	11.13.2020 20:47		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.13.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.13.2020 20:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.13.2020 20:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.13.2020 20:16	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.13.2020 20:16	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.13.2020 20:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.13.2020 20:16	
o-Terphenyl	84-15-1	116	%	70-135	11.13.2020 20:16	



Certificate of Analytical Results 677807

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW66**
Lab Sample Id: 677807-001

Matrix: Soil
Date Collected: 11.11.2020 09:39

Date Received: 11.12.2020 16:37
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.14.2020 01:18	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.14.2020 01:18	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.14.2020 01:18	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.14.2020 01:18	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.14.2020 01:18	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.14.2020 01:18	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.14.2020 01:18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.14.2020 01:18		
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.14.2020 01:18		



Certificate of Analytical Results 677807

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW67** Matrix: Soil Date Received: 11.12.2020 16:37
 Lab Sample Id: 677807-002 Date Collected: 11.11.2020 09:44 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.13.2020 17:59 % Moisture:
 Seq Number: 3142337 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	177	10.0	mg/kg	11.13.2020 20:53		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.13.2020 12:00 % Moisture:
 Seq Number: 3142310 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.13.2020 20:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.13.2020 20:36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.13.2020 20:36	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.13.2020 20:36	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.13.2020 20:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.13.2020 20:36	
o-Terphenyl	84-15-1	120	%	70-135	11.13.2020 20:36	



Certificate of Analytical Results 677807

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW67**
Lab Sample Id: 677807-002

Matrix: Soil
Date Collected: 11.11.2020 09:44

Date Received: 11.12.2020 16:37
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.14.2020 02:36	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.14.2020 02:36	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.14.2020 02:36	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.14.2020 02:36	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.14.2020 02:36	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.14.2020 02:36	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.14.2020 02:36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	11.14.2020 02:36		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.14.2020 02:36		



Certificate of Analytical Results 677807

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW68**
Lab Sample Id: 677807-003

Matrix: Soil
Date Collected: 11.11.2020 12:30

Date Received: 11.12.2020 16:37
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:59

% Moisture:
Basis: Wet Weight

Seq Number: 3142337

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	399	9.92	mg/kg	11.13.2020 20:58		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.13.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142310

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.13.2020 20:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.13.2020 20:56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.13.2020 20:56	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.13.2020 20:56	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.13.2020 20:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	11.13.2020 20:56	
o-Terphenyl	84-15-1	114	%	70-135	11.13.2020 20:56	



Certificate of Analytical Results 677807

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW68**
Lab Sample Id: 677807-003

Matrix: Soil
Date Collected: 11.11.2020 12:30

Date Received: 11.12.2020 16:37
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.14.2020 02:58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.14.2020 02:58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.14.2020 02:58	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.14.2020 02:58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.14.2020 02:58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.14.2020 02:58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.14.2020 02:58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.14.2020 02:58		
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.14.2020 02:58		



Certificate of Analytical Results 677807

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW69** Matrix: Soil Date Received: 11.12.2020 16:37
 Lab Sample Id: 677807-004 Date Collected: 11.11.2020 11:27 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.13.2020 17:59 % Moisture:
 Seq Number: 3142337 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	469	10.0	mg/kg	11.13.2020 21:15		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.13.2020 12:00 % Moisture:
 Seq Number: 3142310 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.13.2020 21:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.13.2020 21:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.13.2020 21:17	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.13.2020 21:17	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.13.2020 21:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.13.2020 21:17	
o-Terphenyl	84-15-1	102	%	70-135	11.13.2020 21:17	



Certificate of Analytical Results 677807

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW69**
Lab Sample Id: 677807-004

Matrix: Soil
Date Collected: 11.11.2020 11:27

Date Received: 11.12.2020 16:37
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.14.2020 03:21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.14.2020 03:21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.14.2020 03:21	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.14.2020 03:21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.14.2020 03:21	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.14.2020 03:21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.14.2020 03:21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.14.2020 03:21		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.14.2020 03:21		



Certificate of Analytical Results 677807

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS49** Matrix: Soil Date Received: 11.12.2020 16:37
 Lab Sample Id: 677807-005 Date Collected: 11.11.2020 10:41 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.13.2020 17:59 % Moisture:
 Seq Number: 3142337 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	76.9	10.1	mg/kg	11.13.2020 21:20		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.13.2020 12:00 % Moisture:
 Seq Number: 3142310 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.13.2020 21:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.13.2020 21:37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.13.2020 21:37	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.13.2020 21:37	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.13.2020 21:37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	11.13.2020 21:37	
o-Terphenyl	84-15-1	110	%	70-135	11.13.2020 21:37	



Certificate of Analytical Results 677807

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS49**
 Lab Sample Id: 677807-005

Matrix: Soil
 Date Collected: 11.11.2020 10:41

Date Received: 11.12.2020 16:37
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
 Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.14.2020 03:43	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.14.2020 03:43	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.14.2020 03:43	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.14.2020 03:43	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.14.2020 03:43	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.14.2020 03:43	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.14.2020 03:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	11.14.2020 03:43		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.14.2020 03:43		



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.

Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3142337

MB Sample Id: 7715203-1-BLK

Matrix: Solid

LCS Sample Id: 7715203-1-BKS

Prep Method: E300P

Date Prep: 11.13.2020

LCSD Sample Id: 7715203-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	249	100	244	98	90-110	2	20	mg/kg	11.13.2020 20:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3142337

Parent Sample Id: 677806-005

Matrix: Soil

MS Sample Id: 677806-005 S

Prep Method: E300P

Date Prep: 11.13.2020

MSD Sample Id: 677806-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	344	200	543	100	540	98	90-110	1	20	mg/kg	11.13.2020 20:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3142337

Parent Sample Id: 677810-003

Matrix: Soil

MS Sample Id: 677810-003 S

Prep Method: E300P

Date Prep: 11.13.2020

MSD Sample Id: 677810-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	20.0	199	217	99	217	99	90-110	0	20	mg/kg	11.13.2020 21:42	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142310

MB Sample Id: 7715200-1-BLK

Matrix: Solid

LCS Sample Id: 7715200-1-BKS

Prep Method: SW8015P

Date Prep: 11.13.2020

LCSD Sample Id: 7715200-1-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	952	95	983	98	70-135	3	35	mg/kg	11.13.2020 13:20	
Diesel Range Organics (DRO)	<50.0	1000	1060	106	1090	109	70-135	3	35	mg/kg	11.13.2020 13:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		129		119		70-135	%	11.13.2020 13:20
o-Terphenyl	102		102		103		70-135	%	11.13.2020 13:20

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142310

Matrix: Solid

MB Sample Id: 7715200-1-BLK

Prep Method: SW8015P

Date Prep: 11.13.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.13.2020 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.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142310

Parent Sample Id: 677780-013

Matrix: Soil

MS Sample Id: 677780-013 S

Prep Method: SW8015P

Date Prep: 11.13.2020

MSD Sample Id: 677780-013 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	1120	112	1030	103	70-135	8	35	mg/kg	11.13.2020 14:20	
Diesel Range Organics (DRO)	<50.1	1000	1090	109	1120	112	70-135	3	35	mg/kg	11.13.2020 14:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		113		70-135	%	11.13.2020 14:20
o-Terphenyl	108		118		70-135	%	11.13.2020 14:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142322

MB Sample Id: 7715196-1-BLK

Matrix: Solid

LCS Sample Id: 7715196-1-BKS

Prep Method: SW5035A

Date Prep: 11.13.2020

LCSD Sample Id: 7715196-1-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	0.101	101	0.104	104	70-130	3	35	mg/kg	11.13.2020 19:53	
Toluene	<0.00200	0.100	0.0977	98	0.100	100	70-130	2	35	mg/kg	11.13.2020 19:53	
Ethylbenzene	<0.00200	0.100	0.0909	91	0.0932	93	71-129	2	35	mg/kg	11.13.2020 19:53	
m,p-Xylenes	<0.00400	0.200	0.183	92	0.188	94	70-135	3	35	mg/kg	11.13.2020 19:53	
o-Xylene	<0.00200	0.100	0.0908	91	0.0933	93	71-133	3	35	mg/kg	11.13.2020 19:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		100		99		70-130	%	11.13.2020 19:53
4-Bromofluorobenzene	92		84		86		70-130	%	11.13.2020 19:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142322

Parent Sample Id: 677780-055

Matrix: Soil

MS Sample Id: 677780-055 S

Prep Method: SW5035A

Date Prep: 11.13.2020

MSD Sample Id: 677780-055 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	0.108	107	0.118	118	70-130	9	35	mg/kg	11.13.2020 20:38	
Toluene	<0.00201	0.101	0.100	99	0.111	111	70-130	10	35	mg/kg	11.13.2020 20:38	
Ethylbenzene	<0.00201	0.101	0.0897	89	0.0996	100	71-129	10	35	mg/kg	11.13.2020 20:38	
m,p-Xylenes	<0.00402	0.201	0.180	90	0.201	100	70-135	11	35	mg/kg	11.13.2020 20:38	
o-Xylene	<0.00201	0.101	0.0894	89	0.0991	99	71-133	10	35	mg/kg	11.13.2020 20:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		100		70-130	%	11.13.2020 20:38
4-Bromofluorobenzene	88		87		70-130	%	11.13.2020 20:38

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: 637803
 www.xenco.com Page 1 of 1

Project Manager:	Kalei Jennings	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	will.mather@wsp.com ; kalei.jennings@wsp.com

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

Project Name:	Muy Wayno Frac Pond	Turn Around	☒
Project Number:	012920104	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Will Mather	Due Date:	

SAMPLE RECEIPT	Temp Blank:	☒ Yes	☐ No	Wet Ice:	☒ Yes	☐ No
	Temperature (°C):	68.8/8.6 Thermometer ID				
	Received Intact:	Yes No				
	Cooler Custody Seals:	Yes	No	Correction Factor:	-0.2	
	Sample Custody Seals:	Yes	No	Total Containers:	5	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (E)	Chloride																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO2	Na	Sr	Ti	Sn	U	V	Zn
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010: 8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U												
		1631 / 245.1 / 7470 / 7471 : Hg																												

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	11-12-20 16:37			

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.12.2020 04.37.00 PM

Work Order #: 677807

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)?	8.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	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:



Cloe Clifton

Date: 11.13.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.13.2020

Certificate of Analysis Summary 677810



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Kalei Jennings
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 11.12.2020 16:37
Report Date: 11.17.2020 09:09
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	677810-001	677810-002	677810-003	677810-004	677810-005	
	<i>Field Id:</i>	FS46	FS47	FS48	SW64	SW65	
	<i>Depth:</i>	4- ft	4- ft	3- ft	0-4 ft	0-4 ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	11.10.2020 09:59	11.10.2020 10:03	11.10.2020 11:13	11.10.2020 10:08	11.10.2020 10:11	
BTEX by EPA 8021B	<i>Extracted:</i>	11.13.2020 17:37	11.13.2020 17:37	11.13.2020 17:37	11.13.2020 17:37	11.13.2020 17:37	
	<i>Analyzed:</i>	11.14.2020 04:06	11.14.2020 04:28	11.14.2020 04:50	11.14.2020 05:13	11.14.2020 05:35	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	
m,p-Xylenes		<0.00401 0.00401	<0.00402 0.00402	<0.00399 0.00399	<0.00397 0.00397	<0.00404 0.00404	
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00198 0.00198	<0.00202 0.00202	
Chloride by EPA 300	<i>Extracted:</i>	11.13.2020 17:59	11.13.2020 17:59	11.13.2020 17:59	11.13.2020 17:59	11.13.2020 17:59	
	<i>Analyzed:</i>	11.13.2020 21:26	11.13.2020 21:31	11.13.2020 21:37	11.13.2020 21:53	11.13.2020 21:58	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		1010 9.94	29.5 10.1	20.0 9.92	44.0 10.0	277 10.0	
TPH by SW8015 Mod	<i>Extracted:</i>	11.13.2020 17:00	11.13.2020 17:00	11.13.2020 17:00	11.13.2020 17:00	11.13.2020 17:00	
	<i>Analyzed:</i>	11.13.2020 23:18	11.14.2020 00:18	11.14.2020 00:39	11.14.2020 00:59	11.14.2020 01:19	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.0 50.0	<50.2 50.2	<50.3 50.3	<50.0 50.0	
Diesel Range Organics (DRO)		<50.3 50.3	<50.0 50.0	<50.2 50.2	<50.3 50.3	<50.0 50.0	
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.0 50.0	<50.2 50.2	<50.3 50.3	<50.0 50.0	
Total GRO-DRO		<50.3 50.3	<50.0 50.0	<50.2 50.2	<50.3 50.3	<50.0 50.0	
Total TPH		<50.3 50.3	<50.0 50.0	<50.2 50.2	<50.3 50.3	<50.0 50.0	

BRL - Below Reporting Limit

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



Analytical Report 677810

for

LT Environmental, Inc.

Project Manager: Kalei Jennings

Muy Wayno Frac Pond

012920104

11.17.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.17.2020

Project Manager: **Kalei Jennings**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **677810**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

Kalei Jennings:

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) 677810. 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. 677810 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 677810****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS46	S	11.10.2020 09:59	4 ft	677810-001
FS47	S	11.10.2020 10:03	4 ft	677810-002
FS48	S	11.10.2020 11:13	3 ft	677810-003
SW64	S	11.10.2020 10:08	0 - 4 ft	677810-004
SW65	S	11.10.2020 10:11	0 - 4 ft	677810-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 677810

Report Date: 11.17.2020
Date Received: 11.12.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 677810

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS46**
Lab Sample Id: 677810-001

Matrix: Soil
Date Collected: 11.10.2020 09:59

Date Received: 11.12.2020 16:37
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:59

% Moisture:
Basis: Wet Weight

Seq Number: 3142337

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1010	9.94	mg/kg	11.13.2020 21:26		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.13.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.13.2020 23:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.13.2020 23:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.13.2020 23:18	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.13.2020 23:18	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.13.2020 23:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.13.2020 23:18	
o-Terphenyl	84-15-1	116	%	70-135	11.13.2020 23:18	



Certificate of Analytical Results 677810

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS46**
 Lab Sample Id: 677810-001

Matrix: Soil
 Date Collected: 11.10.2020 09:59

Date Received: 11.12.2020 16:37
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
 Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.14.2020 04:06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.14.2020 04:06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.14.2020 04:06	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.14.2020 04:06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.14.2020 04:06	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.14.2020 04:06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.14.2020 04:06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	11.14.2020 04:06		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.14.2020 04:06		



Certificate of Analytical Results 677810

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS47** Matrix: Soil Date Received: 11.12.2020 16:37
 Lab Sample Id: 677810-002 Date Collected: 11.10.2020 10:03 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.13.2020 17:59 % Moisture:
 Seq Number: 3142337 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.5	10.1	mg/kg	11.13.2020 21:31		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.13.2020 17:00 % Moisture:
 Seq Number: 3142313 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.14.2020 00:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.14.2020 00:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.14.2020 00:18	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.14.2020 00:18	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.14.2020 00:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	11.14.2020 00:18	
o-Terphenyl	84-15-1	118	%	70-135	11.14.2020 00:18	



Certificate of Analytical Results 677810

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS47**
 Lab Sample Id: 677810-002

Matrix: Soil
 Date Collected: 11.10.2020 10:03

Date Received: 11.12.2020 16:37
 Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
 Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.14.2020 04:28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.14.2020 04:28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.14.2020 04:28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.14.2020 04:28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.14.2020 04:28	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.14.2020 04:28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.14.2020 04:28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.14.2020 04:28		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.14.2020 04:28		



Certificate of Analytical Results 677810

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS48**
Lab Sample Id: 677810-003

Matrix: Soil
Date Collected: 11.10.2020 11:13

Date Received: 11.12.2020 16:37
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:59

% Moisture:
Basis: Wet Weight

Seq Number: 3142337

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.0	9.92	mg/kg	11.13.2020 21:37		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.13.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.14.2020 00:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.14.2020 00:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.14.2020 00:39	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.14.2020 00:39	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.14.2020 00:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	131	%	70-135	11.14.2020 00:39	
o-Terphenyl	84-15-1	94	%	70-135	11.14.2020 00:39	



Certificate of Analytical Results 677810

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS48**
Lab Sample Id: 677810-003

Matrix: Soil
Date Collected: 11.10.2020 11:13

Date Received: 11.12.2020 16:37
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.14.2020 04:50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.14.2020 04:50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.14.2020 04:50	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.14.2020 04:50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.14.2020 04:50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.14.2020 04:50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.14.2020 04:50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.14.2020 04:50		
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.14.2020 04:50		



Certificate of Analytical Results 677810

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW64** Matrix: Soil Date Received: 11.12.2020 16:37
 Lab Sample Id: 677810-004 Date Collected: 11.10.2020 10:08 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.13.2020 17:59 % Moisture:
 Seq Number: 3142337 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	44.0	10.0	mg/kg	11.13.2020 21:53		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.13.2020 17:00 % Moisture:
 Seq Number: 3142313 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.14.2020 00:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.14.2020 00:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.14.2020 00:59	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.14.2020 00:59	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.14.2020 00:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	11.14.2020 00:59	
o-Terphenyl	84-15-1	118	%	70-135	11.14.2020 00:59	



Certificate of Analytical Results 677810

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW64**
Lab Sample Id: 677810-004

Matrix: Soil
Date Collected: 11.10.2020 10:08

Date Received: 11.12.2020 16:37
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.14.2020 05:13	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.14.2020 05:13	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.14.2020 05:13	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.14.2020 05:13	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.14.2020 05:13	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.14.2020 05:13	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.14.2020 05:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.14.2020 05:13	
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.14.2020 05:13	



Certificate of Analytical Results 677810

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW65**
Lab Sample Id: 677810-005

Matrix: Soil
Date Collected: 11.10.2020 10:11

Date Received: 11.12.2020 16:37
Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:59

% Moisture:
Basis: Wet Weight

Seq Number: 3142337

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	277	10.0	mg/kg	11.13.2020 21:58		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.13.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142313

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.14.2020 01:19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.14.2020 01:19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.14.2020 01:19	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.14.2020 01:19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.14.2020 01:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.14.2020 01:19	
o-Terphenyl	84-15-1	98	%	70-135	11.14.2020 01:19	



Certificate of Analytical Results 677810

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW65**
Lab Sample Id: 677810-005

Matrix: Soil
Date Collected: 11.10.2020 10:11

Date Received: 11.12.2020 16:37
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.13.2020 17:37

% Moisture:
Basis: Wet Weight

Seq Number: 3142322

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.14.2020 05:35	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.14.2020 05:35	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.14.2020 05:35	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.14.2020 05:35	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.14.2020 05:35	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.14.2020 05:35	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.14.2020 05:35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	11.14.2020 05:35		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.14.2020 05:35		



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.
Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3142337

MB Sample Id: 7715203-1-BLK

Matrix: Solid

LCS Sample Id: 7715203-1-BKS

Prep Method: E300P

Date Prep: 11.13.2020

LCSD Sample Id: 7715203-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	249	100	244	98	90-110	2	20	mg/kg	11.13.2020 20:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3142337

Parent Sample Id: 677806-005

Matrix: Soil

MS Sample Id: 677806-005 S

Prep Method: E300P

Date Prep: 11.13.2020

MSD Sample Id: 677806-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	344	200	543	100	540	98	90-110	1	20	mg/kg	11.13.2020 20:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3142337

Parent Sample Id: 677810-003

Matrix: Soil

MS Sample Id: 677810-003 S

Prep Method: E300P

Date Prep: 11.13.2020

MSD Sample Id: 677810-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	20.0	199	217	99	217	99	90-110	0	20	mg/kg	11.13.2020 21:42	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142313

MB Sample Id: 7715202-1-BLK

Matrix: Solid

LCS Sample Id: 7715202-1-BKS

Prep Method: SW8015P

Date Prep: 11.13.2020

LCSD Sample Id: 7715202-1-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	957	96	70-135	11	35	mg/kg	11.13.2020 22:37	
Diesel Range Organics (DRO)	<50.0	1000	1200	120	1120	112	70-135	7	35	mg/kg	11.13.2020 22:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		130		134		70-135	%	11.13.2020 22:37
o-Terphenyl	96		114		112		70-135	%	11.13.2020 22:37

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142313

Matrix: Solid

MB Sample Id: 7715202-1-BLK

Prep Method: SW8015P

Date Prep: 11.13.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.13.2020 22:17	

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

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

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

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



LT Environmental, Inc.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142313

Parent Sample Id: 677810-001

Matrix: Soil

MS Sample Id: 677810-001 S

Prep Method: SW8015P

Date Prep: 11.13.2020

MSD Sample Id: 677810-001 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)	<49.8	996	1120	112	1020	102	70-135	9	35	mg/kg	11.13.2020 23:38	
Diesel Range Organics (DRO)	<49.8	996	994	100	1120	112	70-135	12	35	mg/kg	11.13.2020 23:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		115		70-135	%	11.13.2020 23:38
o-Terphenyl	112		98		70-135	%	11.13.2020 23:38

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142322

MB Sample Id: 7715196-1-BLK

Matrix: Solid

LCS Sample Id: 7715196-1-BKS

Prep Method: SW5035A

Date Prep: 11.13.2020

LCSD Sample Id: 7715196-1-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	0.101	101	0.104	104	70-130	3	35	mg/kg	11.13.2020 19:53	
Toluene	<0.00200	0.100	0.0977	98	0.100	100	70-130	2	35	mg/kg	11.13.2020 19:53	
Ethylbenzene	<0.00200	0.100	0.0909	91	0.0932	93	71-129	2	35	mg/kg	11.13.2020 19:53	
m,p-Xylenes	<0.00400	0.200	0.183	92	0.188	94	70-135	3	35	mg/kg	11.13.2020 19:53	
o-Xylene	<0.00200	0.100	0.0908	91	0.0933	93	71-133	3	35	mg/kg	11.13.2020 19:53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		100		99		70-130	%	11.13.2020 19:53
4-Bromofluorobenzene	92		84		86		70-130	%	11.13.2020 19:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142322

Parent Sample Id: 677780-055

Matrix: Soil

MS Sample Id: 677780-055 S

Prep Method: SW5035A

Date Prep: 11.13.2020

MSD Sample Id: 677780-055 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	0.108	107	0.118	118	70-130	9	35	mg/kg	11.13.2020 20:38	
Toluene	<0.00201	0.101	0.100	99	0.111	111	70-130	10	35	mg/kg	11.13.2020 20:38	
Ethylbenzene	<0.00201	0.101	0.0897	89	0.0996	100	71-129	10	35	mg/kg	11.13.2020 20:38	
m,p-Xylenes	<0.00402	0.201	0.180	90	0.201	100	70-135	11	35	mg/kg	11.13.2020 20:38	
o-Xylene	<0.00201	0.101	0.0894	89	0.0991	99	71-133	10	35	mg/kg	11.13.2020 20:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		100		70-130	%	11.13.2020 20:38
4-Bromofluorobenzene	88		87		70-130	%	11.13.2020 20:38

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



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) 565-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 335-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 820-2000

Chain of Custody

Work Order No: 1677816

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Page 1 of 1

Project Manager:	Kalei Jennings	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 E Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	will.mather@wsp.com, kalei.jennings@wsp.com

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

Project Name:	Muy Wayno Frac Pond	Turn Around	☒	ANALYSIS REQUEST																Work Order Notes		
Project Number:	012920104	Routine	☒																	TAT starts the day received by the lab, if received by 4:30pm		
P.O. Number:		Rush:																				
Sampler's Name:	William Mather	Due Date:																				
SAMPLE RECEIPT			Temp Blank: ☒ Yes ☒ No	Wet Ice: ☒ Yes ☒ No																		
Temperature (°C):	8.5/8.6	Thermometer ID	TMM-503																			
Received Intact:	☒ Yes ☐ No	Correction Factor:	0.2																			
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	5																			
Sample Custody Seals:	Yes ☒ No ☐ N/A																					
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers																Sample Comments	
FS46	S	11/10/2020	959	4'	1	X	X	X	X													
FS47	S	11/10/2020	1003	4'	1	X	X	X	X													
FS48	S	11/10/2020	1113	3'	1	X	X	X	X													
SW64	S	11/10/2020	1008	0-4'	1	X	X	X	X													
SW65	S	11/10/2020	1011	0-4'	1	X	X	X	X													

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	11-12-20 1637			

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.12.2020 04:37.00 PM

Work Order #: 677810

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)?	8.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	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:



Cloe Clifton

Date: 11.13.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.13.2020

Certificate of Analysis Summary 678189



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Tue 11.17.2020 16:30
Report Date: 11.20.2020 18:55
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	678189-001	678189-002	678189-003	678189-004		
	<i>Field Id:</i>	SW71	FS56	FS57	FS58		
	<i>Depth:</i>	0-4 ft	3- ft	3- ft	3- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	11.16.2020 09:48	11.16.2020 13:41	11.16.2020 13:38	11.16.2020 13:31		
BTEX by EPA 8021B	<i>Extracted:</i>	11.18.2020 10:57	11.18.2020 10:57	11.18.2020 10:57	11.18.2020 10:57		
	<i>Analyzed:</i>	11.18.2020 15:45	11.18.2020 16:07	11.18.2020 16:29	11.18.2020 16:52		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202		
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202		
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202		
m,p-Xylenes		<0.00396 0.00396	<0.00401 0.00401	<0.00403 0.00403	<0.00403 0.00403		
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202		
Total Xylenes		<0.001980 0.001980	<0.002000 0.002000	<0.002020 0.002020	<0.002020 0.002020		
Total BTEX		<0.001980 0.001980	<0.002000 0.002000	<0.002020 0.002020	<0.002020 0.002020		
Chloride by EPA 300	<i>Extracted:</i>	11.18.2020 15:53	11.18.2020 15:53	11.18.2020 15:53	11.18.2020 15:53		
	<i>Analyzed:</i>	11.19.2020 11:37	11.19.2020 11:54	11.19.2020 11:59	11.19.2020 12:05		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		279 10.0	99.6 10.0	88.4 9.98	236 10.0		
TPH by SW8015 Mod	<i>Extracted:</i>	11.18.2020 13:04	11.18.2020 13:04	11.18.2020 13:04	11.18.2020 13:04		
	<i>Analyzed:</i>	11.18.2020 18:05	11.18.2020 19:07	11.18.2020 19:27	11.18.2020 19:48		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2		
Diesel Range Organics (DRO)		<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2		
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.2 50.2	<50.1 50.1	<50.2 50.2		
Total GRO-DRO		<50.20 50.20	<50.20 50.20	<50.10 50.10	<50.20 50.20		
Total TPH		<50.20 50.20	<50.20 50.20	<50.10 50.10	<50.20 50.20		

BRL - Below Reporting Limit

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



Analytical Report 678189

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.20.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.20.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **678189**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 678189. 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. 678189 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 678189****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW71	S	11.16.2020 09:48	0 - 4 ft	678189-001
FS56	S	11.16.2020 13:41	3 ft	678189-002
FS57	S	11.16.2020 13:38	3 ft	678189-003
FS58	S	11.16.2020 13:31	3 ft	678189-004



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 678189

Report Date: 11.20.2020
Date Received: 11.17.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 678189

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW71** Matrix: Soil Date Received: 11.17.2020 16:30
 Lab Sample Id: 678189-001 Date Collected: 11.16.2020 09:48 Sample Depth: 0 - 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.18.2020 15:53 % Moisture:
 Seq Number: 3142882 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	279	10.0	mg/kg	11.19.2020 11:37		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.18.2020 13:04 % Moisture:
 Seq Number: 3142705 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.18.2020 18:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.18.2020 18:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.18.2020 18:05	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.18.2020 18:05	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.18.2020 18:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.18.2020 18:05	
o-Terphenyl	84-15-1	102	%	70-135	11.18.2020 18:05	



Certificate of Analytical Results 678189

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW71**
Lab Sample Id: 678189-001

Matrix: Soil
Date Collected: 11.16.2020 09:48

Date Received: 11.17.2020 16:30
Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.18.2020 10:57

% Moisture:
Basis: Wet Weight

Seq Number: 3142707

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.18.2020 15:45	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.18.2020 15:45	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.18.2020 15:45	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.18.2020 15:45	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.18.2020 15:45	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.18.2020 15:45	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.18.2020 15:45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.18.2020 15:45		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.18.2020 15:45		



Certificate of Analytical Results 678189

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS56** Matrix: Soil Date Received: 11.17.2020 16:30
 Lab Sample Id: 678189-002 Date Collected: 11.16.2020 13:41 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.18.2020 15:53 % Moisture:
 Seq Number: 3142882 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	99.6	10.0	mg/kg	11.19.2020 11:54		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.18.2020 13:04 % Moisture:
 Seq Number: 3142705 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.18.2020 19:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.18.2020 19:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.18.2020 19:07	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.18.2020 19:07	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.18.2020 19:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.18.2020 19:07	
o-Terphenyl	84-15-1	98	%	70-135	11.18.2020 19:07	



Certificate of Analytical Results 678189

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS56**
 Lab Sample Id: 678189-002

Matrix: Soil
 Date Collected: 11.16.2020 13:41

Date Received: 11.17.2020 16:30
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.18.2020 10:57

% Moisture:
 Basis: Wet Weight

Seq Number: 3142707

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.18.2020 16:07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.18.2020 16:07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.18.2020 16:07	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.18.2020 16:07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.18.2020 16:07	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.18.2020 16:07	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.18.2020 16:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.18.2020 16:07		
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.18.2020 16:07		



Certificate of Analytical Results 678189

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS57** Matrix: **Soil** Date Received: 11.17.2020 16:30
 Lab Sample Id: 678189-003 Date Collected: 11.16.2020 13:38 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: **MAB**
 Analyst: **MAB** Date Prep: 11.18.2020 15:53 % Moisture:
 Seq Number: 3142882 Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	88.4	9.98	mg/kg	11.19.2020 11:59		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: **MAB**
 Analyst: **CAC** Date Prep: 11.18.2020 13:04 % Moisture:
 Seq Number: 3142705 Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.18.2020 19:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.18.2020 19:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.18.2020 19:27	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.18.2020 19:27	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.18.2020 19:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.18.2020 19:27	
o-Terphenyl	84-15-1	114	%	70-135	11.18.2020 19:27	



Certificate of Analytical Results 678189

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS57**
 Lab Sample Id: 678189-003

Matrix: Soil
 Date Collected: 11.16.2020 13:38

Date Received: 11.17.2020 16:30
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.18.2020 10:57

% Moisture:
 Basis: Wet Weight

Seq Number: 3142707

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.18.2020 16:29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.18.2020 16:29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.18.2020 16:29	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.18.2020 16:29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.18.2020 16:29	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.18.2020 16:29	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.18.2020 16:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.18.2020 16:29		
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.18.2020 16:29		



Certificate of Analytical Results 678189

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS58** Matrix: Soil Date Received: 11.17.2020 16:30
 Lab Sample Id: 678189-004 Date Collected: 11.16.2020 13:31 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.18.2020 15:53 % Moisture:
 Seq Number: 3142882 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	236	10.0	mg/kg	11.19.2020 12:05		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.18.2020 13:04 % Moisture:
 Seq Number: 3142705 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.18.2020 19:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.18.2020 19:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.18.2020 19:48	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.18.2020 19:48	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.18.2020 19:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.18.2020 19:48	
o-Terphenyl	84-15-1	106	%	70-135	11.18.2020 19:48	



Certificate of Analytical Results 678189

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS58**
 Lab Sample Id: 678189-004

Matrix: Soil
 Date Collected: 11.16.2020 13:31

Date Received: 11.17.2020 16:30
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.18.2020 10:57

% Moisture:
 Basis: Wet Weight

Seq Number: 3142707

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.18.2020 16:52	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.18.2020 16:52	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.18.2020 16:52	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.18.2020 16:52	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.18.2020 16:52	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.18.2020 16:52	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.18.2020 16:52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.18.2020 16:52		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.18.2020 16:52		



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.

Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3142882

MB Sample Id: 7715479-1-BLK

Matrix: Solid

LCS Sample Id: 7715479-1-BKS

Prep Method: E300P

Date Prep: 11.18.2020

LCSD Sample Id: 7715479-1-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	255	102	90-110	0	20	mg/kg	11.19.2020 11:26	

Analytical Method: Chloride by EPA 300

Seq Number: 3142882

Parent Sample Id: 678189-001

Matrix: Soil

MS Sample Id: 678189-001 S

Prep Method: E300P

Date Prep: 11.18.2020

MSD Sample Id: 678189-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	279	200	477	99	486	103	90-110	2	20	mg/kg	11.19.2020 11:43	

Analytical Method: Chloride by EPA 300

Seq Number: 3142882

Parent Sample Id: 678192-007

Matrix: Soil

MS Sample Id: 678192-007 S

Prep Method: E300P

Date Prep: 11.18.2020

MSD Sample Id: 678192-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2640	202	2830	94	2840	99	90-110	0	20	mg/kg	11.19.2020 13:44	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142705

MB Sample Id: 7715484-1-BLK

Matrix: Solid

LCS Sample Id: 7715484-1-BKS

Prep Method: SW8015P

Date Prep: 11.18.2020

LCSD Sample Id: 7715484-1-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	964	96	981	98	70-135	2	35	mg/kg	11.18.2020 17:25	
Diesel Range Organics (DRO)	<50.0	1000	1080	108	1100	110	70-135	2	35	mg/kg	11.18.2020 17:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		131		135		70-135	%	11.18.2020 17:25
o-Terphenyl	106		104		105		70-135	%	11.18.2020 17:25

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142705

Matrix: Solid

MB Sample Id: 7715484-1-BLK

Prep Method: SW8015P

Date Prep: 11.18.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.18.2020 17:04	

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.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142705

Parent Sample Id: 678189-001

Matrix: Soil

MS Sample Id: 678189-001 S

Prep Method: SW8015P

Date Prep: 11.18.2020

MSD Sample Id: 678189-001 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	1080	108	1120	112	70-135	4	35	mg/kg	11.18.2020 18:26	
Diesel Range Organics (DRO)	<50.1	1000	1000	100	1070	107	70-135	7	35	mg/kg	11.18.2020 18:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		106		70-135	%	11.18.2020 18:26
o-Terphenyl	112		118		70-135	%	11.18.2020 18:26

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142707

MB Sample Id: 7715481-1-BLK

Matrix: Solid

LCS Sample Id: 7715481-1-BKS

Prep Method: SW5035A

Date Prep: 11.18.2020

LCSD Sample Id: 7715481-1-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	0.0944	94	0.0898	90	70-130	5	35	mg/kg	11.18.2020 13:40	
Toluene	<0.00200	0.100	0.0905	91	0.0846	85	70-130	7	35	mg/kg	11.18.2020 13:40	
Ethylbenzene	<0.00200	0.100	0.0922	92	0.0890	89	71-129	4	35	mg/kg	11.18.2020 13:40	
m,p-Xylenes	<0.00400	0.200	0.190	95	0.181	91	70-135	5	35	mg/kg	11.18.2020 13:40	
o-Xylene	<0.00200	0.100	0.0954	95	0.0893	89	71-133	7	35	mg/kg	11.18.2020 13:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		101		101		70-130	%	11.18.2020 13:40
4-Bromofluorobenzene	111		109		107		70-130	%	11.18.2020 13:40

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142707

Parent Sample Id: 678189-001

Matrix: Soil

MS Sample Id: 678189-001 S

Prep Method: SW5035A

Date Prep: 11.18.2020

MSD Sample Id: 678189-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.106	107	0.0958	97	70-130	10	35	mg/kg	11.18.2020 14:25	
Toluene	<0.00199	0.0994	0.0997	100	0.0837	84	70-130	17	35	mg/kg	11.18.2020 14:25	
Ethylbenzene	<0.00199	0.0994	0.103	104	0.0777	78	71-129	28	35	mg/kg	11.18.2020 14:25	
m,p-Xylenes	<0.00398	0.199	0.209	105	0.157	79	70-135	28	35	mg/kg	11.18.2020 14:25	
o-Xylene	<0.00199	0.0994	0.104	105	0.0784	79	71-133	28	35	mg/kg	11.18.2020 14:25	

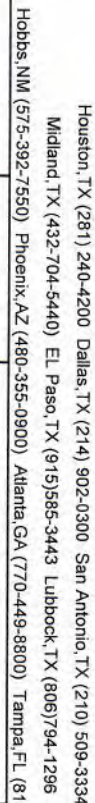
Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		98		70-130	%	11.18.2020 14:25
4-Bromofluorobenzene	106		108		70-130	%	11.18.2020 14:25

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



Chain of Custody

Work Order No: 678189

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

Work Order Comments									
Program: UST/PST ☐ RP ☐ Growfields ☒ RC \$perfund ☐									
State of Project:									
Reporting Level: I ☐ Level II ☐ Level III ☐ ST/UST ☐ RP ☐ 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	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	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
		11/17/20 1630			11/17/20 1635

Revised Date 051418 Rev. 2018.1

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.17.2020 04.30.00 PM

Work Order #: 678189

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 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:



Cloe Clifton

Date: 11.17.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.19.2020

Certificate of Analysis Summary 678304



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Wed 11.18.2020 13:27
Report Date: 11.23.2020 10:07
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	678304-001	678304-002	678304-003	678304-004	678304-005	678304-006
	<i>Field Id:</i>	SW72	SW73	FS59	FS60	FS61	FS62
	<i>Depth:</i>	0-3 ft	0-3 ft	3- ft	3- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.17.2020 10:23	11.17.2020 10:25	11.17.2020 10:27	11.17.2020 10:30	11.17.2020 10:32	11.17.2020 10:34
BTEX by EPA 8021B	<i>Extracted:</i>	11.19.2020 16:52	11.19.2020 16:52	11.19.2020 16:52	11.19.2020 16:52	11.19.2020 16:52	11.19.2020 16:52
	<i>Analyzed:</i>	11.20.2020 07:19	11.20.2020 07:41	11.20.2020 08:03	11.20.2020 08:26	11.20.2020 08:48	11.20.2020 09:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
m,p-Xylenes		<0.00400 0.00400	<0.00401 0.00401	<0.00404 0.00404	<0.00401 0.00401	<0.00398 0.00398	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199
Total Xylenes		<0.002000 0.002000	<0.002000 0.002000	<0.002020 0.002020	<0.002000 0.002000	<0.001990 0.001990	<0.001990 0.001990
Total BTEX		<0.002000 0.002000	<0.002000 0.002000	<0.002020 0.002020	<0.002000 0.002000	<0.001990 0.001990	<0.001990 0.001990
Chloride by EPA 300	<i>Extracted:</i>	11.20.2020 12:36	11.20.2020 12:36	11.20.2020 12:36	11.20.2020 12:36	11.20.2020 12:36	11.20.2020 12:36
	<i>Analyzed:</i>	11.20.2020 18:56	11.20.2020 19:12	11.20.2020 19:17	11.20.2020 19:33	11.20.2020 19:38	11.20.2020 19:43
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		32.6 10.0	80.7 10.0	281 9.96	473 9.98	174 10.0	99.8 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	11.19.2020 12:00	11.19.2020 12:00	11.19.2020 12:00	11.19.2020 12:00	11.19.2020 12:00	11.19.2020 12:00
	<i>Analyzed:</i>	11.19.2020 14:47	11.19.2020 15:55	11.19.2020 16:14	11.19.2020 16:34	11.19.2020 16:54	11.19.2020 17:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.0 50.0	<50.0 50.0	<49.8 49.8	<50.1 50.1	<50.1 50.1
Diesel Range Organics (DRO)		<50.2 50.2	<50.0 50.0	<50.0 50.0	<49.8 49.8	<50.1 50.1	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.0 50.0	<50.0 50.0	<49.8 49.8	<50.1 50.1	<50.1 50.1
Total GRO-DRO		<50.20 50.20	<50.00 50.00	<50.00 50.00	<49.80 49.80	<50.10 50.10	<50.10 50.10
Total TPH		<50.20 50.20	<50.00 50.00	<50.00 50.00	<49.80 49.80	<50.10 50.10	<50.10 50.10

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 678304



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Wed 11.18.2020 13:27
Report Date: 11.23.2020 10:07
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	678304-007	678304-008	678304-009			
	Field Id:	FS63	FS64	FS65			
	Depth:	3- ft	3- ft	3- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	11.17.2020 10:36	11.17.2020 10:38	11.17.2020 10:39			
BTEX by EPA 8021B	Extracted:	11.19.2020 16:52	11.19.2020 16:52	11.19.2020 16:52			
	Analyzed:	11.20.2020 09:33	11.20.2020 09:55	11.20.2020 10:18			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200			
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200			
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200			
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200			
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398	<0.00399 0.00399			
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200			
Total Xylenes		<0.002000 0.002000	<0.001990 0.001990	<0.002000 0.002000			
Total BTEX		<0.002000 0.002000	<0.001990 0.001990	<0.002000 0.002000			
Chloride by EPA 300	Extracted:	11.20.2020 12:36	11.20.2020 12:36	11.20.2020 12:36			
	Analyzed:	11.20.2020 19:48	11.20.2020 19:53	11.20.2020 19:58			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		285 10.1	188 9.98	77.2 9.96			
TPH by SW8015 Mod	Extracted:	11.19.2020 12:00	11.19.2020 12:00	11.19.2020 12:00			
	Analyzed:	11.19.2020 17:35	11.19.2020 18:34	11.19.2020 18:53			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
		mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.2 50.2	<50.0 50.0			
Diesel Range Organics (DRO)		<50.2 50.2	<50.2 50.2	<50.0 50.0			
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.2 50.2	<50.0 50.0			
Total GRO-DRO		<50.20 50.20	<50.20 50.20	<50.00 50.00			
Total TPH		<50.20 50.20	<50.20 50.20	<50.00 50.00			

BRL - Below Reporting Limit

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



Analytical Report 678304

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.23.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.23.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **678304**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 678304. 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. 678304 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 678304****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW72	S	11.17.2020 10:23	0 - 3 ft	678304-001
SW73	S	11.17.2020 10:25	0 - 3 ft	678304-002
FS59	S	11.17.2020 10:27	3 ft	678304-003
FS60	S	11.17.2020 10:30	3 ft	678304-004
FS61	S	11.17.2020 10:32	3 ft	678304-005
FS62	S	11.17.2020 10:34	3 ft	678304-006
FS63	S	11.17.2020 10:36	3 ft	678304-007
FS64	S	11.17.2020 10:38	3 ft	678304-008
FS65	S	11.17.2020 10:39	3 ft	678304-009



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 678304

Report Date: 11.23.2020
Date Received: 11.18.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 678304

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW72** Matrix: Soil Date Received: 11.18.2020 13:27
 Lab Sample Id: 678304-001 Date Collected: 11.17.2020 10:23 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 12:36 % Moisture:
 Seq Number: 3142941 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.6	10.0	mg/kg	11.20.2020 18:56		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.19.2020 12:00 % Moisture:
 Seq Number: 3142899 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.19.2020 14:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.19.2020 14:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.19.2020 14:47	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.19.2020 14:47	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.19.2020 14:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	11.19.2020 14:47	
o-Terphenyl	84-15-1	104	%	70-135	11.19.2020 14:47	



Certificate of Analytical Results 678304

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW72**
Lab Sample Id: 678304-001

Matrix: Soil
Date Collected: 11.17.2020 10:23

Date Received: 11.18.2020 13:27
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.19.2020 16:52

% Moisture:
Basis: Wet Weight

Seq Number: 3142931

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 07:19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 07:19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 07:19	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.20.2020 07:19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 07:19	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 07:19	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 07:19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.20.2020 07:19		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.20.2020 07:19		



Certificate of Analytical Results 678304

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW73**
Lab Sample Id: 678304-002

Matrix: Soil
Date Collected: 11.17.2020 10:25

Date Received: 11.18.2020 13:27
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 12:36

% Moisture:
Basis: Wet Weight

Seq Number: 3142941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	80.7	10.0	mg/kg	11.20.2020 19:12		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.19.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.19.2020 15:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.19.2020 15:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.19.2020 15:55	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.19.2020 15:55	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.19.2020 15:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.19.2020 15:55	
o-Terphenyl	84-15-1	114	%	70-135	11.19.2020 15:55	



Certificate of Analytical Results 678304

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW73**
 Lab Sample Id: 678304-002

Matrix: Soil
 Date Collected: 11.17.2020 10:25

Date Received: 11.18.2020 13:27
 Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.19.2020 16:52

% Moisture:
 Basis: Wet Weight

Seq Number: 3142931

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 07:41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 07:41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 07:41	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.20.2020 07:41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 07:41	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 07:41	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 07:41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	11.20.2020 07:41		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.20.2020 07:41		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS59** Matrix: Soil Date Received: 11.18.2020 13:27
 Lab Sample Id: 678304-003 Date Collected: 11.17.2020 10:27 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 12:36 % Moisture:
 Seq Number: 3142941 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	281	9.96	mg/kg	11.20.2020 19:17		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.19.2020 12:00 % Moisture:
 Seq Number: 3142899 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.19.2020 16:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.19.2020 16:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.19.2020 16:14	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.19.2020 16:14	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.19.2020 16:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.19.2020 16:14	
o-Terphenyl	84-15-1	118	%	70-135	11.19.2020 16:14	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS59**
Lab Sample Id: 678304-003

Matrix: Soil
Date Collected: 11.17.2020 10:27

Date Received: 11.18.2020 13:27
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.19.2020 16:52

% Moisture:
Basis: Wet Weight

Seq Number: 3142931

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.20.2020 08:03	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.20.2020 08:03	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.20.2020 08:03	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.20.2020 08:03	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.20.2020 08:03	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.20.2020 08:03	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.20.2020 08:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	11.20.2020 08:03		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.20.2020 08:03		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS60** Matrix: Soil Date Received: 11.18.2020 13:27
 Lab Sample Id: 678304-004 Date Collected: 11.17.2020 10:30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 12:36 % Moisture:
 Seq Number: 3142941 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	473	9.98	mg/kg	11.20.2020 19:33		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.19.2020 12:00 % Moisture:
 Seq Number: 3142899 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.19.2020 16:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.19.2020 16:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.19.2020 16:34	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.19.2020 16:34	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.19.2020 16:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.19.2020 16:34	
o-Terphenyl	84-15-1	102	%	70-135	11.19.2020 16:34	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS60**
Lab Sample Id: 678304-004

Matrix: Soil
Date Collected: 11.17.2020 10:30

Date Received: 11.18.2020 13:27
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.19.2020 16:52

% Moisture:
Basis: Wet Weight

Seq Number: 3142931

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 08:26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 08:26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 08:26	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.20.2020 08:26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 08:26	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 08:26	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 08:26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.20.2020 08:26		
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.20.2020 08:26		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS61** Matrix: Soil Date Received: 11.18.2020 13:27
 Lab Sample Id: 678304-005 Date Collected: 11.17.2020 10:32 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 12:36 % Moisture:
 Seq Number: 3142941 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	174	10.0	mg/kg	11.20.2020 19:38		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.19.2020 12:00 % Moisture:
 Seq Number: 3142899 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.19.2020 16:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.19.2020 16:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.19.2020 16:54	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.19.2020 16:54	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.19.2020 16:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.19.2020 16:54	
o-Terphenyl	84-15-1	114	%	70-135	11.19.2020 16:54	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS61**
 Lab Sample Id: 678304-005

Matrix: Soil
 Date Collected: 11.17.2020 10:32

Date Received: 11.18.2020 13:27
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.19.2020 16:52

% Moisture:
 Basis: Wet Weight

Seq Number: 3142931

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.2020 08:48	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.2020 08:48	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.2020 08:48	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.20.2020 08:48	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.2020 08:48	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.20.2020 08:48	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.20.2020 08:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.20.2020 08:48		
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.20.2020 08:48		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS62** Matrix: Soil Date Received: 11.18.2020 13:27
 Lab Sample Id: 678304-006 Date Collected: 11.17.2020 10:34 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 12:36 % Moisture:
 Seq Number: 3142941 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	99.8	10.0	mg/kg	11.20.2020 19:43		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.19.2020 12:00 % Moisture:
 Seq Number: 3142899 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.19.2020 17:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.19.2020 17:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.19.2020 17:15	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.19.2020 17:15	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.19.2020 17:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	11.19.2020 17:15	
o-Terphenyl	84-15-1	104	%	70-135	11.19.2020 17:15	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS62**
Lab Sample Id: 678304-006

Matrix: Soil
Date Collected: 11.17.2020 10:34

Date Received: 11.18.2020 13:27
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.19.2020 16:52

% Moisture:
Basis: Wet Weight

Seq Number: 3142931

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.2020 09:10	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.2020 09:10	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.2020 09:10	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.20.2020 09:10	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.2020 09:10	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.20.2020 09:10	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.20.2020 09:10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.20.2020 09:10		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.20.2020 09:10		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS63**
Lab Sample Id: 678304-007

Matrix: Soil
Date Collected: 11.17.2020 10:36

Date Received: 11.18.2020 13:27
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 12:36

% Moisture:
Basis: Wet Weight

Seq Number: 3142941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	285	10.1	mg/kg	11.20.2020 19:48		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.19.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.19.2020 17:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.19.2020 17:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.19.2020 17:35	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.19.2020 17:35	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.19.2020 17:35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	11.19.2020 17:35	
o-Terphenyl	84-15-1	94	%	70-135	11.19.2020 17:35	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS63**
Lab Sample Id: 678304-007

Matrix: Soil
Date Collected: 11.17.2020 10:36

Date Received: 11.18.2020 13:27
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.19.2020 16:52

% Moisture:
Basis: Wet Weight

Seq Number: 3142931

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 09:33	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 09:33	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 09:33	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.20.2020 09:33	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 09:33	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 09:33	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 09:33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.20.2020 09:33		
4-Bromofluorobenzene	460-00-4	89	%	70-130	11.20.2020 09:33		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS64**
Lab Sample Id: 678304-008

Matrix: Soil
Date Collected: 11.17.2020 10:38

Date Received: 11.18.2020 13:27
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 12:36

% Moisture:
Basis: Wet Weight

Seq Number: 3142941

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	188	9.98	mg/kg	11.20.2020 19:53		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.19.2020 12:00

% Moisture:
Basis: Wet Weight

Seq Number: 3142899

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.19.2020 18:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.19.2020 18:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.19.2020 18:34	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.19.2020 18:34	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.19.2020 18:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.19.2020 18:34	
o-Terphenyl	84-15-1	116	%	70-135	11.19.2020 18:34	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS64**
Lab Sample Id: 678304-008

Matrix: Soil
Date Collected: 11.17.2020 10:38

Date Received: 11.18.2020 13:27
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.19.2020 16:52

% Moisture:
Basis: Wet Weight

Seq Number: 3142931

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.2020 09:55	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.2020 09:55	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.2020 09:55	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.20.2020 09:55	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.2020 09:55	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.20.2020 09:55	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.20.2020 09:55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.20.2020 09:55		
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.20.2020 09:55		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS65** Matrix: Soil Date Received: 11.18.2020 13:27
 Lab Sample Id: 678304-009 Date Collected: 11.17.2020 10:39 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 12:36 % Moisture:
 Seq Number: 3142941 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	77.2	9.96	mg/kg	11.20.2020 19:58		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.19.2020 12:00 % Moisture:
 Seq Number: 3142899 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.19.2020 18:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.19.2020 18:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.19.2020 18:53	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.19.2020 18:53	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.19.2020 18:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.19.2020 18:53	
o-Terphenyl	84-15-1	104	%	70-135	11.19.2020 18:53	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS65**
Lab Sample Id: 678304-009

Matrix: Soil
Date Collected: 11.17.2020 10:39

Date Received: 11.18.2020 13:27
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.19.2020 16:52

% Moisture:
Basis: Wet Weight

Seq Number: 3142931

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 10:18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 10:18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 10:18	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.20.2020 10:18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 10:18	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 10:18	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 10:18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.20.2020 10:18		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.20.2020 10:18		

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.
Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3142941

MB Sample Id: 7715680-1-BLK

Matrix: Solid

LCS Sample Id: 7715680-1-BKS

Prep Method: E300P

Date Prep: 11.20.2020

LCSD Sample Id: 7715680-1-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	254	102	257	103	90-110	1	20	mg/kg	11.20.2020 17:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3142941

Parent Sample Id: 678304-001

Matrix: Soil

MS Sample Id: 678304-001 S

Prep Method: E300P

Date Prep: 11.20.2020

MSD Sample Id: 678304-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	32.6	201	246	106	245	106	90-110	0	20	mg/kg	11.20.2020 19:02	

Analytical Method: Chloride by EPA 300

Seq Number: 3142941

Parent Sample Id: 678416-001

Matrix: Soil

MS Sample Id: 678416-001 S

Prep Method: E300P

Date Prep: 11.20.2020

MSD Sample Id: 678416-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3880	202	4090	104	4070	94	90-110	0	20	mg/kg	11.20.2020 17:49	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142899

MB Sample Id: 7715569-1-BLK

Matrix: Solid

LCS Sample Id: 7715569-1-BKS

Prep Method: SW8015P

Date Prep: 11.19.2020

LCSD Sample Id: 7715569-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1160	116	1190	119	70-135	3	35	mg/kg	11.19.2020 14:06	
Diesel Range Organics (DRO)	<50.0	1000	1120	112	1000	100	70-135	11	35	mg/kg	11.19.2020 14:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		110		116		70-135	%	11.19.2020 14:06
o-Terphenyl	121		125		113		70-135	%	11.19.2020 14:06

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142899

Matrix: Solid

MB Sample Id: 7715569-1-BLK

Prep Method: SW8015P

Date Prep: 11.19.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.19.2020 13:46	

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

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

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

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



LT Environmental, Inc.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142899

Parent Sample Id: 678304-001

Matrix: Soil

MS Sample Id: 678304-001 S

Prep Method: SW8015P

Date Prep: 11.19.2020

MSD Sample Id: 678304-001 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	1100	109	1240	124	70-135	12	35	mg/kg	11.19.2020 15:07	
Diesel Range Organics (DRO)	<50.3	1010	1000	99	1070	107	70-135	7	35	mg/kg	11.19.2020 15:07	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		103		70-135	%	11.19.2020 15:07
o-Terphenyl	118		106		70-135	%	11.19.2020 15:07

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142931

MB Sample Id: 7715582-1-BLK

Matrix: Solid

LCS Sample Id: 7715582-1-BKS

Prep Method: SW5035A

Date Prep: 11.19.2020

LCSD Sample Id: 7715582-1-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	0.114	114	70-130	5	35	mg/kg	11.20.2020 05:16	
Toluene	<0.00200	0.100	0.102	102	0.108	108	70-130	6	35	mg/kg	11.20.2020 05:16	
Ethylbenzene	<0.00200	0.100	0.0934	93	0.100	100	71-129	7	35	mg/kg	11.20.2020 05:16	
m,p-Xylenes	<0.00400	0.200	0.193	97	0.203	102	70-135	5	35	mg/kg	11.20.2020 05:16	
o-Xylene	<0.00200	0.100	0.0946	95	0.0997	100	71-133	5	35	mg/kg	11.20.2020 05:16	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		99		99		70-130	%	11.20.2020 05:16
4-Bromofluorobenzene	87		86		88		70-130	%	11.20.2020 05:16

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142931

Parent Sample Id: 678304-001

Matrix: Soil

MS Sample Id: 678304-001 S

Prep Method: SW5035A

Date Prep: 11.19.2020

MSD Sample Id: 678304-001 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	0.107	107	0.0989	99	70-130	8	35	mg/kg	11.20.2020 11:02	
Toluene	<0.00200	0.100	0.105	105	0.0880	88	70-130	18	35	mg/kg	11.20.2020 11:02	
Ethylbenzene	<0.00200	0.100	0.0957	96	0.0762	76	71-129	23	35	mg/kg	11.20.2020 11:02	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.152	76	70-135	24	35	mg/kg	11.20.2020 11:02	
o-Xylene	<0.00200	0.100	0.0970	97	0.0765	77	71-133	24	35	mg/kg	11.20.2020 11:02	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		100		70-130	%	11.20.2020 11:02
4-Bromofluorobenzene	89		90		70-130	%	11.20.2020 11:02

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



Chain of Custody

Work Order No: 678364

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 Littlell
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:	lmmather@ltenv.com, dmoir@ltenv.com

Project Name:	Muy Wayno Frac Pond	Turn Around	
Project Number:	012920104	Routine	☒
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT	Temp Blank:	☒ Yes	☒ No	Wet Ice:	☒ Yes	☒ No
Temperature (°C):	2.6/0.4	Thermometer ID				
Received Intact:	Yes	No	1-NM-007			
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes	No	N/A	Total Containers:	9	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST										Work Order Notes
SW72	S	11/17/2020	10:23	0-3'	1	X	X	X											Composite
SW73	S	11/17/2020	10:25	0-3'	1	X	X	X											Composite
FS69	S	11/17/2020	10:27	3'	1	X	X	X											Composite
FS60	S	11/17/2020	10:30	3'	1	X	X	X											Composite
FS61	S	11/17/2020	10:32	3'	1	X	X	X											Composite
FS62	S	11/17/2020	10:34	3'	1	X	X	X											Composite
FS63	S	11/17/2020	10:36	3'	1	X	X	X											Composite
FS64	S	11/17/2020	10:38	3'	1	X	X	X											Composite
FS65	S	11/17/2020	10:39	3'	1	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 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>	11/18/20 1326	<i>[Signature]</i>	<i>[Signature]</i>	11/18/20 1327

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.18.2020 01.27.00 PM

Work Order #: 678304

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:



Cloe Clifton

Date: 11.18.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.20.2020

Certificate of Analysis Summary 678525



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 11.19.2020 15:17
Report Date: 11.24.2020 10:13
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	678525-001	678525-002	678525-003	678525-004	678525-005	678525-006
	<i>Field Id:</i>	SW74	SW75	SW76	FS66	FS67	FS68
	<i>Depth:</i>	0-3 ft	0-3 ft	0-3 ft	3- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.18.2020 11:50	11.18.2020 12:18	11.18.2020 12:21	11.18.2020 12:24	11.18.2020 12:26	11.18.2020 12:28
BTEX by EPA 8021B	<i>Extracted:</i>	11.20.2020 10:58	11.20.2020 10:58	11.20.2020 10:58	11.20.2020 10:58	11.20.2020 10:58	11.20.2020 10:58
	<i>Analyzed:</i>	11.20.2020 19:58	11.20.2020 20:20	11.20.2020 20:43	11.20.2020 21:05	11.20.2020 21:28	11.20.2020 21:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00401 0.00401	<0.00401 0.00401	<0.00399 0.00399	<0.00398 0.00398	<0.00399 0.00399	<0.00397 0.00397
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.002000 0.002000	<0.002000 0.002000	<0.002000 0.002000	<0.001990 0.001990	<0.002000 0.002000	<0.001980 0.001980
Total BTEX		<0.002000 0.002000	<0.002000 0.002000	<0.002000 0.002000	<0.001990 0.001990	<0.002000 0.002000	<0.001980 0.001980
Chloride by EPA 300	<i>Extracted:</i>	11.20.2020 15:30	11.20.2020 15:30	11.20.2020 15:30	11.20.2020 15:30	11.20.2020 15:30	11.20.2020 15:30
	<i>Analyzed:</i>	11.20.2020 23:36	11.20.2020 23:41	11.20.2020 23:46	11.20.2020 23:51	11.21.2020 00:07	11.21.2020 00:12
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		134 10.1	177 10.1	56.8 10.0	117 10.1	130 9.92	341 9.88
TPH by SW8015 Mod	<i>Extracted:</i>	11.20.2020 10:12	11.20.2020 10:12	11.20.2020 10:12	11.20.2020 10:12	11.20.2020 10:12	11.20.2020 10:12
	<i>Analyzed:</i>	11.20.2020 13:47	11.20.2020 14:08	11.20.2020 14:27	11.20.2020 14:47	11.20.2020 15:08	11.20.2020 15:28
	<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	<50.2 50.2	<51.0 51.0	<50.1 50.1	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<50.0 50.0	<50.2 50.2	<51.0 51.0	<50.1 50.1	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.2 50.2	<51.0 51.0	<50.1 50.1	<50.0 50.0	<49.9 49.9
Total GRO-DRO		<50.00 50.00	<50.20 50.20	<51.00 51.00	<50.10 50.10	<50.00 50.00	<49.90 49.90
Total TPH		<50.00 50.00	<50.20 50.20	<51.00 51.00	<50.10 50.10	<50.00 50.00	<49.90 49.90

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 678525



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 11.19.2020 15:17
Report Date: 11.24.2020 10:13
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	678525-007	678525-008	678525-009	678525-010	678525-011	678525-012
	<i>Field Id:</i>	FS69	FS70	FS71	FS72	FS73	FS74
	<i>Depth:</i>	3- ft	3- ft	3- ft	3- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.18.2020 12:30	11.18.2020 12:32	11.18.2020 12:34	11.18.2020 12:37	11.18.2020 12:39	11.18.2020 12:41
BTEX by EPA 8021B	<i>Extracted:</i>	11.20.2020 10:58	11.20.2020 10:58	11.20.2020 10:58	11.20.2020 10:58	11.20.2020 10:58	11.20.2020 10:58
	<i>Analyzed:</i>	11.20.2020 22:13	11.20.2020 22:35	11.20.2020 22:57	11.21.2020 00:15	11.21.2020 00:37	11.21.2020 01:00
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
m,p-Xylenes		<0.00399 0.00399	<0.00399 0.00399	<0.00401 0.00401	<0.00403 0.00403	<0.00403 0.00403	<0.00404 0.00404
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202
Total Xylenes		<0.002000 0.002000	<0.002000 0.002000	<0.002000 0.002000	<0.002020 0.002020	<0.002020 0.002020	<0.002020 0.002020
Total BTEX		<0.002000 0.002000	<0.002000 0.002000	<0.002000 0.002000	<0.002020 0.002020	<0.002020 0.002020	<0.002020 0.002020
Chloride by EPA 300	<i>Extracted:</i>	11.20.2020 15:30	11.20.2020 15:30	11.20.2020 15:30	11.20.2020 15:30	11.20.2020 15:30	11.20.2020 15:30
	<i>Analyzed:</i>	11.21.2020 00:17	11.21.2020 00:22	11.21.2020 00:28	11.21.2020 00:33	11.21.2020 00:48	11.21.2020 00:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		108 9.98	31.5 9.98	230 10.0	44.6 9.92	327 10.0	130 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	11.20.2020 10:12	11.20.2020 10:12	11.20.2020 10:12	11.20.2020 10:12	11.20.2020 10:12	11.20.2020 10:12
	<i>Analyzed:</i>	11.20.2020 15:47	11.20.2020 16:07	11.20.2020 16:28	11.20.2020 17:08	11.20.2020 17:28	11.20.2020 17:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.0 50.0
Total GRO-DRO		<50.00 50.00	<49.90 49.90	<50.00 50.00	<50.20 50.20	<50.10 50.10	<50.00 50.00
Total TPH		<50.00 50.00	<49.90 49.90	<50.00 50.00	<50.20 50.20	<50.10 50.10	<50.00 50.00

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 678525



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu 11.19.2020 15:17
Report Date: 11.24.2020 10:13
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	678525-013	678525-014				
	Field Id:	FS75	FS76				
	Depth:	3- ft	3- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	11.18.2020 12:43	11.18.2020 12:45				
BTEX by EPA 8021B	Extracted:	11.20.2020 10:58	11.20.2020 10:58				
	Analyzed:	11.21.2020 01:22	11.21.2020 01:45				
	Units/RL:	mg/kg RL	mg/kg RL				
	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	<0.00404 0.00404	<0.00404 0.00404				
	o-Xylene	<0.00202 0.00202	<0.00202 0.00202				
	Total Xylenes	<0.002020 0.002020	<0.002020 0.002020				
	Total BTEX	<0.002020 0.002020	<0.002020 0.002020				
Chloride by EPA 300	Extracted:	11.20.2020 15:30	11.20.2020 15:30				
	Analyzed:	11.21.2020 01:09	11.21.2020 01:14				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	34.6 9.94	61.2 9.98				
TPH by SW8015 Mod	Extracted:	11.20.2020 10:12	11.20.2020 10:12				
	Analyzed:	11.20.2020 18:08	11.20.2020 18:28				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<49.9 49.9	<49.8 49.8				
	Diesel Range Organics (DRO)	<49.9 49.9	<49.8 49.8				
	Motor Oil Range Hydrocarbons (MRO)	<49.9 49.9	<49.8 49.8				
	Total GRO-DRO	<49.90 49.90	<49.80 49.80				
	Total TPH	<49.90 49.90	<49.80 49.80				

BRL - Below Reporting Limit

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



Analytical Report 678525

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.24.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.24.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **678525**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 678525. 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. 678525 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 678525****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW74	S	11.18.2020 11:50	0 - 3 ft	678525-001
SW75	S	11.18.2020 12:18	0 - 3 ft	678525-002
SW76	S	11.18.2020 12:21	0 - 3 ft	678525-003
FS66	S	11.18.2020 12:24	3 ft	678525-004
FS67	S	11.18.2020 12:26	3 ft	678525-005
FS68	S	11.18.2020 12:28	3 ft	678525-006
FS69	S	11.18.2020 12:30	3 ft	678525-007
FS70	S	11.18.2020 12:32	3 ft	678525-008
FS71	S	11.18.2020 12:34	3 ft	678525-009
FS72	S	11.18.2020 12:37	3 ft	678525-010
FS73	S	11.18.2020 12:39	3 ft	678525-011
FS74	S	11.18.2020 12:41	3 ft	678525-012
FS75	S	11.18.2020 12:43	3 ft	678525-013
FS76	S	11.18.2020 12:45	3 ft	678525-014



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 678525

Report Date: 11.24.2020
Date Received: 11.19.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW74** Matrix: Soil Date Received: 11.19.2020 15:17
 Lab Sample Id: 678525-001 Date Collected: 11.18.2020 11:50 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 15:30 % Moisture:
 Seq Number: 3142940 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	134	10.1	mg/kg	11.20.2020 23:36		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.20.2020 10:12 % Moisture:
 Seq Number: 3142991 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.20.2020 13:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.20.2020 13:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.20.2020 13:47	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.20.2020 13:47	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.20.2020 13:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.20.2020 13:47	
o-Terphenyl	84-15-1	110	%	70-135	11.20.2020 13:47	



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW74**
Lab Sample Id: 678525-001

Matrix: Soil
Date Collected: 11.18.2020 11:50

Date Received: 11.19.2020 15:17
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 19:58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 19:58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 19:58	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.20.2020 19:58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 19:58	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 19:58	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 19:58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	11.20.2020 19:58		
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.20.2020 19:58		



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW75** Matrix: Soil Date Received: 11.19.2020 15:17
 Lab Sample Id: 678525-002 Date Collected: 11.18.2020 12:18 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 15:30 % Moisture:
 Seq Number: 3142940 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	177	10.1	mg/kg	11.20.2020 23:41		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.20.2020 10:12 % Moisture:
 Seq Number: 3142991 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.20.2020 14:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.20.2020 14:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.20.2020 14:08	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.20.2020 14:08	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.20.2020 14:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.20.2020 14:08	
o-Terphenyl	84-15-1	98	%	70-135	11.20.2020 14:08	



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW75**
Lab Sample Id: 678525-002

Matrix: Soil
Date Collected: 11.18.2020 12:18

Date Received: 11.19.2020 15:17
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 20:20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 20:20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 20:20	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.20.2020 20:20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 20:20	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 20:20	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 20:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.20.2020 20:20	
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.20.2020 20:20	



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW76** Matrix: Soil Date Received: 11.19.2020 15:17
 Lab Sample Id: 678525-003 Date Collected: 11.18.2020 12:21 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 15:30 % Moisture:
 Seq Number: 3142940 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	56.8	10.0	mg/kg	11.20.2020 23:46		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.20.2020 10:12 % Moisture:
 Seq Number: 3142991 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<51.0	51.0	mg/kg	11.20.2020 14:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<51.0	51.0	mg/kg	11.20.2020 14:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<51.0	51.0	mg/kg	11.20.2020 14:27	U	1
Total GRO-DRO	PHC628	<51.00	51.00	mg/kg	11.20.2020 14:27	U	1
Total TPH	PHC635	<51.00	51.00	mg/kg	11.20.2020 14:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	11.20.2020 14:27	
o-Terphenyl	84-15-1	118	%	70-135	11.20.2020 14:27	



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW76**
Lab Sample Id: 678525-003

Matrix: Soil
Date Collected: 11.18.2020 12:21

Date Received: 11.19.2020 15:17
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 20:43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 20:43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 20:43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.20.2020 20:43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 20:43	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 20:43	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 20:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	11.20.2020 20:43		
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.20.2020 20:43		



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS66** Matrix: Soil Date Received: 11.19.2020 15:17
 Lab Sample Id: 678525-004 Date Collected: 11.18.2020 12:24 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 15:30 % Moisture:
 Seq Number: 3142940 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	117	10.1	mg/kg	11.20.2020 23:51		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.20.2020 10:12 % Moisture:
 Seq Number: 3142991 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.20.2020 14:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.20.2020 14:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.20.2020 14:47	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.20.2020 14:47	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.20.2020 14:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.20.2020 14:47	
o-Terphenyl	84-15-1	112	%	70-135	11.20.2020 14:47	



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS66**
Lab Sample Id: 678525-004

Matrix: Soil
Date Collected: 11.18.2020 12:24

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.20.2020 21:05	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.20.2020 21:05	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.20.2020 21:05	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.20.2020 21:05	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.20.2020 21:05	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.20.2020 21:05	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.20.2020 21:05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.20.2020 21:05		
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.20.2020 21:05		



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS67** Matrix: Soil Date Received: 11.19.2020 15:17
 Lab Sample Id: 678525-005 Date Collected: 11.18.2020 12:26 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 15:30 % Moisture:
 Seq Number: 3142940 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	130	9.92	mg/kg	11.21.2020 00:07		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.20.2020 10:12 % Moisture:
 Seq Number: 3142991 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.20.2020 15:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.20.2020 15:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.20.2020 15:08	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.20.2020 15:08	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.20.2020 15:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.20.2020 15:08	
o-Terphenyl	84-15-1	110	%	70-135	11.20.2020 15:08	



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS67**
Lab Sample Id: 678525-005

Matrix: Soil
Date Collected: 11.18.2020 12:26

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 21:28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 21:28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 21:28	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.20.2020 21:28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 21:28	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 21:28	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 21:28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.20.2020 21:28		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.20.2020 21:28		



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS68**
Lab Sample Id: 678525-006

Matrix: Soil
Date Collected: 11.18.2020 12:28

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142940

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	341	9.88	mg/kg	11.21.2020 00:12		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.20.2020 10:12

% Moisture:
Basis: Wet Weight

Seq Number: 3142991

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.20.2020 15:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.20.2020 15:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.20.2020 15:28	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.20.2020 15:28	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.20.2020 15:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.20.2020 15:28	
o-Terphenyl	84-15-1	118	%	70-135	11.20.2020 15:28	



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS68**
Lab Sample Id: 678525-006

Matrix: Soil
Date Collected: 11.18.2020 12:28

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.20.2020 21:50	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.20.2020 21:50	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.20.2020 21:50	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.20.2020 21:50	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.20.2020 21:50	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.20.2020 21:50	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.20.2020 21:50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.20.2020 21:50		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.20.2020 21:50		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS69** Matrix: Soil Date Received: 11.19.2020 15:17
 Lab Sample Id: 678525-007 Date Collected: 11.18.2020 12:30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 15:30 % Moisture:
 Seq Number: 3142940 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	108	9.98	mg/kg	11.21.2020 00:17		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.20.2020 10:12 % Moisture:
 Seq Number: 3142991 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.20.2020 15:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.20.2020 15:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.20.2020 15:47	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.20.2020 15:47	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.20.2020 15:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.20.2020 15:47	
o-Terphenyl	84-15-1	96	%	70-135	11.20.2020 15:47	



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS69**
Lab Sample Id: 678525-007

Matrix: Soil
Date Collected: 11.18.2020 12:30

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 22:13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 22:13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 22:13	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.20.2020 22:13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 22:13	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 22:13	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 22:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	11.20.2020 22:13		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.20.2020 22:13		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS70** Matrix: Soil Date Received: 11.19.2020 15:17
 Lab Sample Id: 678525-008 Date Collected: 11.18.2020 12:32 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 15:30 % Moisture:
 Seq Number: 3142940 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	31.5	9.98	mg/kg	11.21.2020 00:22		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.20.2020 10:12 % Moisture:
 Seq Number: 3142991 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.20.2020 16:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.20.2020 16:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.20.2020 16:07	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.20.2020 16:07	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.20.2020 16:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.20.2020 16:07	
o-Terphenyl	84-15-1	108	%	70-135	11.20.2020 16:07	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS70**
Lab Sample Id: 678525-008

Matrix: Soil
Date Collected: 11.18.2020 12:32

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 22:35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 22:35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 22:35	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.20.2020 22:35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 22:35	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 22:35	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 22:35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.20.2020 22:35		
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.20.2020 22:35		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS71** Matrix: Soil Date Received: 11.19.2020 15:17
 Lab Sample Id: 678525-009 Date Collected: 11.18.2020 12:34 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.20.2020 15:30 % Moisture:
 Seq Number: 3142940 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	230	10.0	mg/kg	11.21.2020 00:28		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.20.2020 10:12 % Moisture:
 Seq Number: 3142991 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.20.2020 16:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.20.2020 16:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.20.2020 16:28	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.20.2020 16:28	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.20.2020 16:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.20.2020 16:28	
o-Terphenyl	84-15-1	113	%	70-135	11.20.2020 16:28	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS71**
Lab Sample Id: 678525-009

Matrix: Soil
Date Collected: 11.18.2020 12:34

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.20.2020 22:57	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.20.2020 22:57	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.20.2020 22:57	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.20.2020 22:57	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.20.2020 22:57	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.20.2020 22:57	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.20.2020 22:57	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.20.2020 22:57		
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.20.2020 22:57		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS72**
Lab Sample Id: 678525-010

Matrix: Soil
Date Collected: 11.18.2020 12:37

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142940

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	44.6	9.92	mg/kg	11.21.2020 00:33		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.20.2020 10:12

% Moisture:
Basis: Wet Weight

Seq Number: 3142991

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.20.2020 17:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.20.2020 17:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.20.2020 17:08	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.20.2020 17:08	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.20.2020 17:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.20.2020 17:08	
o-Terphenyl	84-15-1	105	%	70-135	11.20.2020 17:08	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS72**
Lab Sample Id: 678525-010

Matrix: Soil
Date Collected: 11.18.2020 12:37

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.21.2020 00:15	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.21.2020 00:15	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.21.2020 00:15	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.21.2020 00:15	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.21.2020 00:15	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.21.2020 00:15	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.21.2020 00:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.21.2020 00:15	
4-Bromofluorobenzene	460-00-4	88	%	70-130	11.21.2020 00:15	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS73**
Lab Sample Id: 678525-011

Matrix: Soil
Date Collected: 11.18.2020 12:39

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142940

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	327	10.0	mg/kg	11.21.2020 00:48		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.20.2020 10:12

% Moisture:
Basis: Wet Weight

Seq Number: 3142991

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.20.2020 17:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.20.2020 17:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.20.2020 17:28	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.20.2020 17:28	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.20.2020 17:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.20.2020 17:28	
o-Terphenyl	84-15-1	109	%	70-135	11.20.2020 17:28	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS73**
Lab Sample Id: 678525-011

Matrix: Soil
Date Collected: 11.18.2020 12:39

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.21.2020 00:37	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.21.2020 00:37	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.21.2020 00:37	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.21.2020 00:37	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.21.2020 00:37	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.21.2020 00:37	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.21.2020 00:37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.21.2020 00:37		
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.21.2020 00:37		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS74**
Lab Sample Id: 678525-012

Matrix: Soil
Date Collected: 11.18.2020 12:41

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142940

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	130	10.0	mg/kg	11.21.2020 00:53		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.20.2020 10:12

% Moisture:
Basis: Wet Weight

Seq Number: 3142991

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.20.2020 17:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.20.2020 17:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.20.2020 17:48	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.20.2020 17:48	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.20.2020 17:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.20.2020 17:48	
o-Terphenyl	84-15-1	113	%	70-135	11.20.2020 17:48	



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS74**
Lab Sample Id: 678525-012

Matrix: Soil
Date Collected: 11.18.2020 12:41

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.21.2020 01:00	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.21.2020 01:00	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.21.2020 01:00	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.21.2020 01:00	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.21.2020 01:00	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.21.2020 01:00	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.21.2020 01:00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.21.2020 01:00		
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.21.2020 01:00		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: FS75
Lab Sample Id: 678525-013

Matrix: Soil
Date Collected: 11.18.2020 12:43

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142940

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.6	9.94	mg/kg	11.21.2020 01:09		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.20.2020 10:12

% Moisture:
Basis: Wet Weight

Seq Number: 3142991

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.20.2020 18:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.20.2020 18:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.20.2020 18:08	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.20.2020 18:08	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.20.2020 18:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.20.2020 18:08	
o-Terphenyl	84-15-1	111	%	70-135	11.20.2020 18:08	



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS75**
Lab Sample Id: 678525-013

Matrix: Soil
Date Collected: 11.18.2020 12:43

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.21.2020 01:22	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.21.2020 01:22	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.21.2020 01:22	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.21.2020 01:22	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.21.2020 01:22	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.21.2020 01:22	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.21.2020 01:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	11.21.2020 01:22		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.21.2020 01:22		



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS76**
Lab Sample Id: 678525-014

Matrix: Soil
Date Collected: 11.18.2020 12:45

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 15:30

% Moisture:
Basis: Wet Weight

Seq Number: 3142940

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	61.2	9.98	mg/kg	11.21.2020 01:14		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.20.2020 10:12

% Moisture:
Basis: Wet Weight

Seq Number: 3142991

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.20.2020 18:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.20.2020 18:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.20.2020 18:28	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.20.2020 18:28	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.20.2020 18:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	11.20.2020 18:28	
o-Terphenyl	84-15-1	102	%	70-135	11.20.2020 18:28	



Certificate of Analytical Results 678525

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS76**
Lab Sample Id: 678525-014

Matrix: Soil
Date Collected: 11.18.2020 12:45

Date Received: 11.19.2020 15:17
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 10:58

% Moisture:
Basis: Wet Weight

Seq Number: 3142935

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.21.2020 01:45	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.21.2020 01:45	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.21.2020 01:45	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	11.21.2020 01:45	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.21.2020 01:45	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.21.2020 01:45	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.21.2020 01:45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.21.2020 01:45		
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.21.2020 01:45		

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.

Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3142940

MB Sample Id: 7715682-1-BLK

Matrix: Solid

LCS Sample Id: 7715682-1-BKS

Prep Method: E300P

Date Prep: 11.20.2020

LCSD Sample Id: 7715682-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	253	101	254	102	90-110	0	20	mg/kg	11.20.2020 23:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3142940

Parent Sample Id: 678524-003

Matrix: Soil

MS Sample Id: 678524-003 S

Prep Method: E300P

Date Prep: 11.20.2020

MSD Sample Id: 678524-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	225	199	428	102	427	101	90-110	0	20	mg/kg	11.20.2020 23:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3142940

Parent Sample Id: 678525-010

Matrix: Soil

MS Sample Id: 678525-010 S

Prep Method: E300P

Date Prep: 11.20.2020

MSD Sample Id: 678525-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	44.6	200	250	103	248	102	90-110	1	20	mg/kg	11.21.2020 00:38	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142991

MB Sample Id: 7715674-1-BLK

Matrix: Solid

LCS Sample Id: 7715674-1-BKS

Prep Method: SW8015P

Date Prep: 11.20.2020

LCSD Sample Id: 7715674-1-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	1100	110	957	96	70-135	14	35	mg/kg	11.20.2020 12:06	
Diesel Range Organics (DRO)	<50.0	1000	1170	117	1100	110	70-135	6	35	mg/kg	11.20.2020 12:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		116		116		70-135	%	11.20.2020 12:06
o-Terphenyl	109		123		109		70-135	%	11.20.2020 12:06

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142991

Matrix: Solid

MB Sample Id: 7715674-1-BLK

Prep Method: SW8015P

Date Prep: 11.20.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.20.2020 11:46	

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

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

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

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



LT Environmental, Inc.

Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3142991

Parent Sample Id: 678524-003

Matrix: Soil

MS Sample Id: 678524-003 S

Prep Method: SW8015P

Date Prep: 11.20.2020

MSD Sample Id: 678524-003 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)	<49.8	996	1110	111	1200	120	70-135	8	35	mg/kg	11.20.2020 13:06	
Diesel Range Organics (DRO)	<49.8	996	1060	106	1110	111	70-135	5	35	mg/kg	11.20.2020 13:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		105		70-135	%	11.20.2020 13:06
o-Terphenyl	106		108		70-135	%	11.20.2020 13:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142935

MB Sample Id: 7715671-1-BLK

Matrix: Solid

LCS Sample Id: 7715671-1-BKS

Prep Method: SW5035A

Date Prep: 11.20.2020

LCSD Sample Id: 7715671-1-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	0.113	113	0.103	103	70-130	9	35	mg/kg	11.20.2020 17:33	
Toluene	<0.00200	0.100	0.106	106	0.0970	97	70-130	9	35	mg/kg	11.20.2020 17:33	
Ethylbenzene	<0.00200	0.100	0.0969	97	0.0897	90	71-129	8	35	mg/kg	11.20.2020 17:33	
m,p-Xylenes	<0.00400	0.200	0.195	98	0.181	91	70-135	7	35	mg/kg	11.20.2020 17:33	
o-Xylene	<0.00200	0.100	0.0965	97	0.0909	91	71-133	6	35	mg/kg	11.20.2020 17:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		100		100		70-130	%	11.20.2020 17:33
4-Bromofluorobenzene	88		86		85		70-130	%	11.20.2020 17:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142935

Parent Sample Id: 678524-003

Matrix: Soil

MS Sample Id: 678524-003 S

Prep Method: SW5035A

Date Prep: 11.20.2020

MSD Sample Id: 678524-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.111	111	0.109	110	70-130	2	35	mg/kg	11.20.2020 18:18	
Toluene	<0.00200	0.0998	0.106	106	0.105	106	70-130	1	35	mg/kg	11.20.2020 18:18	
Ethylbenzene	<0.00200	0.0998	0.0975	98	0.0959	96	71-129	2	35	mg/kg	11.20.2020 18:18	
m,p-Xylenes	<0.00399	0.200	0.198	99	0.194	97	70-135	2	35	mg/kg	11.20.2020 18:18	
o-Xylene	<0.00200	0.0998	0.0971	97	0.0949	95	71-133	2	35	mg/kg	11.20.2020 18:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		99		70-130	%	11.20.2020 18:18
4-Bromofluorobenzene	82		86		70-130	%	11.20.2020 18:18

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

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

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

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



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: 678525

Chain of Custody

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:	kmalther@ltenv.com, dmoir@ltenv.com

Program: UST/PST ☐ RP ☐ Groundfields ☐ RC ☐ Deepfund ☐ State of Project: ☐ Reporting Level: I ☐ Level III ☐ F/T/UST ☐ RP ☐ Level IV ☐ Deliverables: EDD ☐ ADAPT ☐ Other: ☐	Work Order Comments Page <u>1</u> of <u>2</u>

Project Name:	Muy Wayno Frac Pond	Turn Around	☒
Project Number:	012920104	Routine	☒
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT Temperature (°C): <u>24/2.2</u> Received Intact: <u>Yes</u> No Cooler Custody Seals: Yes <u>No</u> N/A Sample Custody Seals: Yes <u>No</u> N/A	Temp Blank:	☒ Yes ☐ No	Wet Ice:	☒ Yes ☐ No
	Thermometer ID: <u>TEMP007</u>			
	Correction Factor: <u>-0.2</u>			
	Total Containers: <u>14</u>			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST														Work Order Notes
					Number of Containers														
SW74	S	11/18/2020	11:50	0-3'	1	X	X	X											Composite
SW75	S	11/18/2020	12:18	0-3'	1	X	X	X											Composite
SW76	S	11/18/2020	12:21	0-3'	1	X	X	X											Composite
FS66	S	11/18/2020	12:24	3'	1	X	X	X											Composite
FS67	S	11/18/2020	12:26	3'	1	X	X	X											Composite
FS68	S	11/18/2020	12:28	3'	1	X	X	X											Composite
FS69	S	11/18/2020	12:30	3'	1	X	X	X											Composite
FS70	S	11/18/2020	12:32	3'	1	X	X	X											Composite
FS71	S	11/18/2020	12:34	3'	1	X	X	X											Composite
FS72	S	11/18/2020	12:37	3'	1	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

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>	11-19-20 1517			
		4			
		6			



Chain of Custody

Work Order No: 678525

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 (575-382-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

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Page 2 of 2

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

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

Project Name:	Muy Wayno Frac Pond	Turn Around	
Project Number:	012920104	Routine	
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

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

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride (EPA)											lab, if received by 4:30pm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
FS73					S	11/18/2020	12:39	3'	1	X	X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

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>	11.19.20 15:17			

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.19.2020 03.17.00 PM

Work Order #: 678525

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:



Cloe Clifton

Date: 11.19.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.20.2020

Certificate of Analysis Summary 678611



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri 11.20.2020 08:52
Report Date: 11.25.2020 07:24
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	678611-001	678611-002	678611-003	678611-004	678611-005	678611-006
	<i>Field Id:</i>	FS77	FS78	FS79	FS80	SW77	SW78
	<i>Depth:</i>	3- ft	3- ft	3- ft	3- ft	0-3 ft	0-3 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.19.2020 12:53	11.19.2020 12:54	11.19.2020 12:56	11.19.2020 13:00	11.19.2020 13:02	11.19.2020 13:04
BTEX by EPA 8021B	<i>Extracted:</i>	11.20.2020 18:08	11.20.2020 18:08	11.20.2020 18:08	11.20.2020 18:08	11.20.2020 18:08	11.20.2020 18:08
	<i>Analyzed:</i>	11.21.2020 04:08	11.21.2020 04:31	11.21.2020 04:53	11.21.2020 05:15	11.21.2020 05:38	11.21.2020 06:00
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
m,p-Xylenes		<0.00401 0.00401	<0.00402 0.00402	<0.00397 0.00397	<0.00399 0.00399	<0.00398 0.00398	<0.00397 0.00397
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198
Total Xylenes		<0.002000 0.002000	<0.002010 0.002010	<0.001980 0.001980	<0.002000 0.002000	<0.001990 0.001990	<0.001980 0.001980
Total BTEX		<0.002000 0.002000	<0.002010 0.002010	<0.001980 0.001980	<0.002000 0.002000	<0.001990 0.001990	<0.001980 0.001980
Chloride by EPA 300	<i>Extracted:</i>	11.23.2020 07:57	11.23.2020 07:57	11.23.2020 07:57	11.23.2020 07:57	11.23.2020 07:57	11.23.2020 07:57
	<i>Analyzed:</i>	11.23.2020 12:54	11.23.2020 13:10	11.23.2020 13:15	11.23.2020 13:20	11.23.2020 13:25	11.23.2020 13:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		20.6 9.90	17.5 10.0	30.2 10.0	17.9 9.98	21.7 9.96	112 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	11.21.2020 16:00	11.21.2020 16:00	11.21.2020 16:00	11.21.2020 16:00	11.21.2020 16:00	11.21.2020 16:00
	<i>Analyzed:</i>	11.21.2020 19:39	11.21.2020 20:39	11.21.2020 21:00	11.21.2020 21:20	11.21.2020 21:41	11.21.2020 22:01
	<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)		<49.8 49.8	<49.9 49.9	<49.8 49.8	<49.8 49.8	<50.0 50.0	<50.2 50.2
Diesel Range Organics (DRO)		<49.8 49.8	<49.9 49.9	<49.8 49.8	<49.8 49.8	<50.0 50.0	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.9 49.9	<49.8 49.8	<49.8 49.8	<50.0 50.0	<50.2 50.2
Total GRO-DRO		<49.80 49.80	<49.90 49.90	<49.80 49.80	<49.80 49.80	<50.00 50.00	<50.20 50.20
Total TPH		<49.80 49.80	<49.90 49.90	<49.80 49.80	<49.80 49.80	<50.00 50.00	<50.20 50.20

BRL - Below Reporting Limit

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



Analytical Report 678611

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.25.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.25.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **678611**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 678611. 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. 678611 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 678611****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS77	S	11.19.2020 12:53	3 ft	678611-001
FS78	S	11.19.2020 12:54	3 ft	678611-002
FS79	S	11.19.2020 12:56	3 ft	678611-003
FS80	S	11.19.2020 13:00	3 ft	678611-004
SW77	S	11.19.2020 13:02	0 - 3 ft	678611-005
SW78	S	11.19.2020 13:04	0 - 3 ft	678611-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 678611

Report Date: 11.25.2020
Date Received: 11.20.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS77**
Lab Sample Id: 678611-001

Matrix: Soil
Date Collected: 11.19.2020 12:53

Date Received: 11.20.2020 08:52
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.23.2020 07:57

% Moisture:
Basis: Wet Weight

Seq Number: 3143165

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.6	9.90	mg/kg	11.23.2020 12:54		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.21.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143019

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.21.2020 19:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.21.2020 19:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.21.2020 19:39	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.21.2020 19:39	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.21.2020 19:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.21.2020 19:39	
o-Terphenyl	84-15-1	112	%	70-135	11.21.2020 19:39	



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS77**
 Lab Sample Id: 678611-001

Matrix: Soil
 Date Collected: 11.19.2020 12:53

Date Received: 11.20.2020 08:52
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 18:08

% Moisture:
 Basis: Wet Weight

Seq Number: 3142997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.21.2020 04:08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.21.2020 04:08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.21.2020 04:08	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.21.2020 04:08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.21.2020 04:08	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.21.2020 04:08	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.21.2020 04:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.21.2020 04:08	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.21.2020 04:08	



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS78**
Lab Sample Id: 678611-002

Matrix: Soil
Date Collected: 11.19.2020 12:54

Date Received: 11.20.2020 08:52
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.23.2020 07:57

% Moisture:
Basis: Wet Weight

Seq Number: 3143165

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.5	10.0	mg/kg	11.23.2020 13:10		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.21.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143019

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.21.2020 20:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.21.2020 20:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.21.2020 20:39	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.21.2020 20:39	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.21.2020 20:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.21.2020 20:39	
o-Terphenyl	84-15-1	107	%	70-135	11.21.2020 20:39	



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS78**
Lab Sample Id: 678611-002

Matrix: Soil
Date Collected: 11.19.2020 12:54

Date Received: 11.20.2020 08:52
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 18:08

% Moisture:
Basis: Wet Weight

Seq Number: 3142997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.21.2020 04:31	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.21.2020 04:31	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.21.2020 04:31	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.21.2020 04:31	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.21.2020 04:31	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	11.21.2020 04:31	U	1
Total BTEX		<0.002010	0.002010	mg/kg	11.21.2020 04:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.21.2020 04:31	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.21.2020 04:31	



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS79** Matrix: Soil Date Received: 11.20.2020 08:52
 Lab Sample Id: 678611-003 Date Collected: 11.19.2020 12:56 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.23.2020 07:57 % Moisture:
 Seq Number: 3143165 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.2	10.0	mg/kg	11.23.2020 13:15		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.21.2020 16:00 % Moisture:
 Seq Number: 3143019 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.21.2020 21:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.21.2020 21:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.21.2020 21:00	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.21.2020 21:00	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.21.2020 21:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.21.2020 21:00	
o-Terphenyl	84-15-1	106	%	70-135	11.21.2020 21:00	



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS79**
Lab Sample Id: 678611-003

Matrix: Soil
Date Collected: 11.19.2020 12:56

Date Received: 11.20.2020 08:52
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 18:08

% Moisture:
Basis: Wet Weight

Seq Number: 3142997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.21.2020 04:53	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.21.2020 04:53	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.21.2020 04:53	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.21.2020 04:53	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.21.2020 04:53	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.21.2020 04:53	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.21.2020 04:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.21.2020 04:53	
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.21.2020 04:53	



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS80**
Lab Sample Id: 678611-004

Matrix: Soil
Date Collected: 11.19.2020 13:00

Date Received: 11.20.2020 08:52
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.23.2020 07:57

% Moisture:
Basis: Wet Weight

Seq Number: 3143165

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.9	9.98	mg/kg	11.23.2020 13:20		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.21.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143019

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.21.2020 21:20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.21.2020 21:20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.21.2020 21:20	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.21.2020 21:20	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.21.2020 21:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.21.2020 21:20	
o-Terphenyl	84-15-1	96	%	70-135	11.21.2020 21:20	



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS80**
Lab Sample Id: 678611-004

Matrix: Soil
Date Collected: 11.19.2020 13:00

Date Received: 11.20.2020 08:52
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 18:08

% Moisture:
Basis: Wet Weight

Seq Number: 3142997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.21.2020 05:15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.21.2020 05:15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.21.2020 05:15	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.21.2020 05:15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.21.2020 05:15	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.21.2020 05:15	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.21.2020 05:15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.21.2020 05:15		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.21.2020 05:15		



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW77** Matrix: Soil Date Received: 11.20.2020 08:52
 Lab Sample Id: 678611-005 Date Collected: 11.19.2020 13:02 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.23.2020 07:57 % Moisture:
 Seq Number: 3143165 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.7	9.96	mg/kg	11.23.2020 13:25		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.21.2020 16:00 % Moisture:
 Seq Number: 3143019 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.21.2020 21:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.21.2020 21:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.21.2020 21:41	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.21.2020 21:41	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.21.2020 21:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.21.2020 21:41	
o-Terphenyl	84-15-1	101	%	70-135	11.21.2020 21:41	



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW77**
Lab Sample Id: 678611-005

Matrix: Soil
Date Collected: 11.19.2020 13:02

Date Received: 11.20.2020 08:52
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 18:08

% Moisture:
Basis: Wet Weight

Seq Number: 3142997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.21.2020 05:38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.21.2020 05:38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.21.2020 05:38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.21.2020 05:38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.21.2020 05:38	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.21.2020 05:38	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.21.2020 05:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.21.2020 05:38	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.21.2020 05:38	



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW78**
Lab Sample Id: 678611-006

Matrix: Soil
Date Collected: 11.19.2020 13:04

Date Received: 11.20.2020 08:52
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.23.2020 07:57

% Moisture:
Basis: Wet Weight

Seq Number: 3143165

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	112	9.98	mg/kg	11.23.2020 13:41		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.21.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143019

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.21.2020 22:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.21.2020 22:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.21.2020 22:01	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.21.2020 22:01	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.21.2020 22:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.21.2020 22:01	
o-Terphenyl	84-15-1	109	%	70-135	11.21.2020 22:01	



Certificate of Analytical Results 678611

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW78**
Lab Sample Id: 678611-006

Matrix: Soil
Date Collected: 11.19.2020 13:04

Date Received: 11.20.2020 08:52
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.20.2020 18:08

% Moisture:
Basis: Wet Weight

Seq Number: 3142997

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.21.2020 06:00	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.21.2020 06:00	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.21.2020 06:00	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.21.2020 06:00	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.21.2020 06:00	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.21.2020 06:00	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.21.2020 06:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.21.2020 06:00	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.21.2020 06:00	



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.

Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3143165

MB Sample Id: 7715706-1-BLK

Matrix: Solid

LCS Sample Id: 7715706-1-BKS

Prep Method: E300P

Date Prep: 11.23.2020

LCSD Sample Id: 7715706-1-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	246	98	242	97	90-110	2	20	mg/kg	11.23.2020 12:44	

Analytical Method: Chloride by EPA 300

Seq Number: 3143165

Parent Sample Id: 678611-001

Matrix: Soil

MS Sample Id: 678611-001 S

Prep Method: E300P

Date Prep: 11.23.2020

MSD Sample Id: 678611-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	20.6	199	211	96	212	96	90-110	0	20	mg/kg	11.23.2020 12:59	

Analytical Method: Chloride by EPA 300

Seq Number: 3143165

Parent Sample Id: 678616-005

Matrix: Soil

MS Sample Id: 678616-005 S

Prep Method: E300P

Date Prep: 11.23.2020

MSD Sample Id: 678616-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	217	200	407	95	404	94	90-110	1	20	mg/kg	11.23.2020 14:12	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143019

MB Sample Id: 7715746-1-BLK

Matrix: Solid

LCS Sample Id: 7715746-1-BKS

Prep Method: SW8015P

Date Prep: 11.21.2020

LCSD Sample Id: 7715746-1-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	952	95	897	90	70-135	6	35	mg/kg	11.21.2020 18:58	
Diesel Range Organics (DRO)	<50.0	1000	1080	108	1050	105	70-135	3	35	mg/kg	11.21.2020 18:58	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		131		127		70-135	%	11.21.2020 18:58
o-Terphenyl	110		104		104		70-135	%	11.21.2020 18:58

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143019

Matrix: Solid

MB Sample Id: 7715746-1-BLK

Prep Method: SW8015P

Date Prep: 11.21.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.21.2020 18:38	

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

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

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

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



LT Environmental, Inc.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143019

Parent Sample Id: 678611-001

Matrix: Soil

MS Sample Id: 678611-001 S

Prep Method: SW8015P

Date Prep: 11.21.2020

MSD Sample Id: 678611-001 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	1070	107	1010	101	70-135	6	35	mg/kg	11.21.2020 19:59	
Diesel Range Organics (DRO)	<50.2	1000	1000	100	1120	112	70-135	11	35	mg/kg	11.21.2020 19:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		99		70-135	%	11.21.2020 19:59
o-Terphenyl	108		108		70-135	%	11.21.2020 19:59

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142997

MB Sample Id: 7715673-1-BLK

Matrix: Solid

LCS Sample Id: 7715673-1-BKS

Prep Method: SW5035A

Date Prep: 11.20.2020

LCSD Sample Id: 7715673-1-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	0.101	101	0.0982	98	70-130	3	35	mg/kg	11.21.2020 02:04	
Toluene	<0.00200	0.100	0.0953	95	0.0911	91	70-130	5	35	mg/kg	11.21.2020 02:04	
Ethylbenzene	<0.00200	0.100	0.0985	99	0.0943	94	71-129	4	35	mg/kg	11.21.2020 02:04	
m,p-Xylenes	<0.00400	0.200	0.199	100	0.191	96	70-135	4	35	mg/kg	11.21.2020 02:04	
o-Xylene	<0.00200	0.100	0.0986	99	0.0946	95	71-133	4	35	mg/kg	11.21.2020 02:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		99		97		70-130	%	11.21.2020 02:04
4-Bromofluorobenzene	118		107		106		70-130	%	11.21.2020 02:04

Analytical Method: BTEX by EPA 8021B

Seq Number: 3142997

Parent Sample Id: 678611-001

Matrix: Soil

MS Sample Id: 678611-001 S

Prep Method: SW5035A

Date Prep: 11.20.2020

MSD Sample Id: 678611-001 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	0.0930	93	0.0909	91	70-130	2	35	mg/kg	11.21.2020 02:48	
Toluene	<0.00200	0.0998	0.0873	87	0.0863	86	70-130	1	35	mg/kg	11.21.2020 02:48	
Ethylbenzene	<0.00200	0.0998	0.0928	93	0.0910	91	71-129	2	35	mg/kg	11.21.2020 02:48	
m,p-Xylenes	<0.00399	0.200	0.183	92	0.181	90	70-135	1	35	mg/kg	11.21.2020 02:48	
o-Xylene	<0.00200	0.0998	0.0899	90	0.0909	91	71-133	1	35	mg/kg	11.21.2020 02:48	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		103		70-130	%	11.21.2020 02:48
4-Bromofluorobenzene	109		107		70-130	%	11.21.2020 02:48

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

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)

Work Order No: Le-8611

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:	ymathner@ltenv.com, dmoir@ltenv.com

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

ANALYSIS REQUEST										Work Order Notes																													
Project Name:	Muy Wayno Frac Pond					Turn Around:																																	
Project Number:	012920104					Routine		1																															
P.O. Number:	Eddy					Rush:																																	
Sampler's Name:	William Mather					Due Date:																																	
<table border="1"> <thead> <tr> <th colspan="4">SAMPLE RECEIPT</th> </tr> </thead> <tbody> <tr> <td>Temperature (°C):</td> <td>4.4/4.2</td> <td>Temp Blank:</td> <td>Yes No</td> <td>Wet Ice:</td> <td>Yes No</td> </tr> <tr> <td>Received In tact:</td> <td>Yes No</td> <td colspan="4">Thermometer ID</td> </tr> <tr> <td>Cooler Custody Seals:</td> <td>Yes No</td> <td colspan="4">Correction Factor:</td> </tr> <tr> <td>Sample Custody Seals:</td> <td>Yes No</td> <td colspan="4">Total Containers:</td> </tr> </tbody> </table>												SAMPLE RECEIPT				Temperature (°C):	4.4/4.2	Temp Blank:	Yes No	Wet Ice:	Yes No	Received In tact:	Yes No	Thermometer ID				Cooler Custody Seals:	Yes No	Correction Factor:				Sample Custody Seals:	Yes No	Total Containers:			
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Sample Custody Seals:	Yes No	Total Containers:																																					
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EPA 300.0)																																							
TAT starts the day received by the																																							

[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
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 : Hd			

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
		11/20/20 @ 0845			11.20.20 0855

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.20.2020 08.52.00 AM

Work Order #: 678611

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
#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:



Cloe Clifton

Date: 11.20.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.23.2020

Certificate of Analysis Summary 678848



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Mon 11.23.2020 16:18
Report Date: 11.30.2020 10:27
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	678848-001	678848-002	678848-003	678848-004	678848-005	678848-006
	<i>Field Id:</i>	FS81	FS82	FS83	FS84	FS85	FS86
	<i>Depth:</i>	3- ft	3- ft	3- ft	3- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.20.2020 11:19	11.20.2020 11:21	11.20.2020 11:22	11.20.2020 11:23	11.20.2020 11:25	11.20.2020 11:27
BTEX by EPA 8021B	<i>Extracted:</i>	11.24.2020 10:36	11.24.2020 10:36	11.24.2020 10:36	11.24.2020 10:36	11.24.2020 10:36	11.24.2020 10:36
	<i>Analyzed:</i>	11.24.2020 17:08	11.24.2020 17:30	11.24.2020 17:53	11.24.2020 18:15	11.24.2020 19:35	11.24.2020 19:58
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00397 0.00397	<0.00399 0.00399	<0.00401 0.00401	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.002000 0.002000	<0.001980 0.001980	<0.002000 0.002000	<0.002000 0.002000	<0.001990 0.001990	<0.002000 0.002000
Total BTEX		<0.002000 0.002000	<0.001980 0.001980	<0.002000 0.002000	<0.002000 0.002000	<0.001990 0.001990	<0.002000 0.002000
Chloride by EPA 300	<i>Extracted:</i>	11.24.2020 14:00	11.24.2020 14:00	11.24.2020 14:00	11.24.2020 14:00	11.24.2020 14:00	11.24.2020 14:00
	<i>Analyzed:</i>	11.24.2020 17:31	11.24.2020 17:37	11.24.2020 17:42	11.24.2020 17:47	11.24.2020 17:52	11.24.2020 18:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		46.2 9.92	67.2 9.88	72.7 9.98	69.9 9.92	23.8 10.0	40.1 9.92
TPH by SW8015 Mod	<i>Extracted:</i>	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30
	<i>Analyzed:</i>	11.24.2020 17:28	11.24.2020 17:49	11.24.2020 18:09	11.24.2020 18:30	11.24.2020 19:12	11.24.2020 19:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.2 50.2	<50.0 50.0
Diesel Range Organics (DRO)		<50.1 50.1	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.2 50.2	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<49.8 49.8	<50.0 50.0	<49.9 49.9	<50.2 50.2	<50.0 50.0
Total GRO-DRO		<50.10 50.10	<49.80 49.80	<50.00 50.00	<49.90 49.90	<50.20 50.20	<50.00 50.00
Total TPH		<50.10 50.10	<49.80 49.80	<50.00 50.00	<49.90 49.90	<50.20 50.20	<50.00 50.00

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 678848



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: 012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Mon 11.23.2020 16:18
Report Date: 11.30.2020 10:27
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	678848-007	678848-008	678848-009	678848-010	678848-011	678848-012
	<i>Field Id:</i>	FS87	FS88	FS89	FS90	SW79	SW80
	<i>Depth:</i>	3- ft	3- ft	3- ft	3- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.20.2020 11:28	11.20.2020 11:29	11.20.2020 11:31	11.20.2020 11:32	11.20.2020 11:19	11.20.2020 11:21
BTEX by EPA 8021B	<i>Extracted:</i>	11.24.2020 10:36	11.24.2020 10:36	11.24.2020 10:36	11.24.2020 10:36	11.24.2020 10:36	11.24.2020 10:36
	<i>Analyzed:</i>	11.24.2020 20:20	11.24.2020 20:43	11.24.2020 21:05	11.24.2020 21:27	11.24.2020 21:50	11.24.2020 22:12
	<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	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00397 0.00397	<0.00399 0.00399	<0.00401 0.00401	<0.00403 0.00403	<0.00401 0.00401	<0.00397 0.00397
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.001980 0.001980	<0.002000 0.002000	<0.002000 0.002000	<0.002020 0.002020	<0.002000 0.002000	<0.001980 0.001980
Total BTEX		<0.001980 0.001980	<0.002000 0.002000	<0.002000 0.002000	<0.002020 0.002020	<0.002000 0.002000	<0.001980 0.001980
Chloride by EPA 300	<i>Extracted:</i>	11.24.2020 14:00	11.24.2020 14:00	11.24.2020 14:00	11.24.2020 14:00	11.24.2020 14:00	11.24.2020 14:00
	<i>Analyzed:</i>	11.24.2020 18:13	11.24.2020 18:28	11.24.2020 18:34	11.24.2020 18:39	11.24.2020 18:44	11.24.2020 18:49
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		22.4 9.98	51.0 10.0	29.9 9.94	40.2 9.96	272 10.0	334 9.96
TPH by SW8015 Mod	<i>Extracted:</i>	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30
	<i>Analyzed:</i>	11.24.2020 19:52	11.24.2020 20:13	11.24.2020 20:33	11.24.2020 20:53	11.24.2020 21:13	11.24.2020 21:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.0 50.0	<50.2 50.2	<50.0 50.0	<49.9 49.9	<49.9 49.9
Diesel Range Organics (DRO)		<50.2 50.2	<50.0 50.0	<50.2 50.2	<50.0 50.0	<49.9 49.9	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.0 50.0	<50.2 50.2	<50.0 50.0	<49.9 49.9	<49.9 49.9
Total GRO-DRO		<50.20 50.20	<50.00 50.00	<50.20 50.20	<50.00 50.00	<49.90 49.90	<49.90 49.90
Total TPH		<50.20 50.20	<50.00 50.00	<50.20 50.20	<50.00 50.00	<49.90 49.90	<49.90 49.90

BRL - Below Reporting Limit

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



Analytical Report 678848

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

012920104

11.30.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.30.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **678848**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 678848. 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. 678848 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 678848****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS81	S	11.20.2020 11:19	3 ft	678848-001
FS82	S	11.20.2020 11:21	3 ft	678848-002
FS83	S	11.20.2020 11:22	3 ft	678848-003
FS84	S	11.20.2020 11:23	3 ft	678848-004
FS85	S	11.20.2020 11:25	3 ft	678848-005
FS86	S	11.20.2020 11:27	3 ft	678848-006
FS87	S	11.20.2020 11:28	3 ft	678848-007
FS88	S	11.20.2020 11:29	3 ft	678848-008
FS89	S	11.20.2020 11:31	3 ft	678848-009
FS90	S	11.20.2020 11:32	3 ft	678848-010
SW79	S	11.20.2020 11:19	3 ft	678848-011
SW80	S	11.20.2020 11:21	3 ft	678848-012



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: 012920104
Work Order Number(s): 678848

Report Date: 11.30.2020
Date Received: 11.23.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS81** Matrix: Soil Date Received: 11.23.2020 16:18
 Lab Sample Id: 678848-001 Date Collected: 11.20.2020 11:19 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 14:00 % Moisture:
 Seq Number: 3143277 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	46.2	9.92	mg/kg	11.24.2020 17:31		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143271 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.24.2020 17:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.24.2020 17:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.24.2020 17:28	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.24.2020 17:28	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.24.2020 17:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.24.2020 17:28	
o-Terphenyl	84-15-1	116	%	70-135	11.24.2020 17:28	



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS81**
 Lab Sample Id: 678848-001

Matrix: Soil
 Date Collected: 11.20.2020 11:19

Date Received: 11.23.2020 16:18
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
 Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.24.2020 17:08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.24.2020 17:08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.24.2020 17:08	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.24.2020 17:08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.24.2020 17:08	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.24.2020 17:08	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.24.2020 17:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.24.2020 17:08		
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.24.2020 17:08		



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS82**
Lab Sample Id: 678848-002

Matrix: Soil
Date Collected: 11.20.2020 11:21

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143277

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	67.2	9.88	mg/kg	11.24.2020 17:37		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.24.2020 12:30

% Moisture:
Basis: Wet Weight

Seq Number: 3143271

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.24.2020 17:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.24.2020 17:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.24.2020 17:49	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.24.2020 17:49	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.24.2020 17:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.24.2020 17:49	
o-Terphenyl	84-15-1	126	%	70-135	11.24.2020 17:49	



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS82**
Lab Sample Id: 678848-002

Matrix: Soil
Date Collected: 11.20.2020 11:21

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.24.2020 17:30	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.24.2020 17:30	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.24.2020 17:30	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.24.2020 17:30	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.24.2020 17:30	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.24.2020 17:30	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.24.2020 17:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.24.2020 17:30	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.24.2020 17:30	



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS83**
Lab Sample Id: 678848-003

Matrix: Soil
Date Collected: 11.20.2020 11:22

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143277

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	72.7	9.98	mg/kg	11.24.2020 17:42		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.24.2020 12:30

% Moisture:
Basis: Wet Weight

Seq Number: 3143271

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.24.2020 18:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.24.2020 18:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.24.2020 18:09	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.24.2020 18:09	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.24.2020 18:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.24.2020 18:09	
o-Terphenyl	84-15-1	111	%	70-135	11.24.2020 18:09	



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS83**
 Lab Sample Id: 678848-003

Matrix: Soil
 Date Collected: 11.20.2020 11:22

Date Received: 11.23.2020 16:18
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
 Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.24.2020 17:53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.24.2020 17:53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.24.2020 17:53	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.24.2020 17:53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.24.2020 17:53	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.24.2020 17:53	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.24.2020 17:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.24.2020 17:53	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.24.2020 17:53	



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS84**
Lab Sample Id: 678848-004

Matrix: Soil
Date Collected: 11.20.2020 11:23

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143277

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	69.9	9.92	mg/kg	11.24.2020 17:47		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.24.2020 12:30

% Moisture:
Basis: Wet Weight

Seq Number: 3143271

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.24.2020 18:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.24.2020 18:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.24.2020 18:30	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.24.2020 18:30	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.24.2020 18:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.24.2020 18:30	
o-Terphenyl	84-15-1	109	%	70-135	11.24.2020 18:30	



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS84**
Lab Sample Id: 678848-004

Matrix: Soil
Date Collected: 11.20.2020 11:23

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.24.2020 18:15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.24.2020 18:15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.24.2020 18:15	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.24.2020 18:15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.24.2020 18:15	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.24.2020 18:15	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.24.2020 18:15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.24.2020 18:15		
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.24.2020 18:15		



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS85** Matrix: Soil Date Received: 11.23.2020 16:18
 Lab Sample Id: 678848-005 Date Collected: 11.20.2020 11:25 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 14:00 % Moisture:
 Seq Number: 3143277 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.8	10.0	mg/kg	11.24.2020 17:52		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143271 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.24.2020 19:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.24.2020 19:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.24.2020 19:12	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.24.2020 19:12	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.24.2020 19:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.24.2020 19:12	
o-Terphenyl	84-15-1	117	%	70-135	11.24.2020 19:12	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS85**
 Lab Sample Id: 678848-005

Matrix: Soil
 Date Collected: 11.20.2020 11:25

Date Received: 11.23.2020 16:18
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
 Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.24.2020 19:35	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.24.2020 19:35	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.24.2020 19:35	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.24.2020 19:35	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.24.2020 19:35	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.24.2020 19:35	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.24.2020 19:35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.24.2020 19:35		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.24.2020 19:35		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS86**
Lab Sample Id: 678848-006

Matrix: Soil
Date Collected: 11.20.2020 11:27

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143277

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	40.1	9.92	mg/kg	11.24.2020 18:08		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.24.2020 12:30

% Moisture:
Basis: Wet Weight

Seq Number: 3143271

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.24.2020 19:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.24.2020 19:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.24.2020 19:32	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.24.2020 19:32	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.24.2020 19:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.24.2020 19:32	
o-Terphenyl	84-15-1	107	%	70-135	11.24.2020 19:32	



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS86**
Lab Sample Id: 678848-006

Matrix: Soil
Date Collected: 11.20.2020 11:27

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.24.2020 19:58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.24.2020 19:58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.24.2020 19:58	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.24.2020 19:58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.24.2020 19:58	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.24.2020 19:58	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.24.2020 19:58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	70-130	11.24.2020 19:58		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.24.2020 19:58		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS87**
Lab Sample Id: 678848-007

Matrix: Soil
Date Collected: 11.20.2020 11:28

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143277

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.4	9.98	mg/kg	11.24.2020 18:13		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.24.2020 12:30

% Moisture:
Basis: Wet Weight

Seq Number: 3143271

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.24.2020 19:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.24.2020 19:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.24.2020 19:52	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.24.2020 19:52	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.24.2020 19:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.24.2020 19:52	
o-Terphenyl	84-15-1	98	%	70-135	11.24.2020 19:52	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS87**
Lab Sample Id: 678848-007

Matrix: Soil
Date Collected: 11.20.2020 11:28

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.24.2020 20:20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.24.2020 20:20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.24.2020 20:20	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.24.2020 20:20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.24.2020 20:20	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.24.2020 20:20	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.24.2020 20:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.24.2020 20:20	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.24.2020 20:20	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS88**
Lab Sample Id: 678848-008

Matrix: Soil
Date Collected: 11.20.2020 11:29

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143277

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.0	10.0	mg/kg	11.24.2020 18:28		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.24.2020 12:30

% Moisture:
Basis: Wet Weight

Seq Number: 3143271

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.24.2020 20:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.24.2020 20:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.24.2020 20:13	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.24.2020 20:13	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.24.2020 20:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	11.24.2020 20:13	
o-Terphenyl	84-15-1	111	%	70-135	11.24.2020 20:13	



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS88**
Lab Sample Id: 678848-008

Matrix: Soil
Date Collected: 11.20.2020 11:29

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.24.2020 20:43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.24.2020 20:43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.24.2020 20:43	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.24.2020 20:43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.24.2020 20:43	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.24.2020 20:43	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.24.2020 20:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.24.2020 20:43		
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.24.2020 20:43		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS89** Matrix: Soil Date Received: 11.23.2020 16:18
 Lab Sample Id: 678848-009 Date Collected: 11.20.2020 11:31 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 14:00 % Moisture:
 Seq Number: 3143277 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.9	9.94	mg/kg	11.24.2020 18:34		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143271 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.24.2020 20:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.24.2020 20:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.24.2020 20:33	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.24.2020 20:33	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.24.2020 20:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	11.24.2020 20:33	
o-Terphenyl	84-15-1	107	%	70-135	11.24.2020 20:33	



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS89**
Lab Sample Id: 678848-009

Matrix: Soil
Date Collected: 11.20.2020 11:31

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.24.2020 21:05	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.24.2020 21:05	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.24.2020 21:05	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.24.2020 21:05	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.24.2020 21:05	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.24.2020 21:05	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.24.2020 21:05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.24.2020 21:05		
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.24.2020 21:05		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS90** Matrix: Soil Date Received: 11.23.2020 16:18
 Lab Sample Id: 678848-010 Date Collected: 11.20.2020 11:32 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 14:00 % Moisture:
 Seq Number: 3143277 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	40.2	9.96	mg/kg	11.24.2020 18:39		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143271 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.24.2020 20:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.24.2020 20:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.24.2020 20:53	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.24.2020 20:53	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.24.2020 20:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.24.2020 20:53	
o-Terphenyl	84-15-1	118	%	70-135	11.24.2020 20:53	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS90**
Lab Sample Id: 678848-010

Matrix: Soil
Date Collected: 11.20.2020 11:32

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.24.2020 21:27	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.24.2020 21:27	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.24.2020 21:27	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.24.2020 21:27	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.24.2020 21:27	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.24.2020 21:27	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.24.2020 21:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.24.2020 21:27	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.24.2020 21:27	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW79**
Lab Sample Id: 678848-011

Matrix: Soil
Date Collected: 11.20.2020 11:19

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143277

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	272	10.0	mg/kg	11.24.2020 18:44		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.24.2020 12:30

% Moisture:
Basis: Wet Weight

Seq Number: 3143271

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.24.2020 21:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.24.2020 21:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.24.2020 21:13	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.24.2020 21:13	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.24.2020 21:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.24.2020 21:13	
o-Terphenyl	84-15-1	102	%	70-135	11.24.2020 21:13	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW79**
Lab Sample Id: 678848-011

Matrix: Soil
Date Collected: 11.20.2020 11:19

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.24.2020 21:50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.24.2020 21:50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.24.2020 21:50	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.24.2020 21:50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.24.2020 21:50	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.24.2020 21:50	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.24.2020 21:50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.24.2020 21:50		
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.24.2020 21:50		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW80**
Lab Sample Id: 678848-012

Matrix: Soil
Date Collected: 11.20.2020 11:21

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 14:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143277

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	334	9.96	mg/kg	11.24.2020 18:49		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.24.2020 12:30

% Moisture:
Basis: Wet Weight

Seq Number: 3143271

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.24.2020 21:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.24.2020 21:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.24.2020 21:33	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.24.2020 21:33	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.24.2020 21:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.24.2020 21:33	
o-Terphenyl	84-15-1	100	%	70-135	11.24.2020 21:33	



Certificate of Analytical Results 678848

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW80**
Lab Sample Id: 678848-012

Matrix: Soil
Date Collected: 11.20.2020 11:21

Date Received: 11.23.2020 16:18
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 10:36

% Moisture:
Basis: Wet Weight

Seq Number: 3143258

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.24.2020 22:12	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.24.2020 22:12	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.24.2020 22:12	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.24.2020 22:12	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.24.2020 22:12	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.24.2020 22:12	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.24.2020 22:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.24.2020 22:12	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.24.2020 22:12	



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.
Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3143277

MB Sample Id: 7715945-1-BLK

Matrix: Solid

LCS Sample Id: 7715945-1-BKS

Prep Method: E300P

Date Prep: 11.24.2020

LCSD Sample Id: 7715945-1-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	240	96	238	95	90-110	1	20	mg/kg	11.24.2020 15:42	

Analytical Method: Chloride by EPA 300

Seq Number: 3143277

Parent Sample Id: 678846-001

Matrix: Soil

MS Sample Id: 678846-001 S

Prep Method: E300P

Date Prep: 11.24.2020

MSD Sample Id: 678846-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2690	200	2870	90	2890	101	90-110	1	20	mg/kg	11.24.2020 16:45	

Analytical Method: Chloride by EPA 300

Seq Number: 3143277

Parent Sample Id: 678848-005

Matrix: Soil

MS Sample Id: 678848-005 S

Prep Method: E300P

Date Prep: 11.24.2020

MSD Sample Id: 678848-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	23.8	201	219	97	220	97	90-110	0	20	mg/kg	11.24.2020 17:57	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143271

MB Sample Id: 7715952-1-BLK

Matrix: Solid

LCS Sample Id: 7715952-1-BKS

Prep Method: SW8015P

Date Prep: 11.24.2020

LCSD Sample Id: 7715952-1-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	1130	113	1020	102	70-135	10	35	mg/kg	11.24.2020 14:06	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1200	120	70-135	9	35	mg/kg	11.24.2020 14:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		109		130		70-135	%	11.24.2020 14:06
o-Terphenyl	119		128		119		70-135	%	11.24.2020 14:06

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143271

Matrix: Solid

MB Sample Id: 7715952-1-BLK

Prep Method: SW8015P

Date Prep: 11.24.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.24.2020 13:46	

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

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

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

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



LT Environmental, Inc.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143271

Parent Sample Id: 678846-001

Matrix: Soil

MS Sample Id: 678846-001 S

Prep Method: SW8015P

Date Prep: 11.24.2020

MSD Sample Id: 678846-001 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	997	1110	111	1060	106	70-135	5	35	mg/kg	11.24.2020 15:06	
Diesel Range Organics (DRO)	<49.9	997	1090	109	1120	112	70-135	3	35	mg/kg	11.24.2020 15:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		113		70-135	%	11.24.2020 15:06
o-Terphenyl	112		108		70-135	%	11.24.2020 15:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143258

MB Sample Id: 7715911-1-BLK

Matrix: Solid

LCS Sample Id: 7715911-1-BKS

Prep Method: SW5035A

Date Prep: 11.24.2020

LCSD Sample Id: 7715911-1-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	0.104	104	70-130	3	35	mg/kg	11.24.2020 10:40	
Toluene	<0.00200	0.100	0.0982	98	0.0974	97	70-130	1	35	mg/kg	11.24.2020 10:40	
Ethylbenzene	<0.00200	0.100	0.101	101	0.101	101	71-129	0	35	mg/kg	11.24.2020 10:40	
m,p-Xylenes	<0.00400	0.200	0.208	104	0.205	103	70-135	1	35	mg/kg	11.24.2020 10:40	
o-Xylene	<0.00200	0.100	0.102	102	0.101	101	71-133	1	35	mg/kg	11.24.2020 10:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		102		100		70-130	%	11.24.2020 10:40
4-Bromofluorobenzene	121		110		108		70-130	%	11.24.2020 10:40

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143258

Parent Sample Id: 678846-001

Matrix: Soil

MS Sample Id: 678846-001 S

Prep Method: SW5035A

Date Prep: 11.24.2020

MSD Sample Id: 678846-001 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	0.107	107	0.0881	88	70-130	19	35	mg/kg	11.24.2020 13:34	
Toluene	<0.00200	0.100	0.0960	96	0.0781	78	70-130	21	35	mg/kg	11.24.2020 13:34	
Ethylbenzene	<0.00200	0.100	0.0934	93	0.0728	73	71-129	25	35	mg/kg	11.24.2020 13:34	
m,p-Xylenes	<0.00401	0.200	0.192	96	0.144	72	70-135	29	35	mg/kg	11.24.2020 13:34	
o-Xylene	<0.00200	0.100	0.0928	93	0.0711	71	71-133	26	35	mg/kg	11.24.2020 13:34	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		101		70-130	%	11.24.2020 13:34
4-Bromofluorobenzene	105		112		70-130	%	11.24.2020 13:34

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

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

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

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



Chain of Custody

Work Order No: 1678848

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) 382-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

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Page 1 of 2

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

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

Project Name:	Muy Wayno Frac Pond	Turn Around	
Project Number:	012920104	Routine	☒
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	0.6/0.4	Thermometer ID				
Received Intact:	Yes	No	T-1114-003			
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes	No	N/A	Total Containers:	12	

Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8015)	Chloride (EPA 8015)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	11/23/20 16:18	<i>[Signature]</i>	<i>[Signature]</i>	11/23/20 16:18



Chain of Custody

Work Order No: 1078848

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

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

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Page 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littell
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:	ymather@lternv.com, dmoir@lternv.com

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

Project Name:	Muy Wayno Frac Pond	Turn Around	
Project Number:	012920104	Routine	☒
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT			
Temperature (°C):	Temp Blank:	Yes	No
Received Intact:	Yes	No	Thermometer ID
Cooler Custody Seals:	Yes	No	Correction Factor:
Sample Custody Seals:	Yes	No	Total Containers:

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP	BTEX (E	Chloride											Sample Comments
SW79					s	11/20/2020	11:19	3'	1	x	x	x											Composite
SW80					s	11/20/2020	11:21	3'	1	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												

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11/23/20 16:18			11/23/20 16:18

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.23.2020 04.18.00 PM

Work Order #: 678848

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T_NM_007

Sample Receipt Checklist

Comments

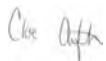
#1 *Temperature of cooler(s)?	.4	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6 *Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 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	Samples received in bulk containers.
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	No	
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Cloe Clifton

Date: 11.23.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.25.2020

Certificate of Analysis Summary 678867



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: TE012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Tue 11.24.2020 08:00
Report Date: 11.30.2020 13:48
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	678867-001	678867-002	678867-003	678867-004	678867-005	678867-006
	<i>Field Id:</i>	FS91	FS92	FS93	FS94	FS95	FS96
	<i>Depth:</i>	3- ft	3- ft	3- ft	3- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.23.2020 13:30	11.23.2020 13:35	11.23.2020 13:50	11.23.2020 13:55	11.23.2020 14:00	11.23.2020 14:05
BTEX by EPA 8021B	<i>Extracted:</i>	11.25.2020 09:00	11.25.2020 09:00	11.25.2020 09:00	11.25.2020 09:00	11.25.2020 09:00	11.25.2020 09:00
	<i>Analyzed:</i>	11.25.2020 11:51	11.25.2020 12:13	11.25.2020 12:36	11.25.2020 12:58	11.25.2020 13:21	11.25.2020 13:43
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
m,p-Xylenes		<0.00399 0.00399	<0.00402 0.00402	<0.00402 0.00402	<0.00402 0.00402	<0.00398 0.00398	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199
Total Xylenes		<0.002000 0.002000	<0.002010 0.002010	<0.002010 0.002010	<0.002010 0.002010	<0.001990 0.001990	<0.001990 0.001990
Total BTEX		<0.002000 0.002000	<0.002010 0.002010	<0.002010 0.002010	<0.002010 0.002010	<0.001990 0.001990	<0.001990 0.001990
Chloride by EPA 300	<i>Extracted:</i>	11.24.2020 15:54	11.24.2020 15:54	11.24.2020 15:54	11.24.2020 15:54	11.24.2020 15:54	11.24.2020 15:54
	<i>Analyzed:</i>	11.24.2020 19:31	11.24.2020 19:46	11.24.2020 19:51	11.24.2020 19:57	11.24.2020 20:02	11.24.2020 20:17
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		13.8 9.92	51.2 49.6	<10.0 10.0	33.6 9.98	18.5 9.92	20.5 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30
	<i>Analyzed:</i>	11.24.2020 15:46	11.24.2020 16:06	11.24.2020 16:26	11.24.2020 16:47	11.24.2020 17:08	11.24.2020 17:28
	<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	<49.9 49.9	<50.1 50.1	<49.9 49.9	<50.2 50.2	<49.8 49.8
Diesel Range Organics (DRO)		<49.8 49.8	<49.9 49.9	<50.1 50.1	<49.9 49.9	<50.2 50.2	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.9 49.9	<50.1 50.1	<49.9 49.9	<50.2 50.2	<49.8 49.8
Total GRO-DRO		<49.80 49.80	<49.90 49.90	<50.10 50.10	<49.90 49.90	<50.20 50.20	<49.80 49.80
Total TPH		<49.80 49.80	<49.90 49.90	<50.10 50.10	<49.90 49.90	<50.20 50.20	<49.80 49.80

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 678867



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: TE012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Tue 11.24.2020 08:00
Report Date: 11.30.2020 13:48
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	678867-007	678867-008	678867-009	678867-010	678867-011	678867-012
	Field Id:	FS97	SW81	SW82	SW83	SW84	FS98
	Depth:	3- ft	0-3 ft	0-3 ft	0-3 ft	0-3 ft	3- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	11.23.2020 14:30	11.23.2020 14:35	11.23.2020 14:40	11.23.2020 14:45	11.23.2020 15:20	11.23.2020 15:25
BTEX by EPA 8021B	Extracted:	11.25.2020 09:00	11.25.2020 09:00	11.25.2020 09:00	11.25.2020 09:00	11.25.2020 11:00	11.25.2020 11:00
	Analyzed:	11.25.2020 14:05	11.25.2020 14:28	11.25.2020 14:50	11.25.2020 15:12	11.25.2020 16:30	11.25.2020 16:52
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00403 0.00403	<0.00403 0.00403	<0.00403 0.00403	<0.00401 0.00401	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00202 0.00202	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.002020 0.002020	<0.002020 0.002020	<0.002020 0.002020	<0.002000 0.002000	<0.001990 0.001990	<0.002000 0.002000
Total BTEX		<0.002020 0.002020	<0.002020 0.002020	<0.002020 0.002020	<0.002000 0.002000	<0.001990 0.001990	<0.002000 0.002000
Chloride by EPA 300	Extracted:	11.24.2020 15:54	11.24.2020 15:54	11.24.2020 15:54	11.24.2020 15:54	11.24.2020 15:54	11.24.2020 15:54
	Analyzed:	11.24.2020 20:22	11.24.2020 20:28	11.24.2020 20:33	11.24.2020 20:38	11.24.2020 20:43	11.24.2020 20:58
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		19.9 9.92	62.6 9.98	63.1 9.92	12.5 9.96	37.9 9.98	13.0 10.0
TPH by SW8015 Mod	Extracted:	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30	11.24.2020 12:30
	Analyzed:	11.24.2020 17:49	11.24.2020 18:09	11.24.2020 18:30	11.24.2020 19:12	11.24.2020 19:32	11.24.2020 19:52
	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	<50.1 50.1	<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<50.1 50.1	<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.1 50.1	<50.0 50.0	<50.0 50.0	<50.0 50.0	<50.0 50.0
Total GRO-DRO		<50.00 50.00	<50.10 50.10	<50.00 50.00	<50.00 50.00	<50.00 50.00	<50.00 50.00
Total TPH		<50.00 50.00	<50.10 50.10	<50.00 50.00	<50.00 50.00	<50.00 50.00	<50.00 50.00

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 678867



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno Frac Pond

Project Id: TE012920104
Contact: Dan Moir
Project Location: Eddy County, New Mexico

Date Received in Lab: Tue 11.24.2020 08:00
Report Date: 11.30.2020 13:48
Project Manager: Jessica Kramer

Analysis Requested	Lab Id: 678867-013 Field Id: FS99 Depth: 3- ft Matrix: SOIL Sampled: 11.23.2020 15:30					
BTEX by EPA 8021B	Extracted: 11.25.2020 11:00 Analyzed: 11.25.2020 17:15 Units/RL: mg/kg RL					
Benzene	<0.00200 0.00200					
Toluene	<0.00200 0.00200					
Ethylbenzene	<0.00200 0.00200					
m,p-Xylenes	<0.00399 0.00399					
o-Xylene	<0.00200 0.00200					
Total Xylenes	<0.002000 0.002000					
Total BTEX	<0.002000 0.002000					
Chloride by EPA 300	Extracted: 11.24.2020 15:54 Analyzed: 11.24.2020 21:04 Units/RL: mg/kg RL					
Chloride	15.4 9.98					
TPH by SW8015 Mod	Extracted: 11.24.2020 12:30 Analyzed: 11.24.2020 20:13 Units/RL: mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<50.2 50.2					
Diesel Range Organics (DRO)	<50.2 50.2					
Motor Oil Range Hydrocarbons (MRO)	<50.2 50.2					
Total GRO-DRO	<50.20 50.20					
Total TPH	<50.20 50.20					

BRL - Below Reporting Limit

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



Analytical Report 678867

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno Frac Pond

TE012920104

11.30.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.30.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **678867**

Muy Wayno Frac Pond

Project Address: Eddy County, New Mexico

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) 678867. 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. 678867 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 678867****LT Environmental, Inc., Arvada, CO**

Muy Wayno Frac Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS91	S	11.23.2020 13:30	3 ft	678867-001
FS92	S	11.23.2020 13:35	3 ft	678867-002
FS93	S	11.23.2020 13:50	3 ft	678867-003
FS94	S	11.23.2020 13:55	3 ft	678867-004
FS95	S	11.23.2020 14:00	3 ft	678867-005
FS96	S	11.23.2020 14:05	3 ft	678867-006
FS97	S	11.23.2020 14:30	3 ft	678867-007
SW81	S	11.23.2020 14:35	0 - 3 ft	678867-008
SW82	S	11.23.2020 14:40	0 - 3 ft	678867-009
SW83	S	11.23.2020 14:45	0 - 3 ft	678867-010
SW84	S	11.23.2020 15:20	0 - 3 ft	678867-011
FS98	S	11.23.2020 15:25	3 ft	678867-012
FS99	S	11.23.2020 15:30	3 ft	678867-013



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno Frac Pond

Project ID: TE012920104
Work Order Number(s): 678867

Report Date: 11.30.2020
Date Received: 11.24.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS91** Matrix: Soil Date Received: 11.24.2020 08:00
 Lab Sample Id: 678867-001 Date Collected: 11.23.2020 13:30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 15:54 % Moisture:
 Seq Number: 3143278 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.8	9.92	mg/kg	11.24.2020 19:31		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143273 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.24.2020 15:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.24.2020 15:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.24.2020 15:46	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.24.2020 15:46	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.24.2020 15:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	11.24.2020 15:46	
o-Terphenyl	84-15-1	108	%	70-135	11.24.2020 15:46	



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS91**
Lab Sample Id: 678867-001

Matrix: Soil
Date Collected: 11.23.2020 13:30

Date Received: 11.24.2020 08:00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 11:51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 11:51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 11:51	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.25.2020 11:51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 11:51	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 11:51	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 11:51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	11.25.2020 11:51		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.25.2020 11:51		



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS92** Matrix: Soil Date Received: 11.24.2020 08:00
 Lab Sample Id: 678867-002 Date Collected: 11.23.2020 13:35 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 15:54 % Moisture:
 Seq Number: 3143278 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.2	49.6	mg/kg	11.24.2020 19:46		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143273 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.24.2020 16:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.24.2020 16:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.24.2020 16:06	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.24.2020 16:06	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.24.2020 16:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.24.2020 16:06	
o-Terphenyl	84-15-1	111	%	70-135	11.24.2020 16:06	



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS92**
 Lab Sample Id: 678867-002

Matrix: Soil
 Date Collected: 11.23.2020 13:35

Date Received: 11.24.2020 08:00
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:00

% Moisture:
 Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.25.2020 12:13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.25.2020 12:13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.25.2020 12:13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.25.2020 12:13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.25.2020 12:13	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	11.25.2020 12:13	U	1
Total BTEX		<0.002010	0.002010	mg/kg	11.25.2020 12:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	11.25.2020 12:13	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.25.2020 12:13	



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS93** Matrix: Soil Date Received: 11.24.2020 08:00
 Lab Sample Id: 678867-003 Date Collected: 11.23.2020 13:50 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 15:54 % Moisture:
 Seq Number: 3143278 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	11.24.2020 19:51	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143273 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.24.2020 16:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.24.2020 16:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.24.2020 16:26	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.24.2020 16:26	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.24.2020 16:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.24.2020 16:26	
o-Terphenyl	84-15-1	109	%	70-135	11.24.2020 16:26	



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS93**
Lab Sample Id: 678867-003

Matrix: Soil
Date Collected: 11.23.2020 13:50

Date Received: 11.24.2020 08:00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.25.2020 12:36	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.25.2020 12:36	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.25.2020 12:36	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.25.2020 12:36	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.25.2020 12:36	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	11.25.2020 12:36	U	1
Total BTEX		<0.002010	0.002010	mg/kg	11.25.2020 12:36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.25.2020 12:36		
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.25.2020 12:36		



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS94** Matrix: Soil Date Received: 11.24.2020 08:00
 Lab Sample Id: 678867-004 Date Collected: 11.23.2020 13:55 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 15:54 % Moisture:
 Seq Number: 3143278 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.6	9.98	mg/kg	11.24.2020 19:57		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143273 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.24.2020 16:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.24.2020 16:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.24.2020 16:47	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.24.2020 16:47	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.24.2020 16:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.24.2020 16:47	
o-Terphenyl	84-15-1	114	%	70-135	11.24.2020 16:47	



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS94**
 Lab Sample Id: 678867-004

Matrix: Soil
 Date Collected: 11.23.2020 13:55

Date Received: 11.24.2020 08:00
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:00

% Moisture:
 Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.25.2020 12:58	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.25.2020 12:58	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.25.2020 12:58	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.25.2020 12:58	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.25.2020 12:58	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	11.25.2020 12:58	U	1
Total BTEX		<0.002010	0.002010	mg/kg	11.25.2020 12:58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.25.2020 12:58		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.25.2020 12:58		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS95** Matrix: Soil Date Received: 11.24.2020 08:00
 Lab Sample Id: 678867-005 Date Collected: 11.23.2020 14:00 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 15:54 % Moisture:
 Seq Number: 3143278 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.5	9.92	mg/kg	11.24.2020 20:02		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143273 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.24.2020 17:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.24.2020 17:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.24.2020 17:08	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.24.2020 17:08	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.24.2020 17:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.24.2020 17:08	
o-Terphenyl	84-15-1	100	%	70-135	11.24.2020 17:08	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS95**
Lab Sample Id: 678867-005

Matrix: Soil
Date Collected: 11.23.2020 14:00

Date Received: 11.24.2020 08:00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.25.2020 13:21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.25.2020 13:21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.25.2020 13:21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.25.2020 13:21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.25.2020 13:21	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.25.2020 13:21	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.25.2020 13:21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.25.2020 13:21		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.25.2020 13:21		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS96** Matrix: Soil Date Received: 11.24.2020 08:00
 Lab Sample Id: 678867-006 Date Collected: 11.23.2020 14:05 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 15:54 % Moisture:
 Seq Number: 3143278 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.5	9.98	mg/kg	11.24.2020 20:17		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143273 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.24.2020 17:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.24.2020 17:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.24.2020 17:28	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.24.2020 17:28	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.24.2020 17:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.24.2020 17:28	
o-Terphenyl	84-15-1	106	%	70-135	11.24.2020 17:28	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS96**
Lab Sample Id: 678867-006

Matrix: Soil
Date Collected: 11.23.2020 14:05

Date Received: 11.24.2020 08:00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.25.2020 13:43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.25.2020 13:43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.25.2020 13:43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.25.2020 13:43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.25.2020 13:43	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.25.2020 13:43	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.25.2020 13:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.25.2020 13:43		
4-Bromofluorobenzene	460-00-4	93	%	70-130	11.25.2020 13:43		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS97** Matrix: Soil Date Received: 11.24.2020 08:00
 Lab Sample Id: 678867-007 Date Collected: 11.23.2020 14:30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 15:54 % Moisture:
 Seq Number: 3143278 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.9	9.92	mg/kg	11.24.2020 20:22		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143273 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.24.2020 17:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.24.2020 17:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.24.2020 17:49	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.24.2020 17:49	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.24.2020 17:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.24.2020 17:49	
o-Terphenyl	84-15-1	111	%	70-135	11.24.2020 17:49	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS97**
 Lab Sample Id: 678867-007

Matrix: Soil
 Date Collected: 11.23.2020 14:30

Date Received: 11.24.2020 08:00
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:00

% Moisture:
 Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.25.2020 14:05	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.25.2020 14:05	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.25.2020 14:05	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.25.2020 14:05	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.25.2020 14:05	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.25.2020 14:05	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.25.2020 14:05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.25.2020 14:05		
4-Bromofluorobenzene	460-00-4	89	%	70-130	11.25.2020 14:05		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW81** Matrix: Soil Date Received: 11.24.2020 08:00
 Lab Sample Id: 678867-008 Date Collected: 11.23.2020 14:35 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 15:54 % Moisture:
 Seq Number: 3143278 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	62.6	9.98	mg/kg	11.24.2020 20:28		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143273 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.24.2020 18:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.24.2020 18:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.24.2020 18:09	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.24.2020 18:09	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.24.2020 18:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	11.24.2020 18:09	
o-Terphenyl	84-15-1	112	%	70-135	11.24.2020 18:09	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW81**
 Lab Sample Id: 678867-008

Matrix: Soil
 Date Collected: 11.23.2020 14:35

Date Received: 11.24.2020 08:00
 Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:00

% Moisture:
 Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.25.2020 14:28	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.25.2020 14:28	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.25.2020 14:28	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.25.2020 14:28	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.25.2020 14:28	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.25.2020 14:28	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.25.2020 14:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.25.2020 14:28	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.25.2020 14:28	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW82**
Lab Sample Id: 678867-009

Matrix: Soil
Date Collected: 11.23.2020 14:40

Date Received: 11.24.2020 08:00
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 15:54

% Moisture:
Basis: Wet Weight

Seq Number: 3143278

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	63.1	9.92	mg/kg	11.24.2020 20:33		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.24.2020 12:30

% Moisture:
Basis: Wet Weight

Seq Number: 3143273

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.24.2020 18:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.24.2020 18:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.24.2020 18:30	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.24.2020 18:30	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.24.2020 18:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.24.2020 18:30	
o-Terphenyl	84-15-1	108	%	70-135	11.24.2020 18:30	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW82**
Lab Sample Id: 678867-009

Matrix: Soil
Date Collected: 11.23.2020 14:40

Date Received: 11.24.2020 08:00
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.25.2020 14:50	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.25.2020 14:50	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.25.2020 14:50	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.25.2020 14:50	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.25.2020 14:50	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.25.2020 14:50	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.25.2020 14:50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.25.2020 14:50		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.25.2020 14:50		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW83** Matrix: Soil Date Received: 11.24.2020 08:00
 Lab Sample Id: 678867-010 Date Collected: 11.23.2020 14:45 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 15:54 % Moisture:
 Seq Number: 3143278 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.5	9.96	mg/kg	11.24.2020 20:38		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143273 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.24.2020 19:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.24.2020 19:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.24.2020 19:12	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.24.2020 19:12	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.24.2020 19:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.24.2020 19:12	
o-Terphenyl	84-15-1	103	%	70-135	11.24.2020 19:12	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW83**
Lab Sample Id: 678867-010

Matrix: Soil
Date Collected: 11.23.2020 14:45

Date Received: 11.24.2020 08:00
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 15:12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 15:12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 15:12	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.25.2020 15:12	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 15:12	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 15:12	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 15:12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.25.2020 15:12		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.25.2020 15:12		



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW84**
Lab Sample Id: 678867-011

Matrix: Soil
Date Collected: 11.23.2020 15:20

Date Received: 11.24.2020 08:00
Sample Depth: 0 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.24.2020 15:54

% Moisture:
Basis: Wet Weight

Seq Number: 3143278

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37.9	9.98	mg/kg	11.24.2020 20:43		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.24.2020 12:30

% Moisture:
Basis: Wet Weight

Seq Number: 3143273

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.24.2020 19:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.24.2020 19:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.24.2020 19:32	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.24.2020 19:32	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.24.2020 19:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	11.24.2020 19:32	
o-Terphenyl	84-15-1	102	%	70-135	11.24.2020 19:32	



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LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **SW84**
Lab Sample Id: 678867-011

Matrix: Soil
Date Collected: 11.23.2020 15:20

Date Received: 11.24.2020 08:00
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.25.2020 16:30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.25.2020 16:30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.25.2020 16:30	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.25.2020 16:30	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.25.2020 16:30	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.25.2020 16:30	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.25.2020 16:30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	70-130	11.25.2020 16:30		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.25.2020 16:30		



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS98** Matrix: Soil Date Received: 11.24.2020 08:00
 Lab Sample Id: 678867-012 Date Collected: 11.23.2020 15:25 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 15:54 % Moisture:
 Seq Number: 3143278 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.0	10.0	mg/kg	11.24.2020 20:58		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143273 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.24.2020 19:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.24.2020 19:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.24.2020 19:52	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.24.2020 19:52	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.24.2020 19:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.24.2020 19:52	
o-Terphenyl	84-15-1	107	%	70-135	11.24.2020 19:52	



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS98**
Lab Sample Id: 678867-012

Matrix: Soil
Date Collected: 11.23.2020 15:25

Date Received: 11.24.2020 08:00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 16:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 16:52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 16:52	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.25.2020 16:52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 16:52	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 16:52	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 16:52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.25.2020 16:52		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.25.2020 16:52		



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS99** Matrix: Soil Date Received: 11.24.2020 08:00
 Lab Sample Id: 678867-013 Date Collected: 11.23.2020 15:30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.24.2020 15:54 % Moisture:
 Seq Number: 3143278 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.4	9.98	mg/kg	11.24.2020 21:04		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.24.2020 12:30 % Moisture:
 Seq Number: 3143273 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.24.2020 20:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.24.2020 20:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.24.2020 20:13	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.24.2020 20:13	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.24.2020 20:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	11.24.2020 20:13	
o-Terphenyl	84-15-1	113	%	70-135	11.24.2020 20:13	



Certificate of Analytical Results 678867

LT Environmental, Inc., Arvada, CO

Muy Wayno Frac Pond

Sample Id: **FS99**
 Lab Sample Id: 678867-013

Matrix: Soil
 Date Collected: 11.23.2020 15:30

Date Received: 11.24.2020 08:00
 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:00

% Moisture:
 Basis: Wet Weight

Seq Number: 3143417

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 17:15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 17:15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 17:15	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.25.2020 17:15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 17:15	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 17:15	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 17:15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.25.2020 17:15		
4-Bromofluorobenzene	460-00-4	95	%	70-130	11.25.2020 17:15		

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. **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.
Muy Wayno Frac Pond

Analytical Method: Chloride by EPA 300

Seq Number: 3143278

MB Sample Id: 7715946-1-BLK

Matrix: Solid

LCS Sample Id: 7715946-1-BKS

Prep Method: E300P

Date Prep: 11.24.2020

LCSD Sample Id: 7715946-1-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	243	97	241	96	90-110	1	20	mg/kg	11.24.2020 19:20	

Analytical Method: Chloride by EPA 300

Seq Number: 3143278

Parent Sample Id: 678867-001

Matrix: Soil

MS Sample Id: 678867-001 S

Prep Method: E300P

Date Prep: 11.24.2020

MSD Sample Id: 678867-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	13.8	200	198	92	197	92	90-110	1	20	mg/kg	11.24.2020 19:36	

Analytical Method: Chloride by EPA 300

Seq Number: 3143278

Parent Sample Id: 678867-011

Matrix: Soil

MS Sample Id: 678867-011 S

Prep Method: E300P

Date Prep: 11.24.2020

MSD Sample Id: 678867-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	37.9	200	231	97	243	102	90-110	5	20	mg/kg	11.24.2020 20:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143273

MB Sample Id: 7715953-1-BLK

Matrix: Solid

LCS Sample Id: 7715953-1-BKS

Prep Method: SW8015P

Date Prep: 11.24.2020

LCSD Sample Id: 7715953-1-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	1010	101	70-135	2	35	mg/kg	11.24.2020 14:06	
Diesel Range Organics (DRO)	<50.0	1000	1040	104	1140	114	70-135	9	35	mg/kg	11.24.2020 14:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		107		114		70-135	%	11.24.2020 14:06
o-Terphenyl	111		105		100		70-135	%	11.24.2020 14:06

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143273

Matrix: Solid

MB Sample Id: 7715953-1-BLK

Prep Method: SW8015P

Date Prep: 11.24.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.24.2020 13:46	

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

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

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

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



LT Environmental, Inc.
Muy Wayno Frac Pond

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143273

Parent Sample Id: 678851-001

Matrix: Soil

MS Sample Id: 678851-001 S

Prep Method: SW8015P

Date Prep: 11.24.2020

MSD Sample Id: 678851-001 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)	<49.8	995	1150	116	1010	101	70-135	13	35	mg/kg	11.24.2020 15:06	
Diesel Range Organics (DRO)	<49.8	995	1090	110	1130	113	70-135	4	35	mg/kg	11.24.2020 15:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	111		115		70-135	%	11.24.2020 15:06
o-Terphenyl	107		104		70-135	%	11.24.2020 15:06

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143417

MB Sample Id: 7715943-1-BLK

Matrix: Solid

LCS Sample Id: 7715943-1-BKS

Prep Method: SW5035A

Date Prep: 11.25.2020

LCSD Sample Id: 7715943-1-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	0.117	117	0.108	108	70-130	8	35	mg/kg	11.25.2020 09:49	
Toluene	<0.00200	0.100	0.112	112	0.103	103	70-130	8	35	mg/kg	11.25.2020 09:49	
Ethylbenzene	<0.00200	0.100	0.104	104	0.0965	97	71-129	7	35	mg/kg	11.25.2020 09:49	
m,p-Xylenes	<0.00400	0.200	0.212	106	0.197	99	70-135	7	35	mg/kg	11.25.2020 09:49	
o-Xylene	<0.00200	0.100	0.104	104	0.0963	96	71-133	8	35	mg/kg	11.25.2020 09:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		99		98		70-130	%	11.25.2020 09:49
4-Bromofluorobenzene	86		88		85		70-130	%	11.25.2020 09:49

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143417

Parent Sample Id: 678867-001

Matrix: Soil

MS Sample Id: 678867-001 S

Prep Method: SW5035A

Date Prep: 11.25.2020

MSD Sample Id: 678867-001 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	0.120	120	0.0996	100	70-130	19	35	mg/kg	11.25.2020 10:33	
Toluene	<0.00200	0.100	0.115	115	0.0963	96	70-130	18	35	mg/kg	11.25.2020 10:33	
Ethylbenzene	<0.00200	0.100	0.105	105	0.0868	87	71-129	19	35	mg/kg	11.25.2020 10:33	
m,p-Xylenes	<0.00401	0.200	0.215	108	0.176	88	70-135	20	35	mg/kg	11.25.2020 10:33	
o-Xylene	<0.00200	0.100	0.105	105	0.0890	89	71-133	16	35	mg/kg	11.25.2020 10:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		97		70-130	%	11.25.2020 10:33
4-Bromofluorobenzene	90		92		70-130	%	11.25.2020 10:33

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: 1678867

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:	522 West Mermond
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	enaka@ltenv.com, dmoir@ltenv.com

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

Project Name:	My Wayne Fire Pond	Turn Around
Project Number:	TE 012920104	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):	1.6/1.4	Thermometer ID				
Received Inlet:	Yes	No	Correction Factor: -0.2			
Cooler Custody Seals:	Yes	No	N/A	Total Containers:		
Sample Custody Seals:	Yes	No	N/A	13		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST												Work Order Notes
FS91	S	11/23/20	13:30	3'	TPH (EPA 8015)	☒	BTEX (EPA 0=8021)	☒	Chloride (EPA 300.0)	☒							TAT starts the day received by the lab, if received by 4:30pm
FS92																	Sample Comments
FS93																	
FS94																	
FS95																	
FS96																	
FS97																	
SW81																	
SW82																	
SW83																	

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	TC1P / 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>Elizabeth Naka</i>	<i>[Signature]</i>	11/24/20 08:00			

Work Order No: 678867

Page 1 of 1
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Work Order Comments	
Program: UST/PST	☐ RP ☐ Crownfields ☐ RC ☐ \$perfund ☐
State of Project:	
Reporting Level II	☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐
Deliverables: EDD	☐ ADAPT ☐ Other:

[illegible][illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride	lab, if received by 4:30pm
SIN84	S	11/23/20	1520	0'-3'	1	X	X	X	composite ↓
FS98	↓	↓	1525	3'	↓	↓	↓		
FS99	↓	↓	1530	3'	↓	↓	↓		
Pittsboro									

Total 200.1 / 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																											

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Relinquished by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Time]</i>		<i>[Signature]</i>	<i>[Time]</i>

[illegible]

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.24.2020 08.00.00 AM

Work Order #: 678867

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 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:



Cloe Clifton

Date: 11.24.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.25.2020

Certificate of Analysis Summary 679038



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id: TE012920104

Date Received in Lab: Wed 11.25.2020 08:53

Contact: Dan Moir

Report Date: 11.30.2020 13:49

Project Location:

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	679038-001	679038-002	679038-003	679038-004	679038-005	679038-006
	<i>Field Id:</i>	FS100	FS101	FS102	FS103	FS104	FS105
	<i>Depth:</i>	3- ft	3- ft	3- ft	3- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.24.2020 10:00	11.24.2020 10:10	11.24.2020 10:20	11.24.2020 10:30	11.24.2020 10:40	11.24.2020 10:50
BTEX by EPA 8021B	<i>Extracted:</i>	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17
	<i>Analyzed:</i>	11.25.2020 13:40	11.25.2020 14:02	11.25.2020 14:25	11.25.2020 14:47	11.25.2020 15:10	11.25.2020 15:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00402 0.00402	<0.00396 0.00396	<0.00401 0.00401	<0.00398 0.00398	<0.00400 0.00400	<0.00398 0.00398
o-Xylene		<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.002010 0.002010	<0.001980 0.001980	<0.002000 0.002000	<0.001990 0.001990	<0.002000 0.002000	<0.001990 0.001990
Total BTEX		<0.002010 0.002010	<0.001980 0.001980	<0.002000 0.002000	<0.001990 0.001990	<0.002000 0.002000	<0.001990 0.001990
Chloride by EPA 300	<i>Extracted:</i>	11.25.2020 09:36	11.25.2020 09:36	11.25.2020 09:36	11.25.2020 09:36	11.25.2020 09:36	11.25.2020 09:36
	<i>Analyzed:</i>	11.25.2020 12:39	11.25.2020 12:55	11.25.2020 13:00	11.25.2020 13:05	11.25.2020 13:11	11.25.2020 13:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		252 9.98	297 10.0	270 9.92	240 9.96	299 9.92	312 9.94
TPH by SW8015 Mod	<i>Extracted:</i>	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06
	<i>Analyzed:</i>	11.25.2020 14:52	11.25.2020 15:52	11.25.2020 16:12	11.25.2020 16:33	11.25.2020 16:53	11.25.2020 17:13
	<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)		<50.3 50.3	<49.9 49.9	<50.0 50.0	<49.8 49.8	<50.3 50.3	<49.8 49.8
Diesel Range Organics (DRO)		<50.3 50.3	<49.9 49.9	<50.0 50.0	<49.8 49.8	<50.3 50.3	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<49.9 49.9	<50.0 50.0	<49.8 49.8	<50.3 50.3	<49.8 49.8
Total GRO-DRO		<50.30 50.30	<49.90 49.90	<50.00 50.00	<49.80 49.80	<50.30 50.30	<49.80 49.80
Total TPH		<50.30 50.30	<49.90 49.90	<50.00 50.00	<49.80 49.80	<50.30 50.30	<49.80 49.80

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Certificate of Analysis Summary 679038



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id: TE012920104

Date Received in Lab: Wed 11.25.2020 08:53

Contact: Dan Moir

Report Date: 11.30.2020 13:49

Project Location:

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	679038-007	679038-008	679038-009	679038-010	679038-011	679038-012
	<i>Field Id:</i>	FS106	FS107	FS108	FS109	FS110	FS111
	<i>Depth:</i>	3- ft	3- ft	3- ft	3- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.24.2020 11:00	11.24.2020 11:10	11.24.2020 11:20	11.24.2020 11:30	11.24.2020 11:40	11.24.2020 11:50
BTEX by EPA 8021B	<i>Extracted:</i>	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17
	<i>Analyzed:</i>	11.25.2020 15:54	11.25.2020 16:17	11.25.2020 16:39	11.25.2020 17:02	11.25.2020 18:21	11.25.2020 18:44
	<i>Units/RL:</i>	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	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00402 0.00402	<0.00403 0.00403	<0.00402 0.00402	<0.00397 0.00397	<0.00399 0.00399	<0.00399 0.00399
o-Xylene		<0.00201 0.00201	<0.00202 0.00202	<0.00201 0.00201	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.002010 0.002010	<0.002020 0.002020	<0.002010 0.002010	<0.001980 0.001980	<0.002000 0.002000	<0.002000 0.002000
Total BTEX		<0.002010 0.002010	<0.002020 0.002020	<0.002010 0.002010	<0.001980 0.001980	<0.002000 0.002000	<0.002000 0.002000
Chloride by EPA 300	<i>Extracted:</i>	11.25.2020 09:36	11.25.2020 09:36	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58
	<i>Analyzed:</i>	11.25.2020 13:21	11.25.2020 13:26	11.25.2020 14:39	11.25.2020 14:54	11.25.2020 14:59	11.25.2020 15:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		29.9 9.96	31.9 9.98	26.9 9.92	30.2 10.0	33.3 10.0	30.2 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06
	<i>Analyzed:</i>	11.25.2020 17:33	11.25.2020 17:53	11.25.2020 18:13	11.25.2020 18:34	11.25.2020 19:14	11.25.2020 19:34
	<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	<50.1 50.1	<49.9 49.9	<50.1 50.1	<49.8 49.8	<50.2 50.2
Diesel Range Organics (DRO)		<49.8 49.8	<50.1 50.1	<49.9 49.9	<50.1 50.1	<49.8 49.8	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.1 50.1	<49.9 49.9	<50.1 50.1	<49.8 49.8	<50.2 50.2
Total GRO-DRO		<49.80 49.80	<50.10 50.10	<49.90 49.90	<50.10 50.10	<49.80 49.80	<50.20 50.20
Total TPH		<49.80 49.80	<50.10 50.10	<49.90 49.90	<50.10 50.10	<49.80 49.80	<50.20 50.20

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Certificate of Analysis Summary 679038



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id: TE012920104

Date Received in Lab: Wed 11.25.2020 08:53

Contact: Dan Moir

Report Date: 11.30.2020 13:49

Project Location:

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	679038-013	679038-014	679038-015	679038-016	679038-017	679038-018
	<i>Field Id:</i>	FS112	FS113	FS114	FS115	FS116	FS117
	<i>Depth:</i>	3- ft	3- ft	3- ft	3- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.24.2020 12:00	11.24.2020 12:10	11.24.2020 12:20	11.24.2020 12:30	11.24.2020 12:40	11.24.2020 12:50
BTEX by EPA 8021B	<i>Extracted:</i>	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 11:17
	<i>Analyzed:</i>	11.25.2020 19:06	11.25.2020 19:29	11.25.2020 19:51	11.25.2020 20:13	11.25.2020 20:36	11.25.2020 20:58
	<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	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Toluene		<0.00198 0.00198	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Ethylbenzene		<0.00198 0.00198	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
m,p-Xylenes		<0.00396 0.00396	<0.00398 0.00398	<0.00403 0.00403	<0.00402 0.00402	<0.00398 0.00398	<0.00403 0.00403
o-Xylene		<0.00198 0.00198	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00199 0.00199	<0.00202 0.00202
Total Xylenes		<0.001980 0.001980	<0.001990 0.001990	<0.002020 0.002020	<0.002010 0.002010	<0.001990 0.001990	<0.002020 0.002020
Total BTEX		<0.001980 0.001980	<0.001990 0.001990	<0.002020 0.002020	<0.002010 0.002010	<0.001990 0.001990	<0.002020 0.002020
Chloride by EPA 300	<i>Extracted:</i>	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58
	<i>Analyzed:</i>	11.25.2020 15:10	11.25.2020 15:25	11.25.2020 15:30	11.25.2020 15:35	11.25.2020 15:41	11.25.2020 15:46
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		13.2 9.94	13.2 10.0	33.2 10.1	13.1 9.92	15.5 10.1	12.9 9.92
TPH by SW8015 Mod	<i>Extracted:</i>	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:06
	<i>Analyzed:</i>	11.25.2020 19:54	11.25.2020 20:14	11.25.2020 20:34	11.25.2020 20:55	11.25.2020 21:15	11.25.2020 21:35
	<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	<50.1 50.1	<50.2 50.2	<50.1 50.1	<49.8 49.8
Diesel Range Organics (DRO)		<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.1 50.1	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.2 50.2	<50.1 50.1	<49.8 49.8
Total GRO-DRO		<49.90 49.90	<49.80 49.80	<50.10 50.10	<50.20 50.20	<50.10 50.10	<49.80 49.80
Total TPH		<49.90 49.90	<49.80 49.80	<50.10 50.10	<50.20 50.20	<50.10 50.10	<49.80 49.80

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Certificate of Analysis Summary 679038



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id: TE012920104

Date Received in Lab: Wed 11.25.2020 08:53

Contact: Dan Moir

Report Date: 11.30.2020 13:49

Project Location:

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	679038-019	679038-020	679038-021	679038-022	679038-023	679038-024
	<i>Field Id:</i>	FS118	FS119	FS120	FS121	FS122	FS123
	<i>Depth:</i>	3- ft	3- ft	3- ft	3- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.24.2020 13:00	11.24.2020 13:10	11.24.2020 13:20	11.24.2020 13:30	11.24.2020 13:40	11.24.2020 13:50
BTEX by EPA 8021B	<i>Extracted:</i>	11.25.2020 11:17	11.25.2020 11:17	11.25.2020 14:19	11.25.2020 14:19	11.25.2020 14:19	11.25.2020 14:19
	<i>Analyzed:</i>	11.25.2020 21:21	11.25.2020 21:43	11.25.2020 22:05	11.25.2020 22:27	11.25.2020 22:49	11.25.2020 23:12
	<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	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Toluene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398	<0.00396 0.00396	<0.00400 0.00400	<0.00401 0.00401	<0.00396 0.00396
o-Xylene		<0.00199 0.00199	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Total Xylenes		<0.001990 0.001990	<0.001990 0.001990	<0.001980 0.001980	<0.002000 0.002000	<0.002000 0.002000	<0.001980 0.001980
Total BTEX		<0.001990 0.001990	<0.001990 0.001990	<0.001980 0.001980	<0.002000 0.002000	<0.002000 0.002000	<0.001980 0.001980
Chloride by EPA 300	<i>Extracted:</i>	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58
	<i>Analyzed:</i>	11.25.2020 15:51	11.25.2020 16:06	11.25.2020 16:12	11.25.2020 16:27	11.25.2020 16:32	11.25.2020 16:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		21.2 10.1	33.0 10.0	32.0 9.94	48.9 10.1	30.2 10.0	32.5 9.94
TPH by SW8015 Mod	<i>Extracted:</i>	11.25.2020 12:06	11.25.2020 12:06	11.25.2020 12:00	11.25.2020 12:00	11.25.2020 12:00	11.25.2020 12:00
	<i>Analyzed:</i>	11.25.2020 21:55	11.25.2020 22:15	11.25.2020 14:52	11.25.2020 15:52	11.25.2020 16:12	11.25.2020 16:33
	<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	<50.0 50.0	<50.5 50.5	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<49.8 49.8	<49.8 49.8	<50.0 50.0	<50.5 50.5	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<49.8 49.8	<50.0 50.0	<50.5 50.5	<50.0 50.0	<49.9 49.9
Total GRO-DRO		<49.80 49.80	<49.80 49.80	<50.00 50.00	<50.50 50.50	<50.00 50.00	<49.90 49.90
Total TPH		<49.80 49.80	<49.80 49.80	<50.00 50.00	<50.50 50.50	<50.00 50.00	<49.90 49.90

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Certificate of Analysis Summary 679038



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id: TE012920104

Date Received in Lab: Wed 11.25.2020 08:53

Contact: Dan Moir

Report Date: 11.30.2020 13:49

Project Location:

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	679038-025	679038-026	679038-027	679038-028	679038-029	679038-030
	<i>Field Id:</i>	FS124	FS125	FS126	FS127	FS128	FS129
	<i>Depth:</i>	3- ft	3- ft	3- ft	3- ft	3- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.24.2020 14:00	11.24.2020 14:10	11.24.2020 14:20	11.24.2020 14:30	11.24.2020 14:40	11.24.2020 14:50
BTEX by EPA 8021B	<i>Extracted:</i>	11.25.2020 14:19	11.25.2020 14:19	11.25.2020 14:19	11.25.2020 14:19	11.25.2020 14:19	11.25.2020 14:19
	<i>Analyzed:</i>	11.25.2020 23:34	11.25.2020 23:57	11.26.2020 00:19	11.26.2020 00:41	11.26.2020 01:04	11.26.2020 01:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	0.102 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	0.104 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	0.0950 0.00200
m,p-Xylenes		<0.00401 0.00401	<0.00400 0.00400	<0.00402 0.00402	<0.00401 0.00401	<0.00398 0.00398	0.195 0.00399
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	0.0970 0.00200
Total Xylenes		<0.002000 0.002000	<0.002000 0.002000	<0.002010 0.002010	<0.002000 0.002000	<0.001990 0.001990	0.2920 0.002000
Total BTEX		<0.002000 0.002000	<0.002000 0.002000	<0.002010 0.002010	<0.002000 0.002000	<0.001990 0.001990	0.5930 0.002000
Chloride by EPA 300	<i>Extracted:</i>	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 12:58	11.25.2020 14:00	11.25.2020 14:00
	<i>Analyzed:</i>	11.25.2020 16:43	11.25.2020 16:48	11.25.2020 16:53	11.25.2020 16:58	11.25.2020 17:29	11.25.2020 17:45
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		21.1 9.90	24.4 9.98	21.6 9.96	19.7 9.98	20.8 9.90	27.4 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	11.25.2020 12:00	11.25.2020 12:00	11.25.2020 12:00	11.25.2020 12:00	11.25.2020 12:00	11.25.2020 12:00
	<i>Analyzed:</i>	11.25.2020 16:53	11.25.2020 17:13	11.25.2020 17:33	11.25.2020 17:53	11.25.2020 18:13	11.25.2020 18:34
	<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	<50.0 50.0	<50.2 50.2	<50.3 50.3	<49.9 49.9	<49.8 49.8
Diesel Range Organics (DRO)		<49.9 49.9	<50.0 50.0	<50.2 50.2	<50.3 50.3	<49.9 49.9	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.0 50.0	<50.2 50.2	<50.3 50.3	<49.9 49.9	<49.8 49.8
Total GRO-DRO		<49.90 49.90	<50.00 50.00	<50.20 50.20	<50.30 50.30	<49.90 49.90	<49.80 49.80
Total TPH		<49.90 49.90	<50.00 50.00	<50.20 50.20	<50.30 50.30	<49.90 49.90	<49.80 49.80

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Certificate of Analysis Summary 679038



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id: TE012920104

Date Received in Lab: Wed 11.25.2020 08:53

Contact: Dan Moir

Report Date: 11.30.2020 13:49

Project Location:

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	679038-031	679038-032	679038-033	679038-034	679038-035	679038-036
	<i>Field Id:</i>	SW85	SW86	SW87	SW88	SW89	SW90
	<i>Depth:</i>	0-3 ft	0-3 ft	0-3 ft	0-3 ft	0-3 ft	0-3 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.24.2020 15:00	11.24.2020 15:10	11.24.2020 15:20	11.24.2020 15:30	11.24.2020 15:40	11.24.2020 15:50
BTEX by EPA 8021B	<i>Extracted:</i>	11.25.2020 14:19	11.25.2020 14:19	11.25.2020 14:19	11.25.2020 14:19	11.25.2020 14:19	11.25.2020 14:19
	<i>Analyzed:</i>	11.26.2020 02:44	11.26.2020 03:06	11.26.2020 03:29	11.26.2020 03:51	11.26.2020 04:13	11.26.2020 04:36
	<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	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00399 0.00399	<0.00398 0.00398	<0.00398 0.00398	<0.00401 0.00401	<0.00398 0.00398
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.001990 0.001990	<0.002000 0.002000	<0.001990 0.001990	<0.001990 0.001990	<0.002000 0.002000	<0.001990 0.001990
Total BTEX		<0.001990 0.001990	<0.002000 0.002000	<0.001990 0.001990	<0.001990 0.001990	<0.002000 0.002000	<0.001990 0.001990
Chloride by EPA 300	<i>Extracted:</i>	11.25.2020 14:00	11.25.2020 14:00	11.25.2020 14:00	11.25.2020 14:00	11.25.2020 14:00	11.25.2020 14:00
	<i>Analyzed:</i>	11.25.2020 17:50	11.25.2020 17:55	11.25.2020 18:00	11.25.2020 18:16	11.25.2020 18:21	11.25.2020 18:26
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		32.6 9.98	75.8 10.1	86.6 10.1	79.1 10.1	66.7 10.0	76.7 9.92
TPH by SW8015 Mod	<i>Extracted:</i>	11.25.2020 12:00	11.25.2020 12:00	11.25.2020 12:00	11.25.2020 12:00	11.25.2020 12:00	11.25.2020 12:00
	<i>Analyzed:</i>	11.25.2020 19:14	11.25.2020 19:34	11.25.2020 19:54	11.25.2020 20:14	11.25.2020 20:34	11.25.2020 20:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.3 50.3	<50.2 50.2	<49.9 49.9
Diesel Range Organics (DRO)		<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.3 50.3	<50.2 50.2	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.3 50.3	<50.2 50.2	<49.9 49.9
Total GRO-DRO		<50.20 50.20	<50.00 50.00	<50.30 50.30	<50.30 50.30	<50.20 50.20	<49.90 49.90
Total TPH		<50.20 50.20	<50.00 50.00	<50.30 50.30	<50.30 50.30	<50.20 50.20	<49.90 49.90

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 679038



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id: TE012920104

Date Received in Lab: Wed 11.25.2020 08:53

Contact: Dan Moir

Report Date: 11.30.2020 13:49

Project Location:

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	679038-037	679038-038				
	Field Id:	SW91	SW92				
	Depth:	0-3 ft	0-3 ft				
	Matrix:	SOIL	SOIL				
	Sampled:	11.24.2020 16:00	11.24.2020 16:10				
BTEX by EPA 8021B	Extracted:	11.25.2020 14:19	11.25.2020 14:19				
	Analyzed:	11.26.2020 04:58	11.26.2020 05:21				
	Units/RL:	mg/kg RL	mg/kg RL				
		<0.00200 0.00200	<0.00199 0.00199				
Benzene		<0.00200 0.00200	<0.00199 0.00199				
Toluene		<0.00200 0.00200	<0.00199 0.00199				
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199				
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398				
o-Xylene		<0.00200 0.00200	<0.00199 0.00199				
Total Xylenes		<0.002000 0.002000	<0.001990 0.001990				
Total BTEX		<0.002000 0.002000	<0.001990 0.001990				
Chloride by EPA 300	Extracted:	11.25.2020 14:00	11.25.2020 14:00				
	Analyzed:	11.25.2020 18:31	11.25.2020 18:37				
	Units/RL:	mg/kg RL	mg/kg RL				
		74.6 9.98	81.3 9.94				
Chloride							
TPH by SW8015 Mod	Extracted:	11.25.2020 12:00	11.25.2020 12:00				
	Analyzed:	11.25.2020 21:15	11.25.2020 21:35				
	Units/RL:	mg/kg RL	mg/kg RL				
		<50.1 50.1	<50.0 50.0				
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<50.0 50.0				
Diesel Range Organics (DRO)		<50.1 50.1	<50.0 50.0				
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<50.0 50.0				
Total GRO-DRO		<50.10 50.10	<50.00 50.00				
Total TPH		<50.10 50.10	<50.00 50.00				

BRL - Below Reporting Limit

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



Analytical Report 679038

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno

TE012920104

11.30.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



11.30.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **679038**

Muy Wayno

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) 679038. 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. 679038 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 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS100	S	11.24.2020 10:00	3 ft	679038-001
FS101	S	11.24.2020 10:10	3 ft	679038-002
FS102	S	11.24.2020 10:20	3 ft	679038-003
FS103	S	11.24.2020 10:30	3 ft	679038-004
FS104	S	11.24.2020 10:40	3 ft	679038-005
FS105	S	11.24.2020 10:50	3 ft	679038-006
FS106	S	11.24.2020 11:00	3 ft	679038-007
FS107	S	11.24.2020 11:10	3 ft	679038-008
FS108	S	11.24.2020 11:20	3 ft	679038-009
FS109	S	11.24.2020 11:30	3 ft	679038-010
FS110	S	11.24.2020 11:40	3 ft	679038-011
FS111	S	11.24.2020 11:50	3 ft	679038-012
FS112	S	11.24.2020 12:00	3 ft	679038-013
FS113	S	11.24.2020 12:10	3 ft	679038-014
FS114	S	11.24.2020 12:20	3 ft	679038-015
FS115	S	11.24.2020 12:30	3 ft	679038-016
FS116	S	11.24.2020 12:40	3 ft	679038-017
FS117	S	11.24.2020 12:50	3 ft	679038-018
FS118	S	11.24.2020 13:00	3 ft	679038-019
FS119	S	11.24.2020 13:10	3 ft	679038-020
FS120	S	11.24.2020 13:20	3 ft	679038-021
FS121	S	11.24.2020 13:30	3 ft	679038-022
FS122	S	11.24.2020 13:40	3 ft	679038-023
FS123	S	11.24.2020 13:50	3 ft	679038-024
FS124	S	11.24.2020 14:00	3 ft	679038-025
FS125	S	11.24.2020 14:10	3 ft	679038-026
FS126	S	11.24.2020 14:20	3 ft	679038-027
FS127	S	11.24.2020 14:30	3 ft	679038-028
FS128	S	11.24.2020 14:40	3 ft	679038-029
FS129	S	11.24.2020 14:50	3 ft	679038-030
SW85	S	11.24.2020 15:00	0 - 3 ft	679038-031
SW86	S	11.24.2020 15:10	0 - 3 ft	679038-032
SW87	S	11.24.2020 15:20	0 - 3 ft	679038-033
SW88	S	11.24.2020 15:30	0 - 3 ft	679038-034
SW89	S	11.24.2020 15:40	0 - 3 ft	679038-035
SW90	S	11.24.2020 15:50	0 - 3 ft	679038-036
SW91	S	11.24.2020 16:00	0 - 3 ft	679038-037
SW92	S	11.24.2020 16:10	0 - 3 ft	679038-038



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Muy Wayno*

Project ID: *TE012920104*
Work Order Number(s): *679038*

Report Date: *11.30.2020*
Date Received: *11.25.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS100**
Lab Sample Id: 679038-001

Matrix: Soil
Date Collected: 11.24.2020 10:00

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:36

% Moisture:
Basis: Wet Weight

Seq Number: 3143429

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	252	9.98	mg/kg	11.25.2020 12:39		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.25.2020 12:06

% Moisture:
Basis: Wet Weight

Seq Number: 3143426

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.25.2020 14:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.25.2020 14:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.25.2020 14:52	U	1
Total GRO-DRO	PHC628	<50.30	50.30	mg/kg	11.25.2020 14:52	U	1
Total TPH	PHC635	<50.30	50.30	mg/kg	11.25.2020 14:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.25.2020 14:52	
o-Terphenyl	84-15-1	111	%	70-135	11.25.2020 14:52	



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS100**
Lab Sample Id: 679038-001

Matrix: Soil
Date Collected: 11.24.2020 10:00

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.25.2020 13:40	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.25.2020 13:40	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.25.2020 13:40	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.25.2020 13:40	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.25.2020 13:40	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	11.25.2020 13:40	U	1
Total BTEX		<0.002010	0.002010	mg/kg	11.25.2020 13:40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.25.2020 13:40	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.25.2020 13:40	



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS101** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-002 Date Collected: 11.24.2020 10:10 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 09:36 % Moisture:
 Seq Number: 3143429 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	297	10.0	mg/kg	11.25.2020 12:55		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.25.2020 15:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.25.2020 15:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.25.2020 15:52	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.25.2020 15:52	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.25.2020 15:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.25.2020 15:52	
o-Terphenyl	84-15-1	104	%	70-135	11.25.2020 15:52	



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS101**
Lab Sample Id: 679038-002

Matrix: Soil
Date Collected: 11.24.2020 10:10

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.25.2020 14:02	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.25.2020 14:02	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.25.2020 14:02	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.25.2020 14:02	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.25.2020 14:02	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.25.2020 14:02	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.25.2020 14:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.25.2020 14:02		
1,4-Difluorobenzene	540-36-3	109	%	70-130	11.25.2020 14:02		



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS102** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-003 Date Collected: 11.24.2020 10:20 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 09:36 % Moisture:
 Seq Number: 3143429 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	270	9.92	mg/kg	11.25.2020 13:00		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.25.2020 16:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.25.2020 16:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.25.2020 16:12	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.25.2020 16:12	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.25.2020 16:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.25.2020 16:12	
o-Terphenyl	84-15-1	99	%	70-135	11.25.2020 16:12	



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS102**
Lab Sample Id: 679038-003

Matrix: Soil
Date Collected: 11.24.2020 10:20

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 14:25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 14:25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 14:25	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.25.2020 14:25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 14:25	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 14:25	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 14:25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.25.2020 14:25		
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.25.2020 14:25		



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS103** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-004 Date Collected: 11.24.2020 10:30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 09:36 % Moisture:
 Seq Number: 3143429 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	240	9.96	mg/kg	11.25.2020 13:05		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.25.2020 16:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.25.2020 16:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.25.2020 16:33	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.25.2020 16:33	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.25.2020 16:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	11.25.2020 16:33	
o-Terphenyl	84-15-1	113	%	70-135	11.25.2020 16:33	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS103**
Lab Sample Id: 679038-004

Matrix: Soil
Date Collected: 11.24.2020 10:30

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.25.2020 14:47	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.25.2020 14:47	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.25.2020 14:47	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.25.2020 14:47	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.25.2020 14:47	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.25.2020 14:47	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.25.2020 14:47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.25.2020 14:47		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.25.2020 14:47		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS104** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-005 Date Collected: 11.24.2020 10:40 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 09:36 % Moisture:
 Seq Number: 3143429 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	299	9.92	mg/kg	11.25.2020 13:11		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.25.2020 16:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.25.2020 16:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.25.2020 16:53	U	1
Total GRO-DRO	PHC628	<50.30	50.30	mg/kg	11.25.2020 16:53	U	1
Total TPH	PHC635	<50.30	50.30	mg/kg	11.25.2020 16:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.25.2020 16:53	
o-Terphenyl	84-15-1	113	%	70-135	11.25.2020 16:53	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS104**
Lab Sample Id: 679038-005

Matrix: Soil
Date Collected: 11.24.2020 10:40

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 15:10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 15:10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 15:10	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.25.2020 15:10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 15:10	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 15:10	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 15:10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.25.2020 15:10		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.25.2020 15:10		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS105** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-006 Date Collected: 11.24.2020 10:50 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 09:36 % Moisture:
 Seq Number: 3143429 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	312	9.94	mg/kg	11.25.2020 13:16		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.25.2020 17:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.25.2020 17:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.25.2020 17:13	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.25.2020 17:13	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.25.2020 17:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.25.2020 17:13	
o-Terphenyl	84-15-1	108	%	70-135	11.25.2020 17:13	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS105**
Lab Sample Id: 679038-006

Matrix: Soil
Date Collected: 11.24.2020 10:50

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.25.2020 15:32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.25.2020 15:32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.25.2020 15:32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.25.2020 15:32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.25.2020 15:32	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.25.2020 15:32	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.25.2020 15:32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.25.2020 15:32		
1,4-Difluorobenzene	540-36-3	109	%	70-130	11.25.2020 15:32		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS106**
Lab Sample Id: 679038-007

Matrix: Soil
Date Collected: 11.24.2020 11:00

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 09:36

% Moisture:
Basis: Wet Weight

Seq Number: 3143429

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.9	9.96	mg/kg	11.25.2020 13:21		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.25.2020 12:06

% Moisture:
Basis: Wet Weight

Seq Number: 3143426

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.25.2020 17:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.25.2020 17:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.25.2020 17:33	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.25.2020 17:33	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.25.2020 17:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	11.25.2020 17:33	
o-Terphenyl	84-15-1	115	%	70-135	11.25.2020 17:33	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS106**
Lab Sample Id: 679038-007

Matrix: Soil
Date Collected: 11.24.2020 11:00

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.25.2020 15:54	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.25.2020 15:54	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.25.2020 15:54	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.25.2020 15:54	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.25.2020 15:54	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	11.25.2020 15:54	U	1
Total BTEX		<0.002010	0.002010	mg/kg	11.25.2020 15:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.25.2020 15:54		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.25.2020 15:54		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS107** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-008 Date Collected: 11.24.2020 11:10 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 09:36 % Moisture:
 Seq Number: 3143429 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	31.9	9.98	mg/kg	11.25.2020 13:26		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.25.2020 17:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.25.2020 17:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.25.2020 17:53	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.25.2020 17:53	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.25.2020 17:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.25.2020 17:53	
o-Terphenyl	84-15-1	107	%	70-135	11.25.2020 17:53	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS107**
Lab Sample Id: 679038-008

Matrix: Soil
Date Collected: 11.24.2020 11:10

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.25.2020 16:17	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.25.2020 16:17	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.25.2020 16:17	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.25.2020 16:17	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.25.2020 16:17	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.25.2020 16:17	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.25.2020 16:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.25.2020 16:17	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.25.2020 16:17	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS108** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-009 Date Collected: 11.24.2020 11:20 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26.9	9.92	mg/kg	11.25.2020 14:39		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.25.2020 18:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.25.2020 18:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.25.2020 18:13	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.25.2020 18:13	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.25.2020 18:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.25.2020 18:13	
o-Terphenyl	84-15-1	109	%	70-135	11.25.2020 18:13	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS108**
Lab Sample Id: 679038-009

Matrix: Soil
Date Collected: 11.24.2020 11:20

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.25.2020 16:39	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.25.2020 16:39	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.25.2020 16:39	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.25.2020 16:39	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.25.2020 16:39	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	11.25.2020 16:39	U	1
Total BTEX		<0.002010	0.002010	mg/kg	11.25.2020 16:39	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.25.2020 16:39		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.25.2020 16:39		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS109** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-010 Date Collected: 11.24.2020 11:30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.2	10.0	mg/kg	11.25.2020 14:54		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.25.2020 18:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.25.2020 18:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.25.2020 18:34	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.25.2020 18:34	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.25.2020 18:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.25.2020 18:34	
o-Terphenyl	84-15-1	100	%	70-135	11.25.2020 18:34	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS109**
Lab Sample Id: 679038-010

Matrix: Soil
Date Collected: 11.24.2020 11:30

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.25.2020 17:02	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.25.2020 17:02	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.25.2020 17:02	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.25.2020 17:02	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.25.2020 17:02	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.25.2020 17:02	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.25.2020 17:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.25.2020 17:02	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.25.2020 17:02	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS110** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-011 Date Collected: 11.24.2020 11:40 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.3	10.0	mg/kg	11.25.2020 14:59		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.25.2020 19:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.25.2020 19:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.25.2020 19:14	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.25.2020 19:14	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.25.2020 19:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	11.25.2020 19:14	
o-Terphenyl	84-15-1	116	%	70-135	11.25.2020 19:14	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS110**
Lab Sample Id: 679038-011

Matrix: Soil
Date Collected: 11.24.2020 11:40

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 18:21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 18:21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 18:21	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.25.2020 18:21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 18:21	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 18:21	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 18:21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.25.2020 18:21		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.25.2020 18:21		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS111** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-012 Date Collected: 11.24.2020 11:50 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.2	9.98	mg/kg	11.25.2020 15:04		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.25.2020 19:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.25.2020 19:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.25.2020 19:34	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.25.2020 19:34	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.25.2020 19:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.25.2020 19:34	
o-Terphenyl	84-15-1	102	%	70-135	11.25.2020 19:34	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS111**
Lab Sample Id: 679038-012

Matrix: Soil
Date Collected: 11.24.2020 11:50

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 18:44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 18:44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 18:44	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.25.2020 18:44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 18:44	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 18:44	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 18:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.25.2020 18:44		
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.25.2020 18:44		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS112** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-013 Date Collected: 11.24.2020 12:00 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.2	9.94	mg/kg	11.25.2020 15:10		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.25.2020 19:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.25.2020 19:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.25.2020 19:54	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.25.2020 19:54	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.25.2020 19:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	11.25.2020 19:54	
o-Terphenyl	84-15-1	105	%	70-135	11.25.2020 19:54	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS112**
Lab Sample Id: 679038-013

Matrix: Soil
Date Collected: 11.24.2020 12:00

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.25.2020 19:06	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.25.2020 19:06	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.25.2020 19:06	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.25.2020 19:06	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.25.2020 19:06	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.25.2020 19:06	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.25.2020 19:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.25.2020 19:06	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.25.2020 19:06	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS113**
Lab Sample Id: 679038-014

Matrix: Soil
Date Collected: 11.24.2020 12:10

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 12:58

% Moisture:
Basis: Wet Weight

Seq Number: 3143432

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.2	10.0	mg/kg	11.25.2020 15:25		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 11.25.2020 12:06

% Moisture:
Basis: Wet Weight

Seq Number: 3143426

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.25.2020 20:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.25.2020 20:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.25.2020 20:14	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.25.2020 20:14	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.25.2020 20:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	120	%	70-135	11.25.2020 20:14	
o-Terphenyl	84-15-1	113	%	70-135	11.25.2020 20:14	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS113**
Lab Sample Id: 679038-014

Matrix: Soil
Date Collected: 11.24.2020 12:10

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.25.2020 19:29	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.25.2020 19:29	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.25.2020 19:29	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.25.2020 19:29	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.25.2020 19:29	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.25.2020 19:29	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.25.2020 19:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.25.2020 19:29	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.25.2020 19:29	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS114** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-015 Date Collected: 11.24.2020 12:20 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.2	10.1	mg/kg	11.25.2020 15:30		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.25.2020 20:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.25.2020 20:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.25.2020 20:34	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.25.2020 20:34	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.25.2020 20:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.25.2020 20:34	
o-Terphenyl	84-15-1	105	%	70-135	11.25.2020 20:34	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS114**
Lab Sample Id: 679038-015

Matrix: Soil
Date Collected: 11.24.2020 12:20

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.25.2020 19:51	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.25.2020 19:51	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.25.2020 19:51	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.25.2020 19:51	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.25.2020 19:51	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.25.2020 19:51	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.25.2020 19:51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.25.2020 19:51		
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.25.2020 19:51		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS115** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-016 Date Collected: 11.24.2020 12:30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.1	9.92	mg/kg	11.25.2020 15:35		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.25.2020 20:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.25.2020 20:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.25.2020 20:55	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.25.2020 20:55	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.25.2020 20:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	124	%	70-135	11.25.2020 20:55	
o-Terphenyl	84-15-1	98	%	70-135	11.25.2020 20:55	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS115**
Lab Sample Id: 679038-016

Matrix: Soil
Date Collected: 11.24.2020 12:30

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.25.2020 20:13	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.25.2020 20:13	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.25.2020 20:13	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.25.2020 20:13	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.25.2020 20:13	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	11.25.2020 20:13	U	1
Total BTEX		<0.002010	0.002010	mg/kg	11.25.2020 20:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.25.2020 20:13	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.25.2020 20:13	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS116** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-017 Date Collected: 11.24.2020 12:40 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.5	10.1	mg/kg	11.25.2020 15:41		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.25.2020 21:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.25.2020 21:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.25.2020 21:15	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.25.2020 21:15	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.25.2020 21:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.25.2020 21:15	
o-Terphenyl	84-15-1	107	%	70-135	11.25.2020 21:15	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS116**
Lab Sample Id: 679038-017

Matrix: Soil
Date Collected: 11.24.2020 12:40

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.25.2020 20:36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.25.2020 20:36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.25.2020 20:36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.25.2020 20:36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.25.2020 20:36	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.25.2020 20:36	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.25.2020 20:36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.25.2020 20:36		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.25.2020 20:36		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS117** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-018 Date Collected: 11.24.2020 12:50 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.9	9.92	mg/kg	11.25.2020 15:46		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.25.2020 21:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.25.2020 21:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.25.2020 21:35	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.25.2020 21:35	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.25.2020 21:35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.25.2020 21:35	
o-Terphenyl	84-15-1	104	%	70-135	11.25.2020 21:35	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS117**
Lab Sample Id: 679038-018

Matrix: Soil
Date Collected: 11.24.2020 12:50

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.25.2020 20:58	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.25.2020 20:58	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.25.2020 20:58	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.25.2020 20:58	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.25.2020 20:58	U	1
Total Xylenes	1330-20-7	<0.002020	0.002020	mg/kg	11.25.2020 20:58	U	1
Total BTEX		<0.002020	0.002020	mg/kg	11.25.2020 20:58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.25.2020 20:58		
1,4-Difluorobenzene	540-36-3	108	%	70-130	11.25.2020 20:58		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS118** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-019 Date Collected: 11.24.2020 13:00 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.2	10.1	mg/kg	11.25.2020 15:51		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.25.2020 21:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.25.2020 21:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.25.2020 21:55	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.25.2020 21:55	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.25.2020 21:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	11.25.2020 21:55	
o-Terphenyl	84-15-1	113	%	70-135	11.25.2020 21:55	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS118**
Lab Sample Id: 679038-019

Matrix: Soil
Date Collected: 11.24.2020 13:00

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.25.2020 21:21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.25.2020 21:21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.25.2020 21:21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.25.2020 21:21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.25.2020 21:21	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.25.2020 21:21	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.25.2020 21:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.25.2020 21:21	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.25.2020 21:21	



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Muy Wayno

Sample Id: **FS119** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-020 Date Collected: 11.24.2020 13:10 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.0	10.0	mg/kg	11.25.2020 16:06		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:06 % Moisture:
 Seq Number: 3143426 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.25.2020 22:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.25.2020 22:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.25.2020 22:15	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.25.2020 22:15	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.25.2020 22:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	11.25.2020 22:15	
o-Terphenyl	84-15-1	106	%	70-135	11.25.2020 22:15	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS119**
Lab Sample Id: 679038-020

Matrix: Soil
Date Collected: 11.24.2020 13:10

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 11:17

% Moisture:
Basis: Wet Weight

Seq Number: 3143420

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.25.2020 21:43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.25.2020 21:43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.25.2020 21:43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.25.2020 21:43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.25.2020 21:43	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.25.2020 21:43	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.25.2020 21:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	11.25.2020 21:43	
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.25.2020 21:43	



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Muy Wayno

Sample Id: **FS120** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-021 Date Collected: 11.24.2020 13:20 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.0	9.94	mg/kg	11.25.2020 16:12		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.25.2020 14:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.25.2020 14:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.25.2020 14:52	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.25.2020 14:52	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.25.2020 14:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.25.2020 14:52	
o-Terphenyl	84-15-1	111	%	70-135	11.25.2020 14:52	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS120**
Lab Sample Id: 679038-021

Matrix: Soil
Date Collected: 11.24.2020 13:20

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.25.2020 22:05	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.25.2020 22:05	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.25.2020 22:05	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.25.2020 22:05	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.25.2020 22:05	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.25.2020 22:05	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.25.2020 22:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.25.2020 22:05	
4-Bromofluorobenzene	460-00-4	89	%	70-130	11.25.2020 22:05	



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Muy Wayno

Sample Id: **FS121** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-022 Date Collected: 11.24.2020 13:30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	48.9	10.1	mg/kg	11.25.2020 16:27		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.5	50.5	mg/kg	11.25.2020 15:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.5	50.5	mg/kg	11.25.2020 15:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.5	50.5	mg/kg	11.25.2020 15:52	U	1
Total GRO-DRO	PHC628	<50.50	50.50	mg/kg	11.25.2020 15:52	U	1
Total TPH	PHC635	<50.50	50.50	mg/kg	11.25.2020 15:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.25.2020 15:52	
o-Terphenyl	84-15-1	116	%	70-135	11.25.2020 15:52	



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Muy Wayno

Sample Id: **FS121**
Lab Sample Id: 679038-022

Matrix: Soil
Date Collected: 11.24.2020 13:30

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 22:27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 22:27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 22:27	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.25.2020 22:27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 22:27	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 22:27	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 22:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.25.2020 22:27		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.25.2020 22:27		



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Muy Wayno

Sample Id: **FS122** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-023 Date Collected: 11.24.2020 13:40 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30.2	10.0	mg/kg	11.25.2020 16:32		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.25.2020 16:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.25.2020 16:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.25.2020 16:12	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.25.2020 16:12	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.25.2020 16:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.25.2020 16:12	
o-Terphenyl	84-15-1	98	%	70-135	11.25.2020 16:12	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS122**
Lab Sample Id: 679038-023

Matrix: Soil
Date Collected: 11.24.2020 13:40

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 22:49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 22:49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 22:49	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.25.2020 22:49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 22:49	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 22:49	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 22:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	11.25.2020 22:49		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.25.2020 22:49		



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Muy Wayno

Sample Id: **FS123** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-024 Date Collected: 11.24.2020 13:50 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.5	9.94	mg/kg	11.25.2020 16:38		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.25.2020 16:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.25.2020 16:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.25.2020 16:33	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.25.2020 16:33	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.25.2020 16:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	11.25.2020 16:33	
o-Terphenyl	84-15-1	101	%	70-135	11.25.2020 16:33	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS123**
Lab Sample Id: 679038-024

Matrix: Soil
Date Collected: 11.24.2020 13:50

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.25.2020 23:12	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.25.2020 23:12	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.25.2020 23:12	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.25.2020 23:12	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.25.2020 23:12	U	1
Total Xylenes	1330-20-7	<0.001980	0.001980	mg/kg	11.25.2020 23:12	U	1
Total BTEX		<0.001980	0.001980	mg/kg	11.25.2020 23:12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	11.25.2020 23:12		
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.25.2020 23:12		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS124** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-025 Date Collected: 11.24.2020 14:00 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.1	9.90	mg/kg	11.25.2020 16:43		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.25.2020 16:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.25.2020 16:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.25.2020 16:53	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.25.2020 16:53	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.25.2020 16:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	125	%	70-135	11.25.2020 16:53	
o-Terphenyl	84-15-1	118	%	70-135	11.25.2020 16:53	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS124**
Lab Sample Id: 679038-025

Matrix: Soil
Date Collected: 11.24.2020 14:00

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 23:34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 23:34	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 23:34	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.25.2020 23:34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 23:34	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 23:34	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 23:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.25.2020 23:34		
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.25.2020 23:34		



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Muy Wayno

Sample Id: **FS125** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-026 Date Collected: 11.24.2020 14:10 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.4	9.98	mg/kg	11.25.2020 16:48		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.25.2020 17:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.25.2020 17:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.25.2020 17:13	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.25.2020 17:13	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.25.2020 17:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.25.2020 17:13	
o-Terphenyl	84-15-1	106	%	70-135	11.25.2020 17:13	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS125**
Lab Sample Id: 679038-026

Matrix: Soil
Date Collected: 11.24.2020 14:10

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.25.2020 23:57	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.25.2020 23:57	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.25.2020 23:57	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	11.25.2020 23:57	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.25.2020 23:57	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.25.2020 23:57	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.25.2020 23:57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.25.2020 23:57	
4-Bromofluorobenzene	460-00-4	95	%	70-130	11.25.2020 23:57	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS126** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-027 Date Collected: 11.24.2020 14:20 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.6	9.96	mg/kg	11.25.2020 16:53		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.25.2020 17:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.25.2020 17:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.25.2020 17:33	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.25.2020 17:33	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.25.2020 17:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.25.2020 17:33	
o-Terphenyl	84-15-1	112	%	70-135	11.25.2020 17:33	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS126**
Lab Sample Id: 679038-027

Matrix: Soil
Date Collected: 11.24.2020 14:20

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.26.2020 00:19	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.26.2020 00:19	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.26.2020 00:19	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.26.2020 00:19	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.26.2020 00:19	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	11.26.2020 00:19	U	1
Total BTEX		<0.002010	0.002010	mg/kg	11.26.2020 00:19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.26.2020 00:19		
4-Bromofluorobenzene	460-00-4	93	%	70-130	11.26.2020 00:19		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS127** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-028 Date Collected: 11.24.2020 14:30 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 12:58 % Moisture:
 Seq Number: 3143432 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.7	9.98	mg/kg	11.25.2020 16:58		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.25.2020 17:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.25.2020 17:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.25.2020 17:53	U	1
Total GRO-DRO	PHC628	<50.30	50.30	mg/kg	11.25.2020 17:53	U	1
Total TPH	PHC635	<50.30	50.30	mg/kg	11.25.2020 17:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	11.25.2020 17:53	
o-Terphenyl	84-15-1	106	%	70-135	11.25.2020 17:53	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS127**
Lab Sample Id: 679038-028

Matrix: Soil
Date Collected: 11.24.2020 14:30

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.26.2020 00:41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.26.2020 00:41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.26.2020 00:41	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.26.2020 00:41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.26.2020 00:41	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.26.2020 00:41	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.26.2020 00:41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.26.2020 00:41		
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.26.2020 00:41		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS128** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-029 Date Collected: 11.24.2020 14:40 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 14:00 % Moisture:
 Seq Number: 3143434 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.8	9.90	mg/kg	11.25.2020 17:29		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.25.2020 18:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.25.2020 18:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.25.2020 18:13	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.25.2020 18:13	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.25.2020 18:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.25.2020 18:13	
o-Terphenyl	84-15-1	117	%	70-135	11.25.2020 18:13	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS128**
Lab Sample Id: 679038-029

Matrix: Soil
Date Collected: 11.24.2020 14:40

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.26.2020 01:04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.26.2020 01:04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.26.2020 01:04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.26.2020 01:04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.26.2020 01:04	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.26.2020 01:04	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.26.2020 01:04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.26.2020 01:04		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.26.2020 01:04		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS129** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-030 Date Collected: 11.24.2020 14:50 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 14:00 % Moisture:
 Seq Number: 3143434 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	27.4	9.98	mg/kg	11.25.2020 17:45		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.25.2020 18:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.25.2020 18:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.25.2020 18:34	U	1
Total GRO-DRO	PHC628	<49.80	49.80	mg/kg	11.25.2020 18:34	U	1
Total TPH	PHC635	<49.80	49.80	mg/kg	11.25.2020 18:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.25.2020 18:34	
o-Terphenyl	84-15-1	111	%	70-135	11.25.2020 18:34	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS129**
Lab Sample Id: 679038-030

Matrix: Soil
Date Collected: 11.24.2020 14:50

Date Received: 11.25.2020 08:53
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.102	0.00200	mg/kg	11.26.2020 01:26		1
Toluene	108-88-3	0.104	0.00200	mg/kg	11.26.2020 01:26		1
Ethylbenzene	100-41-4	0.0950	0.00200	mg/kg	11.26.2020 01:26		1
m,p-Xylenes	179601-23-1	0.195	0.00399	mg/kg	11.26.2020 01:26		1
o-Xylene	95-47-6	0.0970	0.00200	mg/kg	11.26.2020 01:26		1
Total Xylenes	1330-20-7	0.2920	0.002000	mg/kg	11.26.2020 01:26		1
Total BTEX		0.5930	0.002000	mg/kg	11.26.2020 01:26		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	70-130	11.26.2020 01:26		
1,4-Difluorobenzene	540-36-3	96	%	70-130	11.26.2020 01:26		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW85** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-031 Date Collected: 11.24.2020 15:00 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 14:00 % Moisture:
 Seq Number: 3143434 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.6	9.98	mg/kg	11.25.2020 17:50		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.25.2020 19:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.25.2020 19:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.25.2020 19:14	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.25.2020 19:14	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.25.2020 19:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.25.2020 19:14	
o-Terphenyl	84-15-1	116	%	70-135	11.25.2020 19:14	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW85**
Lab Sample Id: 679038-031

Matrix: Soil
Date Collected: 11.24.2020 15:00

Date Received: 11.25.2020 08:53
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.26.2020 02:44	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.26.2020 02:44	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.26.2020 02:44	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.26.2020 02:44	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.26.2020 02:44	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.26.2020 02:44	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.26.2020 02:44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.26.2020 02:44		
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.26.2020 02:44		



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW86** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-032 Date Collected: 11.24.2020 15:10 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 14:00 % Moisture:
 Seq Number: 3143434 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	75.8	10.1	mg/kg	11.25.2020 17:55		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.25.2020 19:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.25.2020 19:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.25.2020 19:34	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.25.2020 19:34	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.25.2020 19:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	11.25.2020 19:34	
o-Terphenyl	84-15-1	118	%	70-135	11.25.2020 19:34	



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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW86**
Lab Sample Id: 679038-032

Matrix: Soil
Date Collected: 11.24.2020 15:10

Date Received: 11.25.2020 08:53
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.26.2020 03:06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.26.2020 03:06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.26.2020 03:06	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.26.2020 03:06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.26.2020 03:06	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.26.2020 03:06	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.26.2020 03:06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.26.2020 03:06		
4-Bromofluorobenzene	460-00-4	94	%	70-130	11.26.2020 03:06		



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW87** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-033 Date Collected: 11.24.2020 15:20 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 14:00 % Moisture:
 Seq Number: 3143434 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	86.6	10.1	mg/kg	11.25.2020 18:00		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.25.2020 19:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.25.2020 19:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.25.2020 19:54	U	1
Total GRO-DRO	PHC628	<50.30	50.30	mg/kg	11.25.2020 19:54	U	1
Total TPH	PHC635	<50.30	50.30	mg/kg	11.25.2020 19:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.25.2020 19:54	
o-Terphenyl	84-15-1	116	%	70-135	11.25.2020 19:54	



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW87**
Lab Sample Id: 679038-033

Matrix: Soil
Date Collected: 11.24.2020 15:20

Date Received: 11.25.2020 08:53
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.26.2020 03:29	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.26.2020 03:29	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.26.2020 03:29	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.26.2020 03:29	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.26.2020 03:29	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.26.2020 03:29	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.26.2020 03:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	11.26.2020 03:29		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.26.2020 03:29		



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW88** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-034 Date Collected: 11.24.2020 15:30 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 14:00 % Moisture:
 Seq Number: 3143434 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	79.1	10.1	mg/kg	11.25.2020 18:16		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.25.2020 20:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.25.2020 20:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.25.2020 20:14	U	1
Total GRO-DRO	PHC628	<50.30	50.30	mg/kg	11.25.2020 20:14	U	1
Total TPH	PHC635	<50.30	50.30	mg/kg	11.25.2020 20:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.25.2020 20:14	
o-Terphenyl	84-15-1	108	%	70-135	11.25.2020 20:14	



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW88**
Lab Sample Id: 679038-034

Matrix: Soil
Date Collected: 11.24.2020 15:30

Date Received: 11.25.2020 08:53
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.26.2020 03:51	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.26.2020 03:51	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.26.2020 03:51	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.26.2020 03:51	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.26.2020 03:51	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.26.2020 03:51	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.26.2020 03:51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	11.26.2020 03:51		
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.26.2020 03:51		



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW89** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-035 Date Collected: 11.24.2020 15:40 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 14:00 % Moisture:
 Seq Number: 3143434 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	66.7	10.0	mg/kg	11.25.2020 18:21		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.25.2020 20:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.25.2020 20:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.25.2020 20:34	U	1
Total GRO-DRO	PHC628	<50.20	50.20	mg/kg	11.25.2020 20:34	U	1
Total TPH	PHC635	<50.20	50.20	mg/kg	11.25.2020 20:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	11.25.2020 20:34	
o-Terphenyl	84-15-1	110	%	70-135	11.25.2020 20:34	



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW89**
Lab Sample Id: 679038-035

Matrix: Soil
Date Collected: 11.24.2020 15:40

Date Received: 11.25.2020 08:53
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.26.2020 04:13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.26.2020 04:13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.26.2020 04:13	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.26.2020 04:13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.26.2020 04:13	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.26.2020 04:13	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.26.2020 04:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	11.26.2020 04:13	
1,4-Difluorobenzene	540-36-3	104	%	70-130	11.26.2020 04:13	



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW90** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-036 Date Collected: 11.24.2020 15:50 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 14:00 % Moisture:
 Seq Number: 3143434 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	76.7	9.92	mg/kg	11.25.2020 18:26		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.25.2020 20:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.25.2020 20:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.25.2020 20:55	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	11.25.2020 20:55	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	11.25.2020 20:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.25.2020 20:55	
o-Terphenyl	84-15-1	100	%	70-135	11.25.2020 20:55	



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW90**
Lab Sample Id: 679038-036

Matrix: Soil
Date Collected: 11.24.2020 15:50

Date Received: 11.25.2020 08:53
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.26.2020 04:36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.26.2020 04:36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.26.2020 04:36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.26.2020 04:36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.26.2020 04:36	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.26.2020 04:36	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.26.2020 04:36	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.26.2020 04:36		
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.26.2020 04:36		



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW91** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-037 Date Collected: 11.24.2020 16:00 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 14:00 % Moisture:
 Seq Number: 3143434 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	74.6	9.98	mg/kg	11.25.2020 18:31		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.25.2020 21:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.25.2020 21:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.25.2020 21:15	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	11.25.2020 21:15	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	11.25.2020 21:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.25.2020 21:15	
o-Terphenyl	84-15-1	116	%	70-135	11.25.2020 21:15	



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW91**
Lab Sample Id: 679038-037

Matrix: Soil
Date Collected: 11.24.2020 16:00

Date Received: 11.25.2020 08:53
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.26.2020 04:58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.26.2020 04:58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.26.2020 04:58	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.26.2020 04:58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.26.2020 04:58	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	11.26.2020 04:58	U	1
Total BTEX		<0.002000	0.002000	mg/kg	11.26.2020 04:58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	11.26.2020 04:58		
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.26.2020 04:58		



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW92** Matrix: Soil Date Received: 11.25.2020 08:53
 Lab Sample Id: 679038-038 Date Collected: 11.24.2020 16:10 Sample Depth: 0 - 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 11.25.2020 14:00 % Moisture:
 Seq Number: 3143434 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	81.3	9.94	mg/kg	11.25.2020 18:37		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 11.25.2020 12:00 % Moisture:
 Seq Number: 3143427 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.25.2020 21:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.25.2020 21:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.25.2020 21:35	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	11.25.2020 21:35	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	11.25.2020 21:35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.25.2020 21:35	
o-Terphenyl	84-15-1	116	%	70-135	11.25.2020 21:35	



Certificate of Analytical Results 679038

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **SW92**
Lab Sample Id: 679038-038

Matrix: Soil
Date Collected: 11.24.2020 16:10

Date Received: 11.25.2020 08:53
Sample Depth: 0 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 11.25.2020 14:19

% Moisture:
Basis: Wet Weight

Seq Number: 3143421

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	11.26.2020 05:21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	11.26.2020 05:21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	11.26.2020 05:21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	11.26.2020 05:21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	11.26.2020 05:21	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	11.26.2020 05:21	U	1
Total BTEX		<0.001990	0.001990	mg/kg	11.26.2020 05:21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	11.26.2020 05:21		
1,4-Difluorobenzene	540-36-3	102	%	70-130	11.26.2020 05:21		



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.
Muy Wayno

Analytical Method: Chloride by EPA 300

Seq Number: 3143429

MB Sample Id: 7715976-1-BLK

Matrix: Solid

LCS Sample Id: 7715976-1-BKS

Prep Method: E300P

Date Prep: 11.25.2020

LCSD Sample Id: 7715976-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.00	250.0	242.8	97	239.3	96	90-110	1	20	mg/kg	11.25.2020 10:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3143432

MB Sample Id: 7715982-1-BLK

Matrix: Solid

LCS Sample Id: 7715982-1-BKS

Prep Method: E300P

Date Prep: 11.25.2020

LCSD Sample Id: 7715982-1-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	247	99	242	97	90-110	2	20	mg/kg	11.25.2020 14:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3143434

MB Sample Id: 7715983-1-BLK

Matrix: Solid

LCS Sample Id: 7715983-1-BKS

Prep Method: E300P

Date Prep: 11.25.2020

LCSD Sample Id: 7715983-1-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	242	97	240	96	90-110	1	20	mg/kg	11.25.2020 17:19	

Analytical Method: Chloride by EPA 300

Seq Number: 3143429

Parent Sample Id: 678998-001

Matrix: Soil

MS Sample Id: 678998-001 S

Prep Method: E300P

Date Prep: 11.25.2020

MSD Sample Id: 678998-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	40.63	199.0	226.0	93	230.3	95	90-110	2	20	mg/kg	11.25.2020 11:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3143429

Parent Sample Id: 678998-011

Matrix: Soil

MS Sample Id: 678998-011 S

Prep Method: E300P

Date Prep: 11.25.2020

MSD Sample Id: 678998-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.15	200.0	210.0	97	210.5	97	90-110	0	20	mg/kg	11.25.2020 12:24	

Analytical Method: Chloride by EPA 300

Seq Number: 3143432

Parent Sample Id: 679038-009

Matrix: Soil

MS Sample Id: 679038-009 S

Prep Method: E300P

Date Prep: 11.25.2020

MSD Sample Id: 679038-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	26.9	200	215	94	211	92	90-110	2	20	mg/kg	11.25.2020 14:44	

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.
Muy Wayno

Analytical Method: Chloride by EPA 300

Seq Number: 3143432

Parent Sample Id: 679038-019

Matrix: Soil

MS Sample Id: 679038-019 S

Prep Method: E300P

Date Prep: 11.25.2020

MSD Sample Id: 679038-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	21.2	199	208	94	212	95	90-110	2	20	mg/kg	11.25.2020 15:56	

Analytical Method: Chloride by EPA 300

Seq Number: 3143434

Parent Sample Id: 679038-029

Matrix: Soil

MS Sample Id: 679038-029 S

Prep Method: E300P

Date Prep: 11.25.2020

MSD Sample Id: 679038-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	20.8	199	217	99	216	98	90-110	0	20	mg/kg	11.25.2020 17:34	

Analytical Method: Chloride by EPA 300

Seq Number: 3143434

Parent Sample Id: 679040-001

Matrix: Soil

MS Sample Id: 679040-001 S

Prep Method: E300P

Date Prep: 11.25.2020

MSD Sample Id: 679040-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	211	200	395	92	397	93	90-110	1	20	mg/kg	11.25.2020 18:47	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143427

MB Sample Id: 7715984-1-BLK

Matrix: Solid

LCS Sample Id: 7715984-1-BKS

Prep Method: SW8015P

Date Prep: 11.25.2020

LCSD Sample Id: 7715984-1-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	1200	120	1140	114	70-135	5	35	mg/kg	11.25.2020 14:12	
Diesel Range Organics (DRO)	<50.0	1000	1030	103	1070	107	70-135	4	35	mg/kg	11.25.2020 14:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		111		104		70-135	%	11.25.2020 14:12
o-Terphenyl	113		119		115		70-135	%	11.25.2020 14:12

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143426

MB Sample Id: 7715985-1-BLK

Matrix: Solid

LCS Sample Id: 7715985-1-BKS

Prep Method: SW8015P

Date Prep: 11.25.2020

LCSD Sample Id: 7715985-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1090	109	1100	110	70-135	1	35	mg/kg	11.25.2020 14:12	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1090	109	70-135	1	35	mg/kg	11.25.2020 14:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		109		110		70-135	%	11.25.2020 14:12
o-Terphenyl	117		109		109		70-135	%	11.25.2020 14:12

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.

Muy Wayno

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143427

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.25.2020

MB Sample Id: 7715984-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.25.2020 13:52	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143426

Matrix: Solid

Prep Method: SW8015P

Date Prep: 11.25.2020

MB Sample Id: 7715985-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.25.2020 13:52	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143427

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.25.2020

Parent Sample Id: 679038-021

MS Sample Id: 679038-021 S

MSD Sample Id: 679038-021 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	1210	121	1140	114	70-135	6	35	mg/kg	11.25.2020 15:12	
Diesel Range Organics (DRO)	<49.9	998	1150	115	1080	108	70-135	6	35	mg/kg	11.25.2020 15:12	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		109		70-135	%	11.25.2020 15:12
o-Terphenyl	101		106		70-135	%	11.25.2020 15:12

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143426

Matrix: Soil

Prep Method: SW8015P

Date Prep: 11.25.2020

Parent Sample Id: 679038-001

MS Sample Id: 679038-001 S

MSD Sample Id: 679038-001 SD

Parameter

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	1140	114	1200	120	70-135	5	35	mg/kg	11.25.2020 15:12	
Diesel Range Organics (DRO)	<49.9	997	994	100	1060	106	70-135	6	35	mg/kg	11.25.2020 15:12	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		107		70-135	%	11.25.2020 15:12
o-Terphenyl	105		103		70-135	%	11.25.2020 15:12

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.

Muy Wayno

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143420

Matrix: Solid

Prep Method: SW5035A

Date Prep: 11.25.2020

MB Sample Id: 7715987-1-BLK

LCS Sample Id: 7715987-1-BKS

LCSD Sample Id: 7715987-1-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	0.0929	93	0.0922	92	70-130	1	35	mg/kg	11.25.2020 11:36	
Toluene	<0.00200	0.100	0.0886	89	0.0883	88	70-130	0	35	mg/kg	11.25.2020 11:36	
Ethylbenzene	<0.00200	0.100	0.0932	93	0.0898	90	71-129	4	35	mg/kg	11.25.2020 11:36	
m,p-Xylenes	<0.00400	0.200	0.193	97	0.189	95	70-135	2	35	mg/kg	11.25.2020 11:36	
o-Xylene	<0.00200	0.100	0.0937	94	0.0936	94	71-133	0	35	mg/kg	11.25.2020 11:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		99		98		70-130	%	11.25.2020 11:36
4-Bromofluorobenzene	112		107		109		70-130	%	11.25.2020 11:36

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143421

Matrix: Solid

Prep Method: SW5035A

Date Prep: 11.25.2020

MB Sample Id: 7715990-1-BLK

LCS Sample Id: 7715990-1-BKS

LCSD Sample Id: 7715990-1-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	0.109	109	70-130	1	35	mg/kg	11.25.2020 20:02	
Toluene	<0.00200	0.100	0.103	103	0.103	103	70-130	0	35	mg/kg	11.25.2020 20:02	
Ethylbenzene	<0.00200	0.100	0.0942	94	0.0944	94	71-129	0	35	mg/kg	11.25.2020 20:02	
m,p-Xylenes	<0.00400	0.200	0.191	96	0.193	97	70-135	1	35	mg/kg	11.25.2020 20:02	
o-Xylene	<0.00200	0.100	0.0958	96	0.0948	95	71-133	1	35	mg/kg	11.25.2020 20:02	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		99		99		70-130	%	11.25.2020 20:02
4-Bromofluorobenzene	90		85		88		70-130	%	11.25.2020 20:02

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143420

Matrix: Soil

Prep Method: SW5035A

Date Prep: 11.25.2020

Parent Sample Id: 679038-001

MS Sample Id: 679038-001 S

MSD Sample Id: 679038-001 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	0.0947	95	0.0836	84	70-130	12	35	mg/kg	11.25.2020 12:20	
Toluene	<0.00200	0.100	0.0891	89	0.0782	78	70-130	13	35	mg/kg	11.25.2020 12:20	
Ethylbenzene	<0.00200	0.100	0.0941	94	0.0822	82	71-129	13	35	mg/kg	11.25.2020 12:20	
m,p-Xylenes	<0.00401	0.200	0.192	96	0.167	83	70-135	14	35	mg/kg	11.25.2020 12:20	
o-Xylene	<0.00200	0.100	0.0926	93	0.0809	81	71-133	13	35	mg/kg	11.25.2020 12:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		101		70-130	%	11.25.2020 12:20
4-Bromofluorobenzene	110		112		70-130	%	11.25.2020 12:20

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.
Muy Wayno

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143421

Parent Sample Id: 679038-021

Matrix: Soil

MS Sample Id: 679038-021 S

Prep Method: SW5035A

Date Prep: 11.25.2020

MSD Sample Id: 679038-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.113	114	0.103	103	70-130	9	35	mg/kg	11.25.2020 20:47	
Toluene	<0.00199	0.0994	0.106	107	0.0964	96	70-130	9	35	mg/kg	11.25.2020 20:47	
Ethylbenzene	<0.00199	0.0994	0.0970	98	0.0868	87	71-129	11	35	mg/kg	11.25.2020 20:47	
m,p-Xylenes	<0.00398	0.199	0.197	99	0.175	88	70-135	12	35	mg/kg	11.25.2020 20:47	
o-Xylene	<0.00199	0.0994	0.0979	98	0.0872	87	71-133	12	35	mg/kg	11.25.2020 20:47	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		70-130	%	11.25.2020 20:47
4-Bromofluorobenzene	88		90		70-130	%	11.25.2020 20:47

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: 679638

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

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Project Manager:	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:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	Spencer.Lo@wsp.com; Kalei.Jennings@wsp.com; Dan.Moir@wsp.com

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

Project Name:	Muy Wayno	Turn Around
Project Number:	TE012920104	Routine ☒ Rush:
P.O. Number:		
Sampler's Name:	Spencer Lo	Due Date:

SAMPLE RECEIPT	
Temp Blank:	Yes ☒ No ☐
Temperature (°C):	1.2/1.0
Received Intact:	Yes ☒ No ☐
Cooler Custody Seals:	Yes ☒ No ☐
Sample Custody Seals:	Yes ☒ No ☐
Thermometer ID:	T-1114-003
Correction Factor:	-0.2
Total Containers:	38

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride																	lab, if received by 4:30pm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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FS100	S	11/24/2020	1000	3'	1	X	X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

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

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

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>	11/25/20 6:30 am	<i>[Signature]</i>	<i>[Signature]</i>	11.25.20 8:53



Chain of Custody

Work Order No: 679038

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

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

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Project Manager:	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:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	Spencer.Lo@wsp.com; Kalei.Jennings@wsp.com; Dan.Moir@wsp.com

Project Name:	Muy Wayno	Turn Around	
Project Number:	TE012920104	Route:	R
P.O. Number:		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT			
Temperature (°C):	Temp Blank:	Yes	No
Received Inact:	Thermometer ID	Yes	No
Cooler Custody Seals:	Correction Factor	Yes	No
Sample Custody Seals:	Total Containers:	Yes	No

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST										Work Order Notes
					Number of Containers										TAT starts the day received by the lab, if received by 4:30pm
					TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)								
FS110	S	11/24/2020	1140	3'	1	X	X	X							
FS111	S	11/24/2020	1150	3'	1	X	X	X							
FS112	S	11/24/2020	1200	3'	1	X	X	X							
FS113	S	11/24/2020	1210	3'	1	X	X	X							
FS114	S	11/24/2020	1220	3'	1	X	X	X							
FS115	S	11/24/2020	1230	3'	1	X	X	X							
FS116	S	11/24/2020	1240	3'	1	X	X	X							
FS117	S	11/24/2020	1250	3'	1	X	X	X							
FS118	S	11/24/2020	1300	3'	1	X	X	X							
FS119	S	11/24/2020	1310	3'	1	X	X	X							

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu 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>[Signature]</i>	<i>[Signature]</i>	11/25/20 4:30pm	<i>[Signature]</i>	<i>[Signature]</i>	11-25-20 853



Chain of Custody

Work Order No: 679038

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

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	Spencer.Lo@wsp.com, Kaiel.Jennings@wsp.com, Dan.Moir@wsp.com

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

Project Name:	Muy Wayno	Turn Around
Project Number:	TE012920104	Routine ☒ Rush:
P.O. Number:		Due Date:
Sampler's Name:	Spencer Lo	

SAMPLE RECEIPT			
Temperature (°C):	Temp Blank:	Yes	No
Received Inact:	Thermometer ID	Yes	No
Cooler Custody Seals:	Correction Factor:	Yes	No
Sample Custody Seals:	Total Containers:	Yes	No

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	ANALYSIS REQUEST										Sample Comments	
						TPH (E)	BTEX (E)	Chloride									
FS120	S	11/24/2020	1320	3'	1	X	X	X									
FS121	S	11/24/2020	1330	3'	1	X	X	X									
FS122	S	11/24/2020	1340	3'	1	X	X	X									
FS123	S	11/24/2020	1350	3'	1	X	X	X									
FS124	S	11/24/2020	1400	3'	1	X	X	X									
FS125	S	11/24/2020	1410	3'	1	X	X	X									
FS126	S	11/24/2020	1420	3'	1	X	X	X									
FS127	S	11/24/2020	1430	3'	1	X	X	X									
FS128	S	11/24/2020	1440	3'	1	X	X	X									
FS129	S	11/24/2020	1450	3'	1	X	X	X									
Total 200.7 / 6010 200.8 / 6020- 8PCBA 12PCBA TWA 44 11/24/2020																	

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 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

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
		11-25-20 4:30 PM			11-25-20 8:53



Chain of Custody

Work Order No: 679038

Midland TX (432-704-5440) EL Paso TX (915)585-3443 Lubbock TX (806)794-1296
Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3333
Phoenix, AZ (480) 355-0900 Atlanta GA (770) 449-8800 Tampa FL (813) 575-382-7550

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 4 of 4

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	Spencer.Lt@wsp.com, Kalel.Jennings@wsp.com, Dan.Moir@wsp.com

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

Project Name:	Muy Wayno	Turn Around
Project Number:	TE012920104	Routine ☒
P. O. Number:		Rush: ☐
Sampler's Name:	Spencer Lo	Due Date:

ANALYSIS REQUEST

Work Order Notes

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

[illegible]

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	SiO ₂	Na	Sr	Ti	Sn	U	V	Zn	
TC1P / SPLP 6010:	8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	SiO ₂	Na	Sr	Ti	Sn	U	V	Zn								

1631 / 245.1 / 7470 / 7471 : Hg

Xenoco 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 Xenoco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenoco, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
1	<i>[Signature]</i>			
2	<i>[Signature]</i>	11-25-20/4:30pm	<i>[Signature]</i>	11-25-20 03
3				
4				
5				

Revised Date 051418 Rev. 2018.1

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11.25.2020 08.53.00 AM

Work Order #: 679038

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T_NM_007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#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:



Cloe Clifton

Date: 11.25.2020

Checklist reviewed by:



Jessica Kramer

Date: 11.25.2020

Certificate of Analysis Summary 679359



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id: TE012920104

Date Received in Lab: Tue 12.01.2020 12:25

Contact: Dan Moir

Report Date: 12.04.2020 11:51

Project Location:

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	679359-001	679359-002				
	Field Id:	FS130	FS131				
	Depth:	0.5- ft	0.5- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	11.25.2020 14:40	11.25.2020 15:00				
BTEX by EPA 8021B	Extracted:	12.01.2020 16:00	12.01.2020 16:00				
	Analyzed:	12.01.2020 19:06	12.01.2020 19:28				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00199 0.00199	<0.00199 0.00199				
	Toluene	<0.00199 0.00199	<0.00199 0.00199				
	Ethylbenzene	<0.00199 0.00199	<0.00199 0.00199				
	m,p-Xylenes	<0.00398 0.00398	<0.00398 0.00398				
	o-Xylene	<0.00199 0.00199	<0.00199 0.00199				
	Total Xylenes	<0.001990 0.001990	<0.001990 0.001990				
	Total BTEX	<0.001990 0.001990	<0.001990 0.001990				
Chloride by EPA 300	Extracted:	12.01.2020 16:13	12.01.2020 16:13				
	Analyzed:	12.01.2020 18:20	12.01.2020 18:36				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	485 49.9	451 9.90				
TPH by SW8015 Mod	Extracted:	12.01.2020 17:00	12.01.2020 17:00				
	Analyzed:	12.01.2020 19:38	12.01.2020 20:39				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<50.1 50.1	<50.0 50.0				
	Diesel Range Organics (DRO)	<50.1 50.1	<50.0 50.0				
	Motor Oil Range Hydrocarbons (MRO)	<50.1 50.1	<50.0 50.0				
	Total GRO-DRO	<50.10 50.10	<50.00 50.00				
	Total TPH	<50.10 50.10	<50.00 50.00				

BRL - Below Reporting Limit

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



Analytical Report 679359

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno

TE012920104

12.04.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



12.04.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **679359**

Muy Wayno

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) 679359. 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. 679359 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 679359

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS130	S	11.25.2020 14:40	0.5 ft	679359-001
FS131	S	11.25.2020 15:00	0.5 ft	679359-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Muy Wayno*

Project ID: *TE012920104*
Work Order Number(s): *679359*

Report Date: *12.04.2020*
Date Received: *12.01.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 679359

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS130**
Lab Sample Id: 679359-001

Matrix: Soil
Date Collected: 11.25.2020 14:40

Date Received: 12.01.2020 12:25
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 12.01.2020 16:13

% Moisture:
Basis: Wet Weight

Seq Number: 3143662

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	485	49.9	mg/kg	12.01.2020 18:20		5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 12.01.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143655

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	12.01.2020 19:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	12.01.2020 19:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	12.01.2020 19:38	U	1
Total GRO-DRO	PHC628	<50.10	50.10	mg/kg	12.01.2020 19:38	U	1
Total TPH	PHC635	<50.10	50.10	mg/kg	12.01.2020 19:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	12.01.2020 19:38	
o-Terphenyl	84-15-1	113	%	70-135	12.01.2020 19:38	



Certificate of Analytical Results 679359

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS130**
Lab Sample Id: 679359-001

Matrix: Soil
Date Collected: 11.25.2020 14:40

Date Received: 12.01.2020 12:25
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 12.01.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143652

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.01.2020 19:06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.01.2020 19:06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.01.2020 19:06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.01.2020 19:06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.01.2020 19:06	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	12.01.2020 19:06	U	1
Total BTEX		<0.001990	0.001990	mg/kg	12.01.2020 19:06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	12.01.2020 19:06		
1,4-Difluorobenzene	540-36-3	103	%	70-130	12.01.2020 19:06		



Certificate of Analytical Results 679359

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS131**
Lab Sample Id: 679359-002

Matrix: Soil
Date Collected: 11.25.2020 15:00

Date Received: 12.01.2020 12:25
Sample Depth: 0.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 12.01.2020 16:13

% Moisture:
Basis: Wet Weight

Seq Number: 3143662

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	451	9.90	mg/kg	12.01.2020 18:36		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: MAB

Analyst: CAC

Date Prep: 12.01.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143655

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.01.2020 20:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.01.2020 20:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.01.2020 20:39	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	12.01.2020 20:39	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.01.2020 20:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	12.01.2020 20:39	
o-Terphenyl	84-15-1	100	%	70-135	12.01.2020 20:39	



Certificate of Analytical Results 679359

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **FS131**
Lab Sample Id: 679359-002

Matrix: Soil
Date Collected: 11.25.2020 15:00

Date Received: 12.01.2020 12:25
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 12.01.2020 16:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143652

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.01.2020 19:28	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.01.2020 19:28	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.01.2020 19:28	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.01.2020 19:28	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.01.2020 19:28	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	12.01.2020 19:28	U	1
Total BTEX		<0.001990	0.001990	mg/kg	12.01.2020 19:28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	12.01.2020 19:28		
1,4-Difluorobenzene	540-36-3	105	%	70-130	12.01.2020 19:28		



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.
Muy Wayno

Analytical Method: Chloride by EPA 300

Seq Number: 3143662

MB Sample Id: 7716201-1-BLK

Matrix: Solid

LCS Sample Id: 7716201-1-BKS

Prep Method: E300P

Date Prep: 12.01.2020

LCSD Sample Id: 7716201-1-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	238	95	239	96	90-110	0	20	mg/kg	12.01.2020 18:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3143662

Parent Sample Id: 679359-001

Matrix: Soil

MS Sample Id: 679359-001 S

Prep Method: E300P

Date Prep: 12.01.2020

MSD Sample Id: 679359-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	485	200	674	95	674	94	90-110	0	20	mg/kg	12.01.2020 18:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3143662

Parent Sample Id: 679363-003

Matrix: Soil

MS Sample Id: 679363-003 S

Prep Method: E300P

Date Prep: 12.01.2020

MSD Sample Id: 679363-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3950	200	4170	110	4150	100	90-110	0	20	mg/kg	12.01.2020 19:38	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143655

MB Sample Id: 7716226-1-BLK

Matrix: Solid

LCS Sample Id: 7716226-1-BKS

Prep Method: SW8015P

Date Prep: 12.01.2020

LCSD Sample Id: 7716226-1-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	954	95	890	89	70-135	7	35	mg/kg	12.01.2020 18:58	
Diesel Range Organics (DRO)	<50.0	1000	963	96	1140	114	70-135	17	35	mg/kg	12.01.2020 18:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		116		121		70-135	%	12.01.2020 18:58
o-Terphenyl	100		95		112		70-135	%	12.01.2020 18:58

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143655

Matrix: Solid

MB Sample Id: 7716226-1-BLK

Prep Method: SW8015P

Date Prep: 12.01.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.01.2020 18:38	

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

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

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

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



LT Environmental, Inc.
Muy Wayno

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143655

Parent Sample Id: 679359-001

Matrix: Soil

MS Sample Id: 679359-001 S

Prep Method: SW8015P

Date Prep: 12.01.2020

MSD Sample Id: 679359-001 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	1160	115	1080	108	70-135	7	35	mg/kg	12.01.2020 19:58	
Diesel Range Organics (DRO)	<50.3	1010	1060	105	1160	116	70-135	9	35	mg/kg	12.01.2020 19:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		105		70-135	%	12.01.2020 19:58
o-Terphenyl	108		106		70-135	%	12.01.2020 19:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143652

MB Sample Id: 7716225-1-BLK

Matrix: Solid

LCS Sample Id: 7716225-1-BKS

Prep Method: SW5035A

Date Prep: 12.01.2020

LCSD Sample Id: 7716225-1-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	0.0958	96	0.0894	89	70-130	7	35	mg/kg	12.01.2020 17:03	
Toluene	<0.00200	0.100	0.0919	92	0.0908	91	70-130	1	35	mg/kg	12.01.2020 17:03	
Ethylbenzene	<0.00200	0.100	0.0852	85	0.0840	84	71-129	1	35	mg/kg	12.01.2020 17:03	
m,p-Xylenes	<0.00400	0.200	0.173	87	0.171	86	70-135	1	35	mg/kg	12.01.2020 17:03	
o-Xylene	<0.00200	0.100	0.0851	85	0.0843	84	71-133	1	35	mg/kg	12.01.2020 17:03	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		99		97		70-130	%	12.01.2020 17:03
4-Bromofluorobenzene	89		86		86		70-130	%	12.01.2020 17:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143652

Parent Sample Id: 679359-001

Matrix: Soil

MS Sample Id: 679359-001 S

Prep Method: SW5035A

Date Prep: 12.01.2020

MSD Sample Id: 679359-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.109	110	0.119	119	70-130	9	35	mg/kg	12.01.2020 17:48	
Toluene	<0.00199	0.0994	0.106	107	0.116	116	70-130	9	35	mg/kg	12.01.2020 17:48	
Ethylbenzene	<0.00199	0.0994	0.0992	100	0.108	108	71-129	8	35	mg/kg	12.01.2020 17:48	
m,p-Xylenes	<0.00398	0.199	0.201	101	0.220	110	70-135	9	35	mg/kg	12.01.2020 17:48	
o-Xylene	<0.00199	0.0994	0.0992	100	0.107	107	71-133	8	35	mg/kg	12.01.2020 17:48	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		70-130	%	12.01.2020 17:48
4-Bromofluorobenzene	90		89		70-130	%	12.01.2020 17:48

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



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

Chain of Custody

Work Order No: 1639359

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:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	Spencer.Lo@wsp.com, Kalei.Jennings@wsp.com, Dan.Moir@wsp.com
Project Name:	Muy Wayno	Turn Around	
Project Number:	TE012920104	Routine	HA
P.O. Number:		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

ANALYSIS REQUEST

Work Order Notes

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	1.4 / 1.2	Thermometer ID				
Received Intact:	Yes	No	Correction Factor: -0.2			
Cooler Custody Seals:	Yes	No	N/A	Total Containers:		
Sample Custody Seals:	Yes	No	N/A	2		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
FS130	S	11/25/2020	1440	0.5'
FS131	S	11/25/2020	1500	0.5'

Number of Containers

TPH (EPA 8015)

BTEX (EPA 0=8021)

Chloride (EPA 300.0)

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

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr 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 for 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
		12/1/20 12:23			12/1/20 12:25

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12.01.2020 12.25.00 PM

Work Order #: 679359

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T_NM_007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

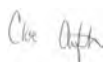
Samples received in bulk containers.

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Cloe Clifton

Date: 12.01.2020

Checklist reviewed by:



Jessica Kramer

Date: 12.04.2020

Certificate of Analysis Summary 679361



LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id: TE012920104

Date Received in Lab: Tue 12.01.2020 12:25

Contact: Dan Moir

Report Date: 12.04.2020 11:52

Project Location:

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	679361-001	679361-002	679361-003	679361-004	679361-005	679361-006
	<i>Field Id:</i>	PH01	PH01A	PH02	PH02A	PH03	PH03A
	<i>Depth:</i>	1- ft	2- ft	1- ft	2- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	11.25.2020 09:45	11.25.2020 10:00	11.25.2020 10:15	11.25.2020 10:25	11.25.2020 10:35	11.25.2020 10:45
BTEX by EPA 8021B	<i>Extracted:</i>	12.01.2020 17:00	12.01.2020 17:00	12.01.2020 17:00	12.01.2020 17:00	12.01.2020 17:00	12.01.2020 17:00
	<i>Analyzed:</i>	12.01.2020 19:54	12.01.2020 20:17	12.01.2020 20:39	12.01.2020 21:02	12.01.2020 21:24	12.01.2020 21:46
	<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	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00402 0.00402	<0.00399 0.00399	<0.00399 0.00399	<0.00402 0.00402	<0.00399 0.00399
o-Xylene		<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200
Total Xylenes		<0.001990 0.001990	<0.002010 0.002010	<0.002000 0.002000	<0.002000 0.002000	<0.002010 0.002010	<0.002000 0.002000
Total BTEX		<0.001990 0.001990	<0.002010 0.002010	<0.002000 0.002000	<0.002000 0.002000	<0.002010 0.002010	<0.002000 0.002000
Chloride by EPA 300	<i>Extracted:</i>	12.01.2020 16:13	12.01.2020 16:13	12.01.2020 16:13	12.01.2020 16:13	12.01.2020 16:13	12.01.2020 16:13
	<i>Analyzed:</i>	12.01.2020 18:41	12.01.2020 18:46	12.01.2020 18:51	12.01.2020 18:56	12.01.2020 19:12	12.01.2020 19:17
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		150 9.96	228 49.5	174 49.7	204 49.9	140 49.7	170 50.1
TPH by SW8015 Mod	<i>Extracted:</i>	12.01.2020 17:00	12.01.2020 17:00	12.01.2020 17:00	12.01.2020 17:00	12.01.2020 17:00	12.01.2020 17:00
	<i>Analyzed:</i>	12.01.2020 20:59	12.01.2020 21:19	12.01.2020 21:39	12.01.2020 21:59	12.01.2020 22:19	12.01.2020 22:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<50.0 50.0
Diesel Range Organics (DRO)		<50.0 50.0	<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<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	<49.9 49.9	<50.0 50.0
Total GRO-DRO		<50.00 50.00	<49.90 49.90	<50.00 50.00	<50.00 50.00	<49.90 49.90	<50.00 50.00
Total TPH		<50.00 50.00	<49.90 49.90	<50.00 50.00	<50.00 50.00	<49.90 49.90	<50.00 50.00

BRL - Below Reporting Limit

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



Analytical Report 679361

for

LT Environmental, Inc.

Project Manager: Dan Moir

Muy Wayno

TE012920104

12.04.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



12.04.2020

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **679361**

Muy Wayno

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) 679361. 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. 679361 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 679361****LT Environmental, Inc., Arvada, CO**

Muy Wayno

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	11.25.2020 09:45	1 ft	679361-001
PH01A	S	11.25.2020 10:00	2 ft	679361-002
PH02	S	11.25.2020 10:15	1 ft	679361-003
PH02A	S	11.25.2020 10:25	2 ft	679361-004
PH03	S	11.25.2020 10:35	1 ft	679361-005
PH03A	S	11.25.2020 10:45	2 ft	679361-006



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Muy Wayno*

Project ID: *TE012920104*
Work Order Number(s): *679361*

Report Date: *12.04.2020*
Date Received: *12.01.2020*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH01** Matrix: Soil Date Received: 12.01.2020 12:25
 Lab Sample Id: 679361-001 Date Collected: 11.25.2020 09:45 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 12.01.2020 16:13 % Moisture:
 Seq Number: 3143662 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	150	9.96	mg/kg	12.01.2020 18:41		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 12.01.2020 17:00 % Moisture:
 Seq Number: 3143655 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.01.2020 20:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.01.2020 20:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.01.2020 20:59	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	12.01.2020 20:59	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.01.2020 20:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	12.01.2020 20:59	
o-Terphenyl	84-15-1	102	%	70-135	12.01.2020 20:59	



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH01**
Lab Sample Id: 679361-001

Matrix: Soil
Date Collected: 11.25.2020 09:45

Date Received: 12.01.2020 12:25
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 12.01.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143649

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.01.2020 19:54	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.01.2020 19:54	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.01.2020 19:54	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.01.2020 19:54	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.01.2020 19:54	U	1
Total Xylenes	1330-20-7	<0.001990	0.001990	mg/kg	12.01.2020 19:54	U	1
Total BTEX		<0.001990	0.001990	mg/kg	12.01.2020 19:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	12.01.2020 19:54	
4-Bromofluorobenzene	460-00-4	119	%	70-130	12.01.2020 19:54	



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH01A** Matrix: Soil Date Received: 12.01.2020 12:25
 Lab Sample Id: 679361-002 Date Collected: 11.25.2020 10:00 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 12.01.2020 16:13 % Moisture:
 Seq Number: 3143662 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	228	49.5	mg/kg	12.01.2020 18:46		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 12.01.2020 17:00 % Moisture:
 Seq Number: 3143655 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.01.2020 21:19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.01.2020 21:19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.01.2020 21:19	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	12.01.2020 21:19	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	12.01.2020 21:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	12.01.2020 21:19	
o-Terphenyl	84-15-1	106	%	70-135	12.01.2020 21:19	



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH01A**
Lab Sample Id: 679361-002

Matrix: Soil
Date Collected: 11.25.2020 10:00

Date Received: 12.01.2020 12:25
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 12.01.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143649

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.01.2020 20:17	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.01.2020 20:17	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.01.2020 20:17	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.01.2020 20:17	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.01.2020 20:17	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	12.01.2020 20:17	U	1
Total BTEX		<0.002010	0.002010	mg/kg	12.01.2020 20:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	70-130	12.01.2020 20:17	
1,4-Difluorobenzene	540-36-3	108	%	70-130	12.01.2020 20:17	



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH02** Matrix: Soil Date Received: 12.01.2020 12:25
 Lab Sample Id: 679361-003 Date Collected: 11.25.2020 10:15 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 12.01.2020 16:13 % Moisture:
 Seq Number: 3143662 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	174	49.7	mg/kg	12.01.2020 18:51		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 12.01.2020 17:00 % Moisture:
 Seq Number: 3143655 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.01.2020 21:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.01.2020 21:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.01.2020 21:39	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	12.01.2020 21:39	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.01.2020 21:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.01.2020 21:39	
o-Terphenyl	84-15-1	113	%	70-135	12.01.2020 21:39	



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH02**
Lab Sample Id: 679361-003

Matrix: Soil
Date Collected: 11.25.2020 10:15

Date Received: 12.01.2020 12:25
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 12.01.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143649

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.01.2020 20:39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.01.2020 20:39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.01.2020 20:39	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.01.2020 20:39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.01.2020 20:39	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	12.01.2020 20:39	U	1
Total BTEX		<0.002000	0.002000	mg/kg	12.01.2020 20:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	122	%	70-130	12.01.2020 20:39	
1,4-Difluorobenzene	540-36-3	105	%	70-130	12.01.2020 20:39	



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH02A** Matrix: Soil Date Received: 12.01.2020 12:25
 Lab Sample Id: 679361-004 Date Collected: 11.25.2020 10:25 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 12.01.2020 16:13 % Moisture:
 Seq Number: 3143662 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	204	49.9	mg/kg	12.01.2020 18:56		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 12.01.2020 17:00 % Moisture:
 Seq Number: 3143655 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.01.2020 21:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.01.2020 21:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.01.2020 21:59	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	12.01.2020 21:59	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.01.2020 21:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	12.01.2020 21:59	
o-Terphenyl	84-15-1	102	%	70-135	12.01.2020 21:59	



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH02A**
Lab Sample Id: 679361-004

Matrix: Soil
Date Collected: 11.25.2020 10:25

Date Received: 12.01.2020 12:25
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 12.01.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143649

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.01.2020 21:02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.01.2020 21:02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.01.2020 21:02	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.01.2020 21:02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.01.2020 21:02	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	12.01.2020 21:02	U	1
Total BTEX		<0.002000	0.002000	mg/kg	12.01.2020 21:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	12.01.2020 21:02	
1,4-Difluorobenzene	540-36-3	104	%	70-130	12.01.2020 21:02	



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH03** Matrix: Soil Date Received: 12.01.2020 12:25
 Lab Sample Id: 679361-005 Date Collected: 11.25.2020 10:35 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 12.01.2020 16:13 % Moisture:
 Seq Number: 3143662 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	140	49.7	mg/kg	12.01.2020 19:12		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 12.01.2020 17:00 % Moisture:
 Seq Number: 3143655 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.01.2020 22:19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.01.2020 22:19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.01.2020 22:19	U	1
Total GRO-DRO	PHC628	<49.90	49.90	mg/kg	12.01.2020 22:19	U	1
Total TPH	PHC635	<49.90	49.90	mg/kg	12.01.2020 22:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.01.2020 22:19	
o-Terphenyl	84-15-1	115	%	70-135	12.01.2020 22:19	



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH03**
Lab Sample Id: 679361-005

Matrix: Soil
Date Collected: 11.25.2020 10:35

Date Received: 12.01.2020 12:25
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 12.01.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143649

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.01.2020 21:24	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.01.2020 21:24	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.01.2020 21:24	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.01.2020 21:24	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.01.2020 21:24	U	1
Total Xylenes	1330-20-7	<0.002010	0.002010	mg/kg	12.01.2020 21:24	U	1
Total BTEX		<0.002010	0.002010	mg/kg	12.01.2020 21:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121	%	70-130	12.01.2020 21:24	
1,4-Difluorobenzene	540-36-3	105	%	70-130	12.01.2020 21:24	



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH03A** Matrix: Soil Date Received: 12.01.2020 12:25
 Lab Sample Id: 679361-006 Date Collected: 11.25.2020 10:45 Sample Depth: 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB
 Analyst: MAB Date Prep: 12.01.2020 16:13 % Moisture:
 Seq Number: 3143662 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	170	50.1	mg/kg	12.01.2020 19:17		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: MAB
 Analyst: CAC Date Prep: 12.01.2020 17:00 % Moisture:
 Seq Number: 3143655 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.01.2020 22:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.01.2020 22:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.01.2020 22:39	U	1
Total GRO-DRO	PHC628	<50.00	50.00	mg/kg	12.01.2020 22:39	U	1
Total TPH	PHC635	<50.00	50.00	mg/kg	12.01.2020 22:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	12.01.2020 22:39	
o-Terphenyl	84-15-1	101	%	70-135	12.01.2020 22:39	



Certificate of Analytical Results 679361

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id: **PH03A**
Lab Sample Id: 679361-006

Matrix: Soil
Date Collected: 11.25.2020 10:45

Date Received: 12.01.2020 12:25
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

Analyst: MAB

Date Prep: 12.01.2020 17:00

% Moisture:
Basis: Wet Weight

Seq Number: 3143649

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.01.2020 21:46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.01.2020 21:46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.01.2020 21:46	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.01.2020 21:46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.01.2020 21:46	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/kg	12.01.2020 21:46	U	1
Total BTEX		<0.002000	0.002000	mg/kg	12.01.2020 21:46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	119	%	70-130	12.01.2020 21:46		
1,4-Difluorobenzene	540-36-3	106	%	70-130	12.01.2020 21:46		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **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.
Muy Wayno

Analytical Method: Chloride by EPA 300

Seq Number: 3143662

MB Sample Id: 7716201-1-BLK

Matrix: Solid

LCS Sample Id: 7716201-1-BKS

Prep Method: E300P

Date Prep: 12.01.2020

LCSD Sample Id: 7716201-1-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	238	95	239	96	90-110	0	20	mg/kg	12.01.2020 18:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3143662

Parent Sample Id: 679359-001

Matrix: Soil

MS Sample Id: 679359-001 S

Prep Method: E300P

Date Prep: 12.01.2020

MSD Sample Id: 679359-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	485	200	674	95	674	94	90-110	0	20	mg/kg	12.01.2020 18:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3143662

Parent Sample Id: 679363-003

Matrix: Soil

MS Sample Id: 679363-003 S

Prep Method: E300P

Date Prep: 12.01.2020

MSD Sample Id: 679363-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3950	200	4170	110	4150	100	90-110	0	20	mg/kg	12.01.2020 19:38	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143655

MB Sample Id: 7716226-1-BLK

Matrix: Solid

LCS Sample Id: 7716226-1-BKS

Prep Method: SW8015P

Date Prep: 12.01.2020

LCSD Sample Id: 7716226-1-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	954	95	890	89	70-135	7	35	mg/kg	12.01.2020 18:58	
Diesel Range Organics (DRO)	<50.0	1000	963	96	1140	114	70-135	17	35	mg/kg	12.01.2020 18:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	100		116		121		70-135	%	12.01.2020 18:58
o-Terphenyl	100		95		112		70-135	%	12.01.2020 18:58

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143655

Matrix: Solid

MB Sample Id: 7716226-1-BLK

Prep Method: SW8015P

Date Prep: 12.01.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.01.2020 18:38	

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

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

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

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



LT Environmental, Inc.

Muy Wayno

Analytical Method: TPH by SW8015 Mod

Seq Number: 3143655

Parent Sample Id: 679359-001

Matrix: Soil

MS Sample Id: 679359-001 S

Prep Method: SW8015P

Date Prep: 12.01.2020

MSD Sample Id: 679359-001 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	1160	115	1080	108	70-135	7	35	mg/kg	12.01.2020 19:58	
Diesel Range Organics (DRO)	<50.3	1010	1060	105	1160	116	70-135	9	35	mg/kg	12.01.2020 19:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		105		70-135	%	12.01.2020 19:58
o-Terphenyl	108		106		70-135	%	12.01.2020 19:58

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143649

MB Sample Id: 7716203-1-BLK

Matrix: Solid

LCS Sample Id: 7716203-1-BKS

Prep Method: SW5035A

Date Prep: 12.01.2020

LCSD Sample Id: 7716203-1-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	0.0953	95	0.0933	93	70-130	2	35	mg/kg	12.01.2020 12:46	
Toluene	<0.00200	0.100	0.0921	92	0.0885	89	70-130	4	35	mg/kg	12.01.2020 12:46	
Ethylbenzene	<0.00200	0.100	0.0950	95	0.0910	91	71-129	4	35	mg/kg	12.01.2020 12:46	
m,p-Xylenes	<0.00400	0.200	0.197	99	0.189	95	70-135	4	35	mg/kg	12.01.2020 12:46	
o-Xylene	<0.00200	0.100	0.0984	98	0.0939	94	71-133	5	35	mg/kg	12.01.2020 12:46	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		97		100		70-130	%	12.01.2020 12:46
4-Bromofluorobenzene	115		109		107		70-130	%	12.01.2020 12:46

Analytical Method: BTEX by EPA 8021B

Seq Number: 3143649

Parent Sample Id: 679158-041

Matrix: Soil

MS Sample Id: 679158-041 S

Prep Method: SW5035A

Date Prep: 12.01.2020

MSD Sample Id: 679158-041 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	0.106	106	0.101	101	70-130	5	35	mg/kg	12.01.2020 13:31	
Toluene	<0.00200	0.100	0.0999	100	0.0935	94	70-130	7	35	mg/kg	12.01.2020 13:31	
Ethylbenzene	<0.00200	0.100	0.102	102	0.0992	99	71-129	3	35	mg/kg	12.01.2020 13:31	
m,p-Xylenes	<0.00401	0.200	0.211	106	0.201	100	70-135	5	35	mg/kg	12.01.2020 13:31	
o-Xylene	<0.00200	0.100	0.104	104	0.0974	97	71-133	7	35	mg/kg	12.01.2020 13:31	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		97		70-130	%	12.01.2020 13:31
4-Bromofluorobenzene	116		110		70-130	%	12.01.2020 13:31

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

Chain of Custody

Work Order No: 1679361

www.xenco.com Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	Spencer.Lo@wsp.com; Kate.Jennings@wsp.com; Dan.Moir@wsp.com
Project Name:	Muy Wayno	Turn Around	
Project Number:	TE012920104	Routine	☒
P.O. Number:		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT		Temp Blank:	Yes	No	Wet Ice:	Yes	No	
Temperature (°C):	1.4/1.2	Thermometer ID	TMM007					
Received Intact:	Yes	No						
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:	-0.2			
Sample Custody Seals:	Yes	No	N/A	Total Containers:	6			

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST																Sample Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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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
		12/1/20 12:23			12/1/20 12:25

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12.01.2020 12.25.00 PM

Work Order #: 679361

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T_NM_007

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



Cloe Clifton

Date: 12.01.2020

Checklist reviewed by:

Date: 12.01.2020



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

December 21, 2020

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

**RE: Closure Request
Muy Wayno
Incident Number NRM2019525477
Eddy County, New Mexico**

To Whom it May Concern:

WSP USA Inc. (WSP) (formerly LT Environmental, Inc.), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment, excavation, and soil sampling activities at the Muy Wayno (Site) in Unit F, Section 7, Township 25 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, excavation, and soil sample activities was to address impacts to soil following a release of produced water at the Site. Based on excavation activities and soil sample laboratory analytical results, XTO is submitting this Closure Request and requesting no further action (NFA) for Incident Number NRM2019525477.

RELEASE BACKGROUND

On June 24, 2020, fluid was released from a lay-flat line feeding the Muy Wayno Frac Pond from the recycle plant. Approximately 129.7 barrels (bbls) of produced water were released onto the surface of the well pad and into the pasture area west of the pad. No fluids were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) on July 1, 2020 and was assigned Incident Number NRM2019525477.

SITE CHARACTERIZATION

WSP characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is United States Geological Survey (USGS) well 320857103553301, located approximately 0.24 miles northwest of the Site. The groundwater well was most recently measured in January 1998 with a reported depth to groundwater of 264 feet bgs and a total depth of 385 feet bgs. Ground surface elevation at the groundwater well location is 3,169 feet above mean sea level (amsl), which is approximately 3 feet lower in



elevation than the Site. All wells used for depth to groundwater determination are depicted on Figure 1 and the associated referenced well records are included in Attachment 1.

The closest continuously flowing or significant watercourse to the Site is an intermittent stream, located approximately 330 feet south 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 not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

CLOSURE CRITERIA

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

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

A reclamation closure criteria of 600 mg/kg chloride and 100 mg/kg TPH was applied to the top four feet of the pasture area that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top four feet of areas that will be reclaimed following remediation.

SITE ASSESSMENT ACTIVITIES AND ANALYTICAL RESULTS

On July 20, 2020, WSP personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. WSP personnel collected seven preliminary soil samples (SS01 through SS07) within and around the release extent along the release flow path, from a depth of approximately 0.5 feet bgs to assess the lateral extent of the impacted soil. Soil was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

The preliminary soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were 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.

Laboratory analytical results for preliminary soil samples SS01, SS03, SS05, and SS06 indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results for preliminary soil samples SS02, SS04, and SS07 indicated that chloride concentrations exceeded the Closure Criteria and/or the reclamation standards. Based on visible staining in the release area, elevated field screening results, and laboratory analytical results for the preliminary soil samples, delineation and excavation activities were warranted.

EXCAVATION ACTIVITIES

Fluids were released onto the frac pond embankment and into the surrounding pasture. A Right-of-Entry (ROE) Permit was submitted to the State Land Office (SLO) on August 18, 2020. The executed permit was received September 20, 2020.

Between October 20, 2020 and November 25, 2020, WSP personnel returned to the Site to oversee excavation activities as indicated by visual observations, field screening activities, and laboratory analytical results for the preliminary soil samples. Excavation activities were initiated on the western extent of the release and proceeded east towards the frac pond. Due to the size of the release, the excavations are described as three areas in this report and presented on four corresponding excavation figures. The three excavation areas described are: the western portion of the release extent in the pasture (Figure 3A), the central portion of the release extent in the pasture (Figure 3B), and the eastern portion of the release extent in the pasture including the western edge of the well pad (Figures 3C and 3D). Below is a summary of the excavation activities. Photographic documentation is included in Attachment 2.

Western Pasture Excavation

The western pasture area was excavated utilizing a track-mounted backhoe and transport vehicle. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. The western excavation encompassed an area approximately 4,870 square feet in size. Following removal of impacted soil, WSP collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS22, FS42, and FS43 were collected from the floor of the excavation from a depth of 4 feet bgs. Composite sidewall soil samples SW01 through SW28, SW59, SW60, and SW71 were collected from the sidewalls of the



excavation at depths ranging from ground surface to 4 feet bgs. The excavation soil samples were collected, handled, and analyzed as described above.

Laboratory analytical results for floor samples FS01 through FS22, FS42, and FS43 and sidewall samples SW01 through SW28 and SW60 indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and compliant with reclamation standard in samples collected from the top four feet of the subsurface. Laboratory analytical results indicated that chloride concentrations exceeded the reclamation criteria in sidewall sample SW59. Additional soil was removed from the area around sidewall sample SW59 and subsequent sidewall sample SW71 was compliant. The excavation extent and excavation soil sample locations are presented on Figure 3A.

Central Pasture Excavation

The central pasture area was excavated to depths ranging from 3 feet to 4 feet bgs utilizing a track-mounted backhoe and transport vehicle. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. The central pasture excavation encompassed an area approximately 3,863 square feet in size. Following removal of impacted soil, WSP collected 5-point composite soil samples from the sidewalls and floor of the excavations. Composite soil samples FS23 through FS40 and FS45 were collected from the floor of the excavation from depths of 3 feet or 4 feet bgs. Composite sidewall soil samples SW29 through SW56, and SW61 were collected from the sidewalls of the excavation at depths ranging from the ground surface to 4 feet bgs. The excavation soil samples were collected, handled, and analyzed as described above.

Laboratory analytical results for floor samples FS23 through FS40, FS44, and FS45 and sidewall samples SW29 through SW39, SW41, SW43, and SW45 through SW56 indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and compliant with reclamation criteria in samples collected from the top four feet of the subsurface. Laboratory analytical results indicated that chloride concentrations exceeded the reclamation criteria in sidewall samples SW40, SW42, and SW44. Additional soil was removed from the area around sidewall samples SW40, SW42, and SW44 and subsequent sidewall samples SW61 through SW63 were compliant. The excavation extent and excavation soil sample locations are presented on Figure 3B.

Eastern Pasture and Western Well Pad Excavations

The eastern pasture and western well pad areas were excavated to depths ranging from 0.5 feet to 4 feet bgs utilizing a track-mounted backhoe and transport vehicle. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. The eastern pasture and western well pad excavations encompassed an area approximately 17,122 square feet in size.



Following removal of impacted soil, WSP collected 5-point composite soil samples from the sidewalls and floors of the excavations. Composite soil samples FS41 and FS46 through FS129 were collected from the floor of the excavation from depths ranging from 3 feet to 4 feet bgs. Composite sidewall soil samples SW57, SW58, SW64 through SW70, and SW72 through SW92 were collected from the sidewalls of the excavations at depths ranging from ground surface to 4 feet bgs. After completing a minor scrape on the well pad to remove visible staining, two additional soil samples (FS130 and FS131) were collected at a depth of approximately 0.5 feet bgs. The excavation soil samples were collected, handled, and analyzed as described above.

Laboratory analytical results for floor samples FS41 and FS46 through FS131 and sidewall samples SW57, SW58, SW64 through SW70, and SW72 through SW92 indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and compliant with reclamation criteria in samples collected in the pasture from the top four feet of the subsurface. The excavation extents and excavation soil sample locations are presented on Figures 3C and 3D.

DELINEATION SOIL SAMPLING ACTIVITIES

On November 25, 2020, in coordination with excavation activities, WSP oversaw delineation activities on the well pad west of the frac pond. Three potholes (PH01 through PH03) were advanced via trackhoe to a depth of 2 feet bgs assess the lateral and vertical extent of the release on the well pad. Delineation soil samples were collected from each pothole at depths of 1 foot and 2 feet bgs. Soil from the potholes was field screened for volatile aromatic hydrocarbons and chloride utilizing PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the potholes were logged on lithologic/soil sampling logs, which are included in Attachment 3. The pothole and delineation soil sample locations are depicted on Figure 4.

Laboratory analytical results for the delineation soil samples collected from potholes PH01 through PH03 indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and confirmed that all impacted soil was successfully excavated. Laboratory analytical results are presented on Table 1 and the full laboratory reports are included in Attachment 4.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the June 24, 2020 release of produced water. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, soil samples collected in the pasture from the top four feet of the subsurface were compliant with the reclamation criteria. Based on the soil sample analytical results, no further remediation was



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required. XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. The disturbed pasture area will be re-seeded with an approved BLM seed mixture.

Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater has been determined to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. WSP and XTO believe these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests no further action for Incident Number NRM2019525477.

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

Sincerely,

WSP USA Inc.

A handwritten signature in black ink, reading 'Elizabeth Naka'.

Elizabeth Naka
Assistant Consultant, Environmental Scientist

A handwritten signature in black ink, reading 'Ashley L. Ager'.

Ashley L. Ager, P.G.
Managing Director, Geologist

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

Attachments:

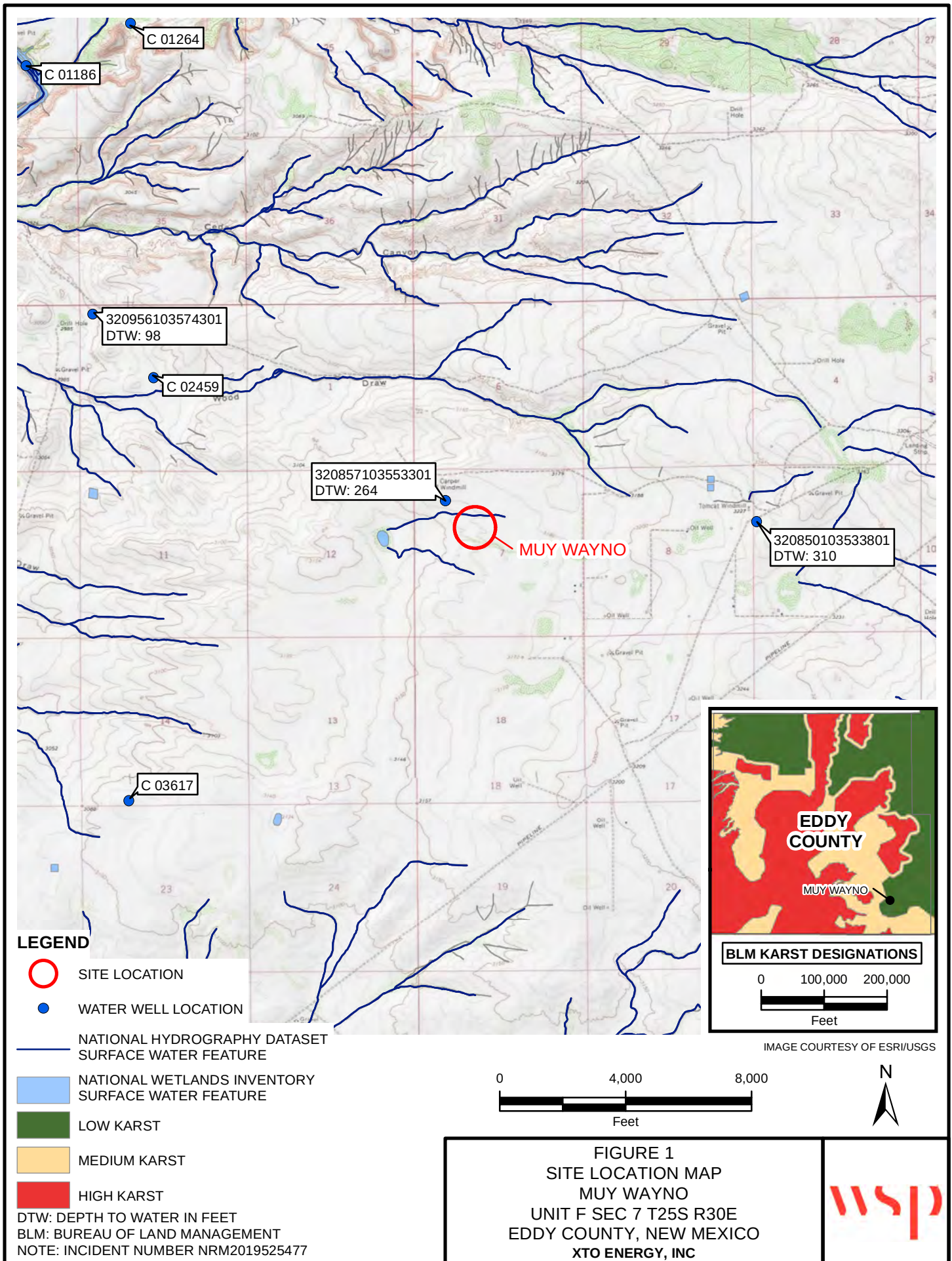
Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3A	Excavation Soil Sample Locations - Western Pasture Excavation
Figure 3B	Excavation Soil Sample Locations - Central Pasture Excavation
Figure 3C	Excavation Soil Sample Locations - Eastern Pasture and Well Pad Excavation (Southern Area)
Figure 3D	Excavation Soil Sample Locations - Eastern Pasture and Well Pad Excavation (Northern Area)
Figure 4	Delineation Soil Sample Locations
Table 1	Soil Analytical Results



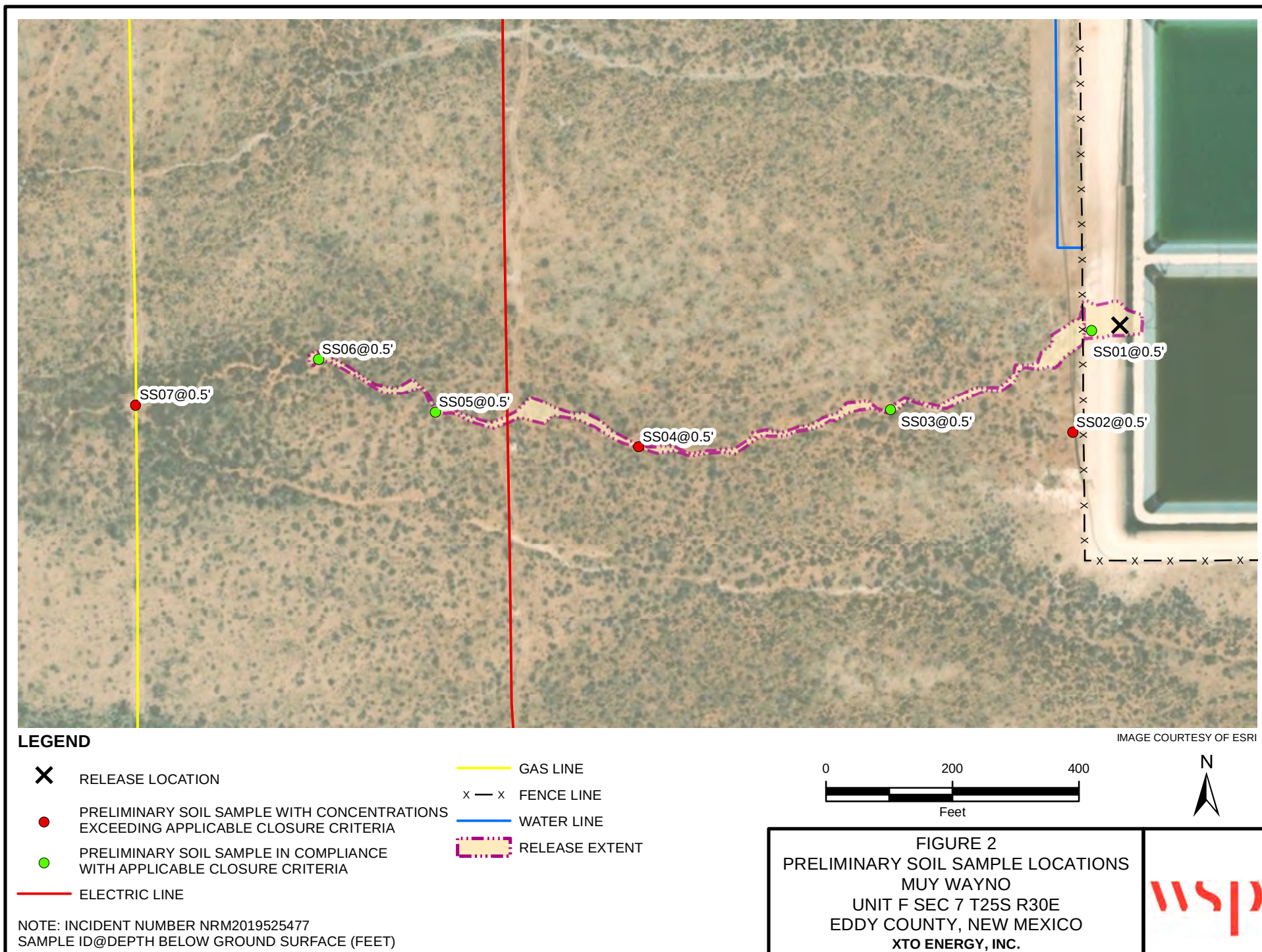
District II
Page 7

Attachment 1 Referenced Well Records
Attachment 2 Photographic Log
Attachment 3 Lithologic/Sampling Logs
Attachment 4 Laboratory Analytical Reports

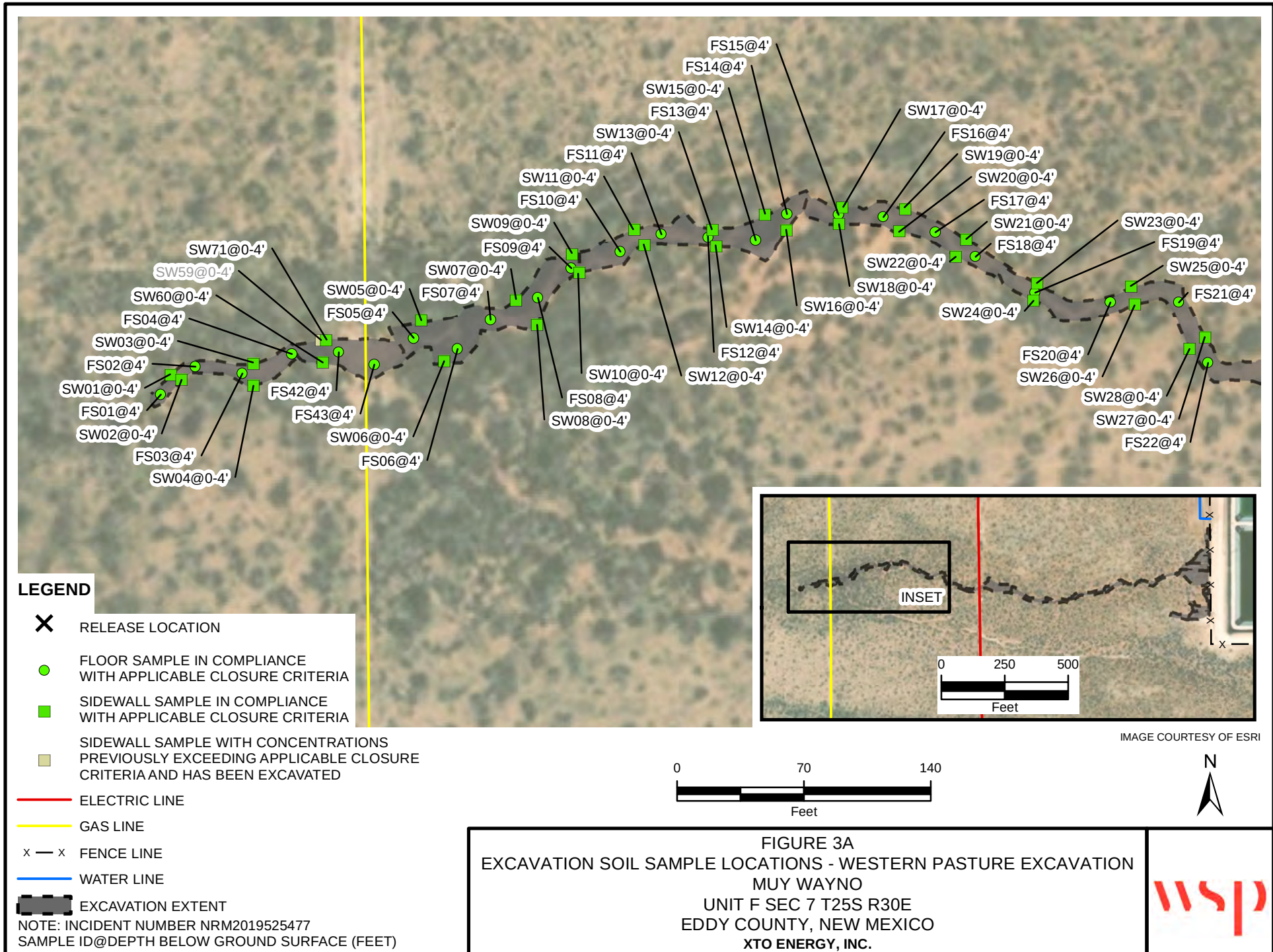
FIGURES

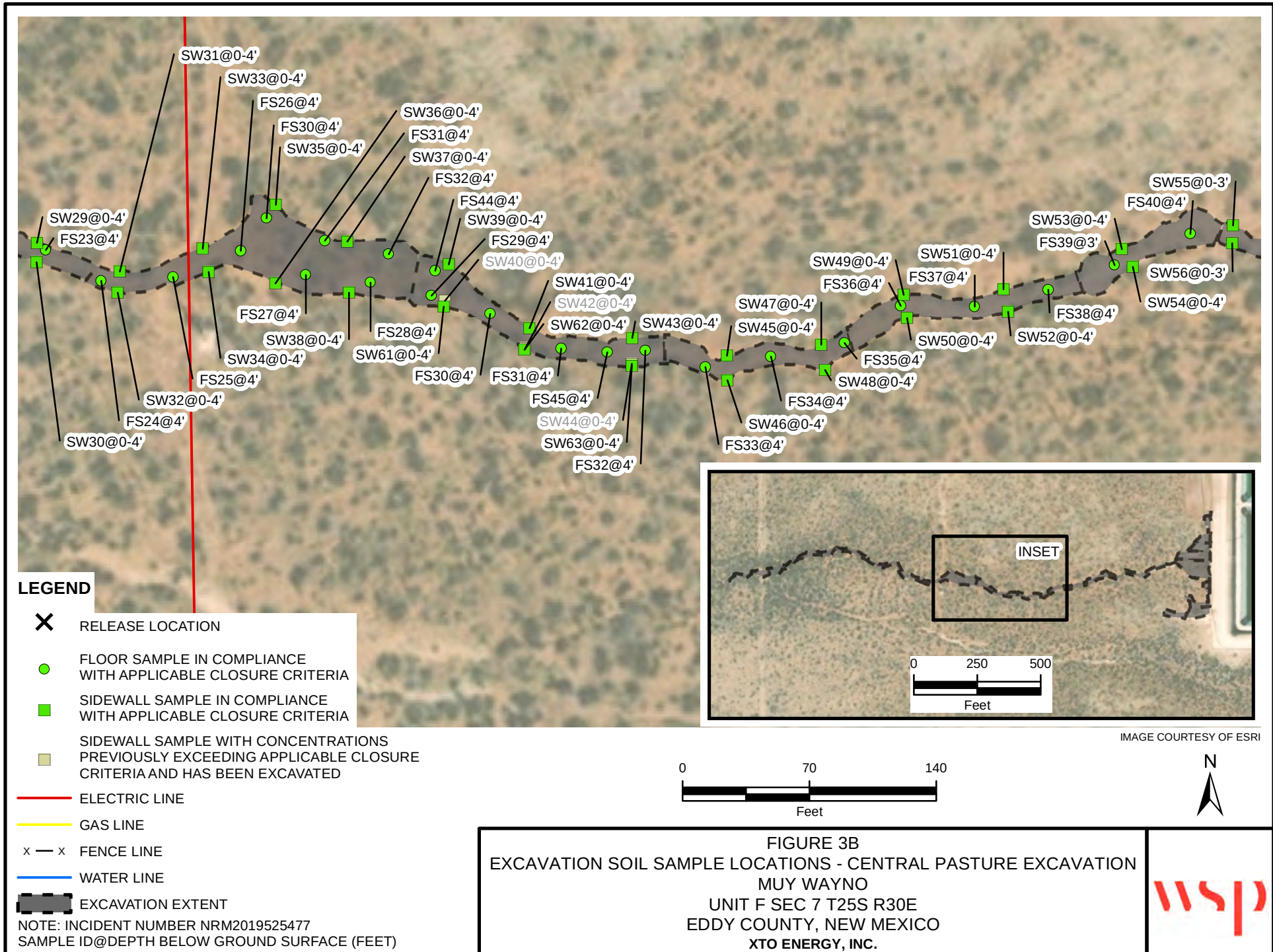


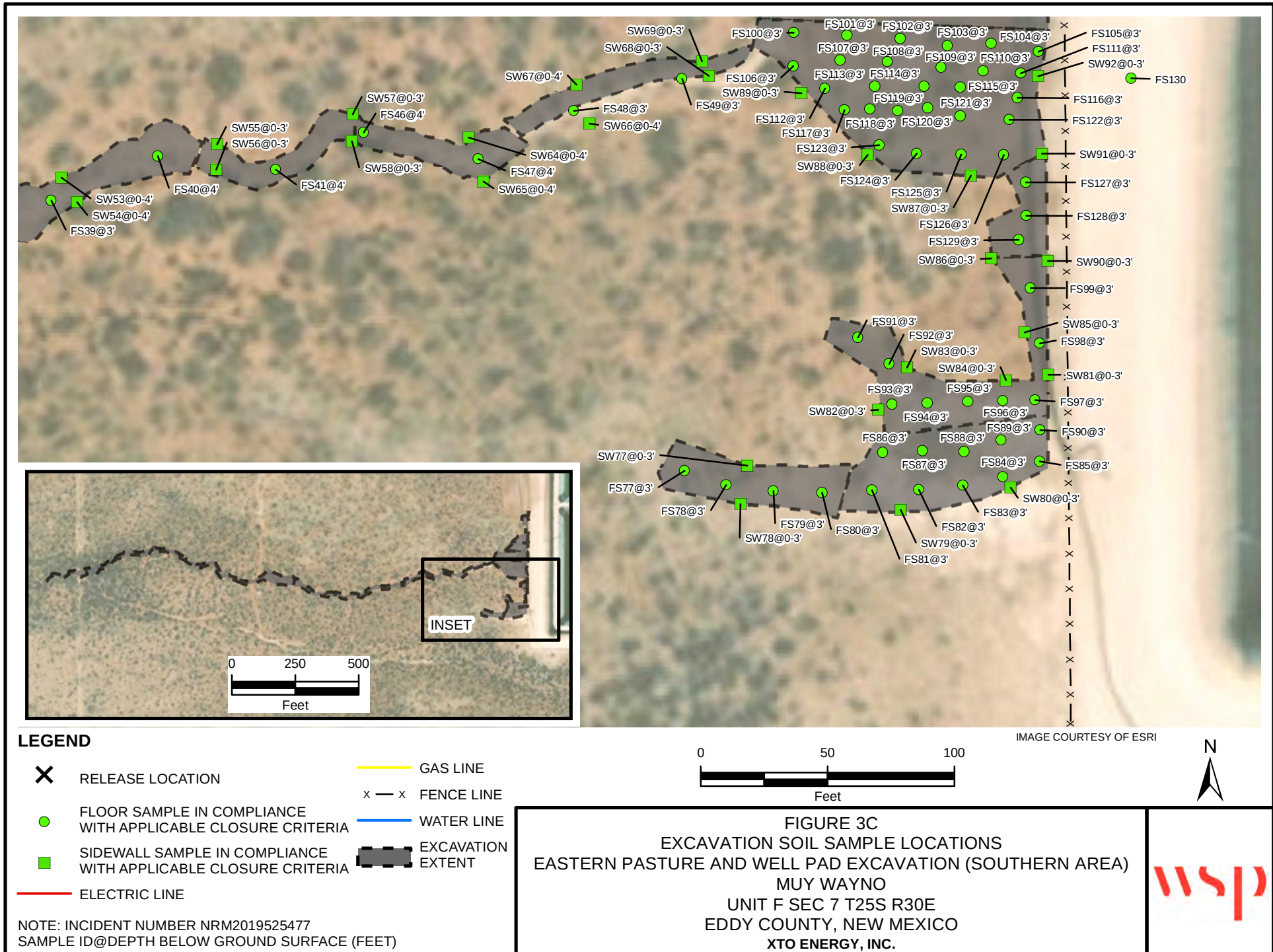
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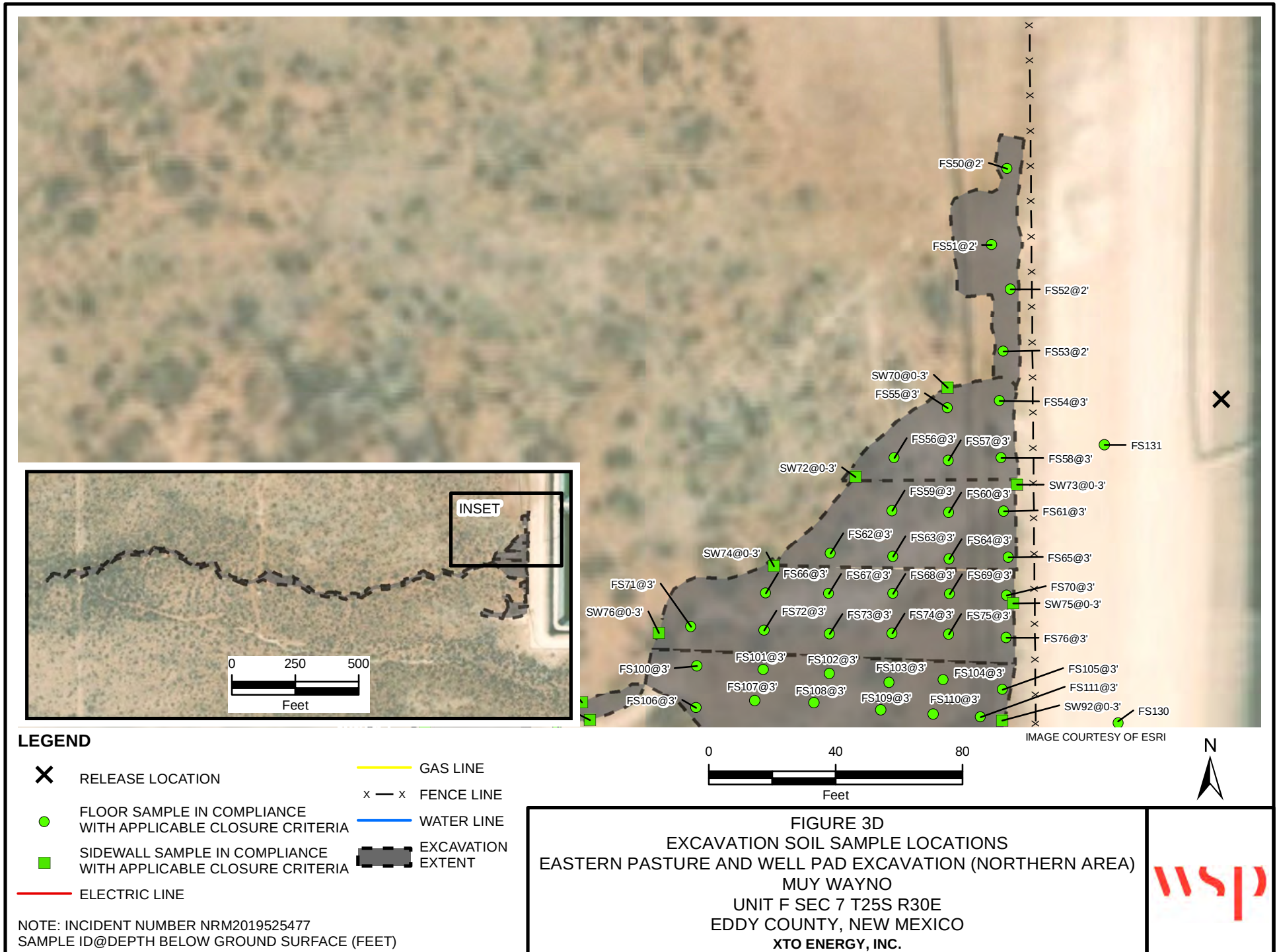


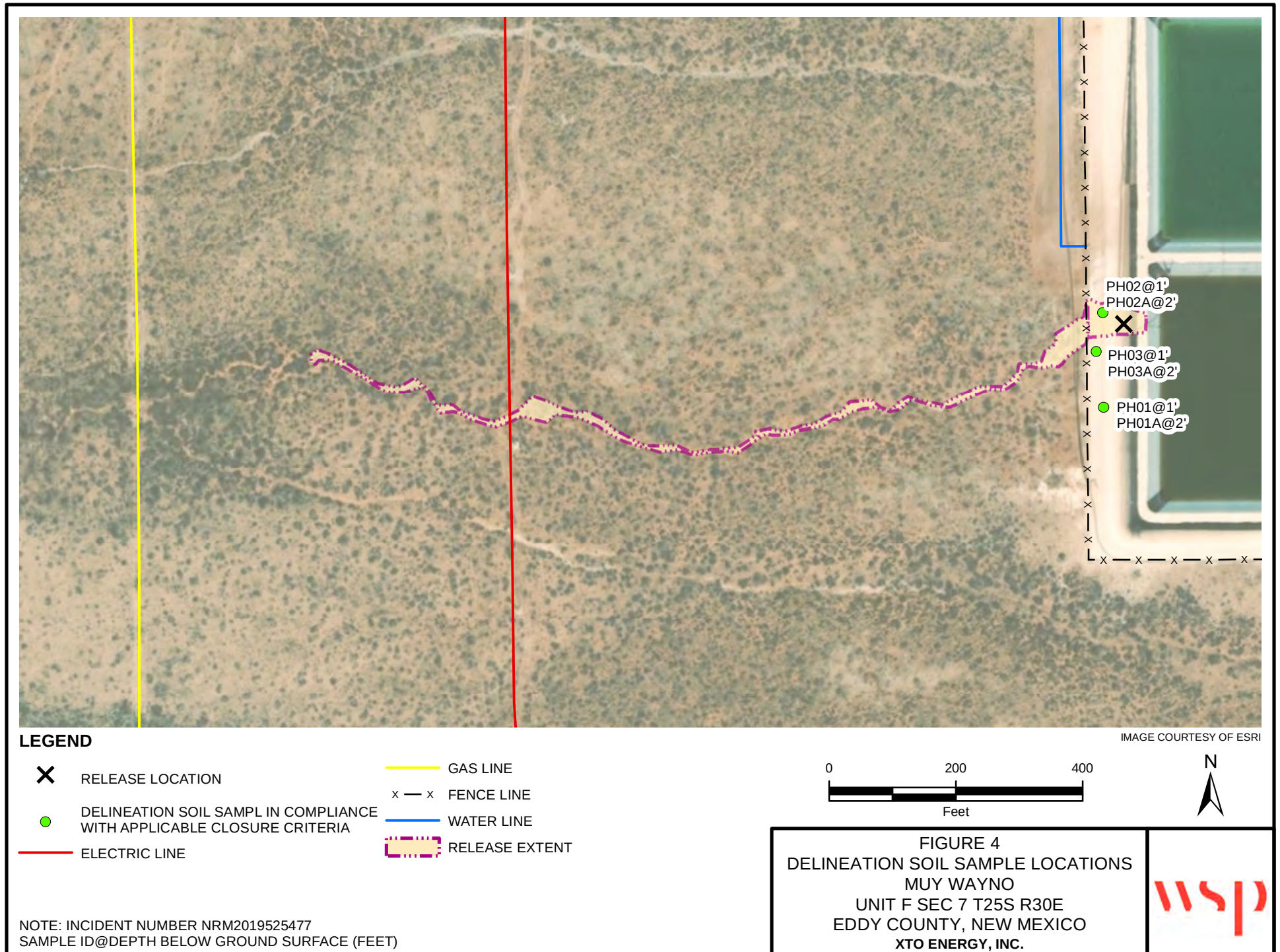
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TABLES

Table 1

Soil Analytical Results
Muy Wayno
Incident Number NRM2019525477
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Surface Samples										
SS01	07/20/2020	0.5	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	183
SS02	07/20/2020	0.5	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	649*
SS03	07/20/2020	0.5	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	36.5*
SS04	07/20/2020	0.5	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	30,000
SS05	07/20/2020	0.5	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	376*
SS06	07/20/2020	0.5	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	508*
SS07	07/20/2020	0.5	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	14,900*
Excavation Floor Samples										
FS01	10/20/2020	4	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	4,260
FS02	10/20/2020	4	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	3,480
FS03	10/20/2020	4	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	3,090
FS04	10/20/2020	4	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	2,890
FS05	10/21/2020	4	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	4,980
FS06	10/21/2020	4	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	4,060
FS07	10/21/2020	4	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	5,910
FS08	10/21/2020	4	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	4,030
FS09	10/21/2020	4	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	3,860
FS10	10/22/2020	4	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	2,870
FS11	10/22/2020	4	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	3,720
FS12	10/22/2020	4	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	2,860
FS13	10/22/2020	4	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	2,700

Table 1

Soil Analytical Results
Muy Wayno
Incident Number NRM2019525477
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
FS14	10/22/2020	4	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	5,230
FS15	10/26/2020	4	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	4,660
FS16	10/26/2020	4	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	3,090
FS17	10/26/2020	4	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	2,310
FS18	10/26/2020	4	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	4,090
FS19	10/29/2020	4	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	2,640
FS20	10/29/2020	4	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	2,480
FS21	10/29/2020	4	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	2,150
FS22	10/29/2020	4	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	3,370
FS23	10/29/2020	4	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	2,160
FS24	10/30/2020	4	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	3,840
FS25	10/30/2020	4	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	860
FS26	10/30/2020	4	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	2,590
FS27	10/30/2020	4	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	3,500
FS28	10/30/2020	4	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
FS29	10/30/2020	4	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	2,140
FS30	10/30/2020	4	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	5,130
FS30	11/02/2020	4	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	4,020
FS31	10/30/2020	4	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	4,360
FS31	11/02/2020	4	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	2,130
FS32	10/30/2020	4	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	2,640

Table 1

Soil Analytical Results
Muy Wayno
Incident Number NRM2019525477
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
FS32	11/02/2020	4	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	2,070
FS33	11/03/2020	4	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	1,250
FS34	11/03/2020	4	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	670
FS35	11/03/2020	4	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	680
FS36	11/04/2020	4	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	996
FS37	11/04/2020	4	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	664
FS38	11/04/2020	4	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	105
FS39	11/05/2020	3	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	147*
FS40	11/09/2020	4	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	197
FS41	11/09/2020	4	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	546
FS42	11/09/2020	4	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	763
FS43	11/09/2020	4	<0.00199	<0.00199	<50.3	<50.3	<50.3	<50.3	<50.3	767
FS44	11/09/2020	4	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	5,700
FS45	11/09/2020	4	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	1,750
FS46	11/10/2020	4	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	1,010
FS47	11/10/2020	4	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	29.5
FS48	11/10/2020	3	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	20.0*
FS49	11/11/2020	3	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	76.9*
FS50	11/12/2020	2	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	65.9*
FS51	11/12/2020	2	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	114*
FS52	11/12/2020	2	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	99.2*

Table 1

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Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
FS53	11/12/2020	2	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	65.1*
FS54	11/12/2020	3	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	344*
FS55	11/12/2020	3	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	224*
FS56	11/16/2020	3	<0.00200	<0.002000	<50.2	<50.2	<50.2	<50.20	<50.20	99.6*
FS57	11/16/2020	3	<0.00202	<0.002020	<50.1	<50.1	<50.1	<50.10	<50.10	88.4*
FS58	11/16/2020	3	<0.00202	<0.002020	<50.2	<50.2	<50.2	<50.20	<50.20	236*
FS59	11/17/2020	3	<0.00202	<0.002020	<50.0	<50.0	<50.0	<50.00	<50.00	281*
FS60	11/17/2020	3	<0.00200	<0.002000	<49.8	<49.8	<49.8	<49.80	<49.80	473*
FS61	11/17/2020	3	<0.00199	<0.001990	<50.1	<50.1	<50.1	<50.10	<50.10	174*
FS62	11/17/2020	3	<0.00199	<0.001990	<50.1	<50.1	<50.1	<50.10	<50.10	99.8*
FS63	11/17/2020	3	<0.00200	<0.002000	<50.2	<50.2	<50.2	<50.20	<50.20	285*
FS64	11/17/2020	3	<0.00199	<0.001990	<50.2	<50.2	<50.2	<50.20	<50.20	188*
FS65	11/17/2020	3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	77.2*
FS66	11/18/2020	3	<0.00199	<0.001990	<50.1	<50.1	<50.1	<50.10	<50.10	117*
FS67	11/18/2020	3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	130*
FS68	11/18/2020	3	<0.00198	<0.001980	<49.9	<49.9	<49.9	<49.90	<49.90	341*
FS69	11/18/2020	3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	108*
FS70	11/18/2020	3	<0.00200	<0.002000	<49.9	<49.9	<49.9	<49.90	<49.90	31.5*
FS71	11/18/2020	3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	230*
FS72	11/18/2020	3	<0.00202	<0.002020	<50.2	<50.2	<50.2	<50.20	<50.20	44.6*
FS73	11/18/2020	3	<0.00202	<0.002020	<50.1	<50.1	<50.1	<50.10	<50.10	327*

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NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
FS74	11/18/2020	3	<0.00202	<0.002020	<50.0	<50.0	<50.0	<50.00	<50.00	130*
FS75	11/18/2020	3	<0.00202	<0.002020	<49.9	<49.9	<49.9	<49.90	<49.90	34.6*
FS76	11/18/2020	3	<0.00202	<0.002020	<49.8	<49.8	<49.8	<49.80	<49.80	61.2*
FS77	11/19/2020	3	<0.00200	<0.002000	<49.8	<49.8	<49.8	<49.80	<49.80	20.6*
FS78	11/19/2020	3	<0.00201	<0.002010	<49.9	<49.9	<49.9	<49.90	<49.90	17.5*
FS79	11/19/2020	3	<0.00198	<0.001980	<49.8	<49.8	<49.8	<49.80	<49.80	30.2*
FS80	11/19/2020	3	<0.00200	<0.002000	<49.8	<49.8	<49.8	<49.80	<49.80	17.9*
FS81	11/20/2020	3	<0.00200	<0.002000	<50.1	<50.1	<50.1	<50.10	<50.10	46.2*
FS82	11/20/2020	3	<0.00198	<0.001980	<49.8	<49.8	<49.8	<49.80	<49.80	67.2*
FS83	11/20/2020	3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	72.7*
FS84	11/20/2020	3	<0.00200	<0.002000	<49.9	<49.9	<49.9	<49.90	<49.90	69.9*
FS85	11/20/2020	3	<0.00199	<0.001990	<50.2	<50.2	<50.2	<50.20	<50.20	23.8*
FS86	11/20/2020	3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	40.1*
FS87	11/20/2020	3	<0.00198	<0.001980	<50.2	<50.2	<50.2	<50.20	<50.20	22.4*
FS88	11/20/2020	3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	51.0*
FS89	11/20/2020	3	<0.00200	<0.002000	<50.2	<50.2	<50.2	<50.20	<50.20	29.9*
FS90	11/20/2020	3	<0.00202	<0.002020	<50.0	<50.0	<50.0	<50.00	<50.00	40.2*
FS91	11/23/2020	3	<0.00200	<0.002000	<49.8	<49.8	<49.8	<49.80	<49.80	13.8*
FS92	11/23/2020	3	<0.00201	<0.002010	<49.9	<49.9	<49.9	<49.90	<49.90	51.2*
FS93	11/23/2020	3	<0.00201	<0.002010	<50.1	<50.1	<50.1	<50.10	<50.10	<10.0*
FS94	11/23/2020	3	<0.00201	<0.002010	<49.9	<49.9	<49.9	<49.90	<49.90	33.6*

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NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
FS95	11/23/2020	3	<0.00199	<0.001990	<50.2	<50.2	<50.2	<50.20	<50.20	18.5*
FS96	11/23/2020	3	<0.00199	<0.001990	<49.8	<49.8	<49.8	<49.80	<49.80	20.5*
FS97	11/23/2020	3	<0.00202	<0.002020	<50.0	<50.0	<50.0	<50.00	<50.00	19.9*
FS98	11/23/2020	3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	13.0*
FS99	11/23/2020	3	<0.00200	<0.002000	<50.2	<50.2	<50.2	<50.20	<50.20	15.4*
FS100	11/24/2020	3	<0.00201	<0.002010	<50.3	<50.3	<50.3	<50.30	<50.30	252*
FS101	11/24/2020	3	<0.00198	<0.001980	<49.9	<49.9	<49.9	<49.90	<49.90	297*
FS102	11/24/2020	3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	270*
FS103	11/24/2020	3	<0.00199	<0.001990	<49.8	<49.8	<49.8	<49.80	<49.80	240*
FS104	11/24/2020	3	<0.00200	<0.002000	<50.3	<50.3	<50.3	<50.30	<50.30	299*
FS105	11/24/2020	3	<0.00199	<0.001990	<49.8	<49.8	<49.8	<49.80	<49.80	312*
FS106	11/24/2020	3	<0.00201	<0.002010	<49.8	<49.8	<49.8	<49.80	<49.80	29.9*
FS107	11/24/2020	3	<0.00202	<0.002020	<50.1	<50.1	<50.1	<50.10	<50.10	31.9*
FS108	11/24/2020	3	<0.00201	<0.002010	<49.9	<49.9	<49.9	<49.90	<49.90	26.9*
FS109	11/24/2020	3	<0.00198	<0.001980	<50.1	<50.1	<50.1	<50.10	<50.10	30.2*
FS110	11/24/2020	3	<0.00200	<0.002000	<49.8	<49.8	<49.8	<49.80	<49.80	33.3*
FS111	11/24/2020	3	<0.00200	<0.002000	<50.2	<50.2	<50.2	<50.20	<50.20	30.2*
FS112	11/24/2020	3	<0.00198	<0.001980	<49.9	<49.9	<49.9	<49.90	<49.90	13.2*
FS113	11/24/2020	3	<0.00199	<0.001990	<49.8	<49.8	<49.8	<49.80	<49.80	13.2*
FS114	11/24/2020	3	<0.00202	<0.002020	<50.1	<50.1	<50.1	<50.10	<50.10	33.2*
FS115	11/24/2020	3	<0.00201	<0.002010	<50.2	<50.2	<50.2	<50.20	<50.20	13.1*

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NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
FS116	11/24/2020	3	<0.00199	<0.001990	<50.1	<50.1	<50.1	<50.10	<50.10	15.5*
FS117	11/24/2020	3	<0.00202	<0.002020	<49.8	<49.8	<49.8	<49.80	<49.80	12.9*
FS118	11/24/2020	3	<0.00199	<0.001990	<49.8	<49.8	<49.8	<49.80	<49.80	21.2*
FS119	11/24/2020	3	<0.00199	<0.001990	<49.8	<49.8	<49.8	<49.80	<49.80	33.0*
FS120	11/24/2020	3	<0.00198	<0.001980	<50.0	<50.0	<50.0	<50.00	<50.00	32.0*
FS121	11/24/2020	3	<0.00200	<0.002000	<50.5	<50.5	<50.5	<50.50	<50.50	48.9*
FS122	11/24/2020	3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	30.2*
FS123	11/24/2020	3	<0.00198	<0.001980	<49.9	<49.9	<49.9	<49.90	<49.90	32.5*
FS124	11/24/2020	3	<0.00200	<0.002000	<49.9	<49.9	<49.9	<49.90	<49.90	21.1*
FS125	11/24/2020	3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	24.4*
FS126	11/24/2020	3	<0.00201	<0.002010	<50.2	<50.2	<50.2	<50.20	<50.20	21.6*
FS127	11/24/2020	3	<0.00200	<0.002000	<50.3	<50.3	<50.3	<50.30	<50.30	19.7*
FS128	11/24/2020	3	<0.00199	<0.001990	<49.9	<49.9	<49.9	<49.90	<49.90	20.8*
FS129	11/24/2020	3	0.102	0.5930	<49.8	<49.8	<49.8	<49.80	<49.80	27.4*
FS130	11/25/2020	0.5	<0.00199	<0.001990	<50.1	<50.1	<50.1	<50.10	<50.10	485
FS131	11/25/2020	0.5	<0.00199	<0.001990	<50.0	<50.0	<50.0	<50.00	<50.00	451
Excavation Sidewall Samples										
SW01	10/20/2020	0 - 4	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	45.0*
SW02	10/20/2020	0 - 4	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	59.9*
SW03	10/20/2020	0 - 4	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	24.0*
SW04	10/20/2020	0 - 4	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	161*

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NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
SW05	10/21/2020	0 - 4	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	65.3*
SW06	10/21/2020	0 - 4	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	170*
SW07	10/21/2020	0 - 4	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	29.3*
SW08	10/21/2020	0 - 4	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	16.1*
SW09	10/22/2020	0 - 4	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	591*
SW10	10/22/2020	0 - 4	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	413*
SW11	10/22/2020	0 - 4	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	529*
SW12	10/22/2020	0 - 4	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	411*
SW13	10/22/2020	0 - 4	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	189*
SW14	10/22/2020	0 - 4	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	108*
SW15	10/22/2020	0 - 4	<0.00198	<0.00198	59.5	<49.9	<49.9	59.5	59.5	52.0*
SW16	10/22/2020	0 - 4	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	169*
SW17	10/26/2020	0 - 4	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	301*
SW18	10/26/2020	0 - 4	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	133*
SW19	10/26/2020	0 - 4	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	47.6*
SW20	10/26/2020	0 - 4	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	70.7*
SW21	10/26/2020	0 - 4	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	40.2*
SW22	10/26/2020	0 - 4	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	278*
SW23	10/29/2020	0 - 4	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	55.0*
SW24	10/29/2020	0 - 4	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	57.0*
SW25	10/29/2020	0 - 4	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	307*

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NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
SW26	10/29/2020	0 - 4	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	124*
SW27	10/29/2020	0 - 4	<0.00201	<0.00201	<49.7	<49.7	<49.7	<49.7	<49.7	14.9*
SW28	10/29/2020	0 - 4	<0.00202	<0.00202	<50.3	<50.3	<50.3	<50.3	<50.3	72.9*
SW29	10/29/2020	0 - 4	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	41.6*
SW30	10/29/2020	0 - 4	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	17.0*
SW31	10/30/2020	0 - 4	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	34.7*
SW32	10/30/2020	0 - 4	<0.00202	<0.00202	<49.9	66.6	<49.9	66.6	66.6	393*
SW33	10/30/2020	0 - 4	<0.00200	<0.00200	<49.8	71.3	<49.8	71.3	71.3	197*
SW34	10/30/2020	0 - 4	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	335*
SW35	10/30/2020	0 - 4	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	98.7*
SW36	10/30/2020	0 - 4	<0.00198	<0.00198	52.5	<49.8	<49.8	52.5	52.5	58.7*
SW37	10/30/2020	0 - 4	<0.00199	<0.00199	53.5	<50.0	<50.0	53.5	53.5	48.7*
SW38	10/30/2020	0 - 4	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	151*
SW39	11/02/2020	0 - 4	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	231*
SW40	11/02/2020	0 - 4	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	749*
SW41	11/02/2020	0 - 4	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	578*
SW42	11/02/2020	0 - 4	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	886*
SW43	11/03/2020	0 - 4	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	129*
SW44	11/03/2020	0 - 4	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	1,130*
SW45	11/03/2020	0 - 4	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	130*
SW46	11/04/2020	0 - 4	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	107*

Table 1

Soil Analytical Results
Muy Wayno
Incident Number NRM2019525477
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
SW47	11/04/2020	0 - 4	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	18.8*
SW48	11/03/2020	0 - 4	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	39.3*
SW49	11/04/2020	0 - 4	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	91.2*
SW50	11/04/2020	0 - 4	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	29.8*
SW51	11/04/2020	0 - 4	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	40.7*
SW52	11/04/2020	0 - 4	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	17.0*
SW55	11/05/2020	0 - 3	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	294*
SW56	11/05/2020	0 - 3	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	111*
SW57	11/05/2020	0 - 3	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	111*
SW58	11/06/2020	0 - 3	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	11.1*
SW59	11/09/2020	0 - 4	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	674*
SW60	11/09/2020	0 - 4	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	203*
SW61	11/09/2020	0 - 4	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	65.5*
SW62	11/09/2020	0 - 4	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	10.2*
SW63	11/09/2020	0 - 4	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	26.0*
SW64	11/10/2020	0 - 4	<0.00198	<0.00198	<50.3	<50.3	<50.3	<50.3	<50.3	44.0*
SW65	11/10/2020	0 - 4	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	277*
SW66	11/11/2020	0 - 4	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	550*
SW67	11/11/2020	0 - 4	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	177*
SW68	11/11/2020	0 - 3	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	399*
SW69	11/11/2020	0 - 3	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	469*

Table 1

Soil Analytical Results
Muy Wayno
Incident Number NRM2019525477
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
SW70	11/12/2020	0 - 3	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	58.6*
SW71	11/16/2020	0 - 4	<0.00198	<0.001980	<50.2	<50.2	<50.2	<50.20	<50.20	279*
SW72	11/17/2020	0 - 3	<0.00200	<0.002000	<50.2	<50.2	<50.2	<50.20	<50.20	32.6*
SW73	11/17/2020	0 - 3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	80.7*
SW74	11/18/2020	0 - 3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	134*
SW75	11/18/2020	0 - 3	<0.00200	<0.002000	<50.2	<50.2	<50.2	<50.20	<50.20	177*
SW76	11/18/2020	0 - 3	<0.00200	<0.002000	<51.0	<51.0	<51.0	<51.00	<51.00	56.8*
SW77	11/19/2020	0 - 3	<0.00199	<0.001990	<50.0	<50.0	<50.0	<50.00	<50.00	21.7*
SW78	11/19/2020	0 - 3	<0.00198	<0.001980	<50.2	<50.2	<50.2	<50.20	<50.20	112*
SW79	11/20/2020	0 - 3	<0.00200	<0.002000	<49.9	<49.9	<49.9	<49.90	<49.90	272*
SW80	11/20/2020	0 - 3	<0.00198	<0.001980	<49.9	<49.9	<49.9	<49.90	<49.90	334*
SW81	11/23/2020	0 - 3	<0.00202	<0.002020	<50.1	<50.1	<50.1	<50.10	<50.10	62.6*
SW82	11/23/2020	0 - 3	<0.00202	<0.002020	<50.0	<50.0	<50.0	<50.00	<50.00	63.1*
SW83	11/23/2020	0 - 3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	12.5*
SW84	11/23/2020	0 - 3	<0.00199	<0.001990	<50.0	<50.0	<50.0	<50.00	<50.00	37.9*
SW85	11/24/2020	0 - 3	<0.00199	<0.001990	<50.2	<50.2	<50.2	<50.20	<50.20	32.6*
SW86	11/24/2020	0 - 3	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	75.8*
SW87	11/24/2020	0 - 3	<0.00199	<0.001990	<50.3	<50.3	<50.3	<50.30	<50.30	86.6*
SW88	11/24/2020	0 - 3	<0.00199	<0.001990	<50.3	<50.3	<50.3	<50.30	<50.30	79.1*
SW89	11/24/2020	0 - 3	<0.00200	<0.002000	<50.2	<50.2	<50.2	<50.20	<50.20	66.7*
SW90	11/24/2020	0 - 3	<0.00199	<0.001990	<49.9	<49.9	<49.9	<49.90	<49.90	76.7*

Table 1

Soil Analytical Results
Muy Wayno
Incident Number NRM2019525477
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
SW91	11/24/2020	0 - 3	<0.00200	<0.002000	<50.1	<50.1	<50.1	<50.10	<50.10	74.6*
SW92	11/24/2020	0 - 3	<0.00199	<0.001990	<50.0	<50.0	<50.0	<50.00	<50.00	81.3*
Delineation Samples										
PH01	11/25/2020	1	<0.00199	<0.001990	<50.0	<50.0	<50.0	<50.00	<50.00	150
PH01A	11/25/2020	2	<0.00201	<0.002010	<49.9	<49.9	<49.9	<49.90	<49.90	228
PH02	11/25/2020	1	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	174
PH02A	11/25/2020	2	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	204
PH03	11/25/2020	1	<0.00201	<0.002010	<49.9	<49.9	<49.9	<49.90	<49.90	140
PH03A	11/25/2020	2	<0.00200	<0.002000	<50.0	<50.0	<50.0	<50.00	<50.00	170

ft - feet/foot

mg/kg - milligrams per kilograms

BTEX - benzene, toluene, ethylbenzene, and total xylenes

TPH - total petroleum hydrocarbons

DRO - diesel range organics

GRO - gasoline range organics

ORO - motor oil range organics

NMOCD - New Mexico Oil Conservation Division

NMAC - New Mexico Administrative Code

< - indicates result is less than the stated laboratory method practical quantitation limit

NE - Not Established

BOLD - indicates results exceed the higher of the background sample result or applicable regulatory standard

Text

 impacted soil has been excavated

* - indicates sample was collected in area to be reclaimed after remediation is complete;

closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg

ATTACHMENT 1: REFERENCED WELL RECORD



New Mexico Office of the State Engineer

Water Right Summary

WR File Number: RA 07162 **Subbasin:** RA **Cross Reference:-**
Primary Purpose: DOM 72-12-1 DOMESTIC ONE HOUSEHOLD
Primary Status: PMT PERMIT
Total Acres: **Subfile:** - **Header:** -
Total Diversion: 0 **Cause/Case:** -
Owner: AMERICAN GROUNDWATER CONSULT.

Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/ To	Acres	Diversion	Consumptive
			1	2					
243448	EXPL	1983-05-04	PMT	APR	RA 07162	T	0	0	

Current Points of Diversion

POD Number	Well Tag	Source	Q Q Q			(NAD83 UTM in meters)		Other Location Desc
			6416	4	Sec Tws Rng	X	Y	
RA 07162		Shallow	3	1	1 29 10S 25E	552820	3698107*	
RA 07162 EXP		Shallow	4	2	2 30 10S 25E	552615	3698106*	EXPLORATORY
RA 07162 EXP1		Shallow	3	4	1 29 10S 25E	553221	3697707*	EXPLORATORY
RA 07162 EXP2		Shallow	1	3	1 29 10S 25E	552819	3697904*	EXPLORATORY

An () after northing value indicates UTM location was derived from PLSS - see Help



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
RA 07162 EXP2		1	3	1	29	10S	25E	552819	3697904*

Driller License: 784 **Driller Company:** STEPHENS, RAY WELDING & DRLG.

Driller Name:

Drill Start Date: 05/04/1983	Drill Finish Date: 05/05/1983	Plug Date:
Log File Date: 05/19/1983	PCW Rcv Date:	Source: Shallow
Pump Type:	Pipe Discharge Size:	Estimated Yield:
Casing Size: 4.00	Depth Well: 55 feet	Depth Water: 40 feet

Water Bearing Stratifications:	Top	Bottom	Description
	40	55	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	40	55

*UTM location was derived from PLSS - see Help

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.

7/20/20 8:39 AM

Page 1 of 1

POD SUMMARY - RA 07162 EXP2



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USGS 320857103553301 25S.30E.07.112331

Available data for this site

SUMMARY OF ALL AVAILABLE DATA ▼

GO

Well Site

DESCRIPTION:

Latitude 32°08'57", Longitude 103°55'33" NAD27

Eddy County, New Mexico , Hydrologic Unit 13060011

Well depth: 385 feet

Land surface altitude: 3,169 feet above NAVD88.

Well completed in "Alluvium, Bolson Deposits and Other Surface Deposits" (110AVMB) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1959-02-05	1998-01-28	5
Revisions	Unavailable (site:0) (timeseries:0)		

OPERATION:

Record for this site is maintained by the USGS New Mexico Water Science Center

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Title: NWIS Site Information for USA: Site Inventory

URL: [https://waterdata.usgs.gov/nwis/inventory?](https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=320857103553301)

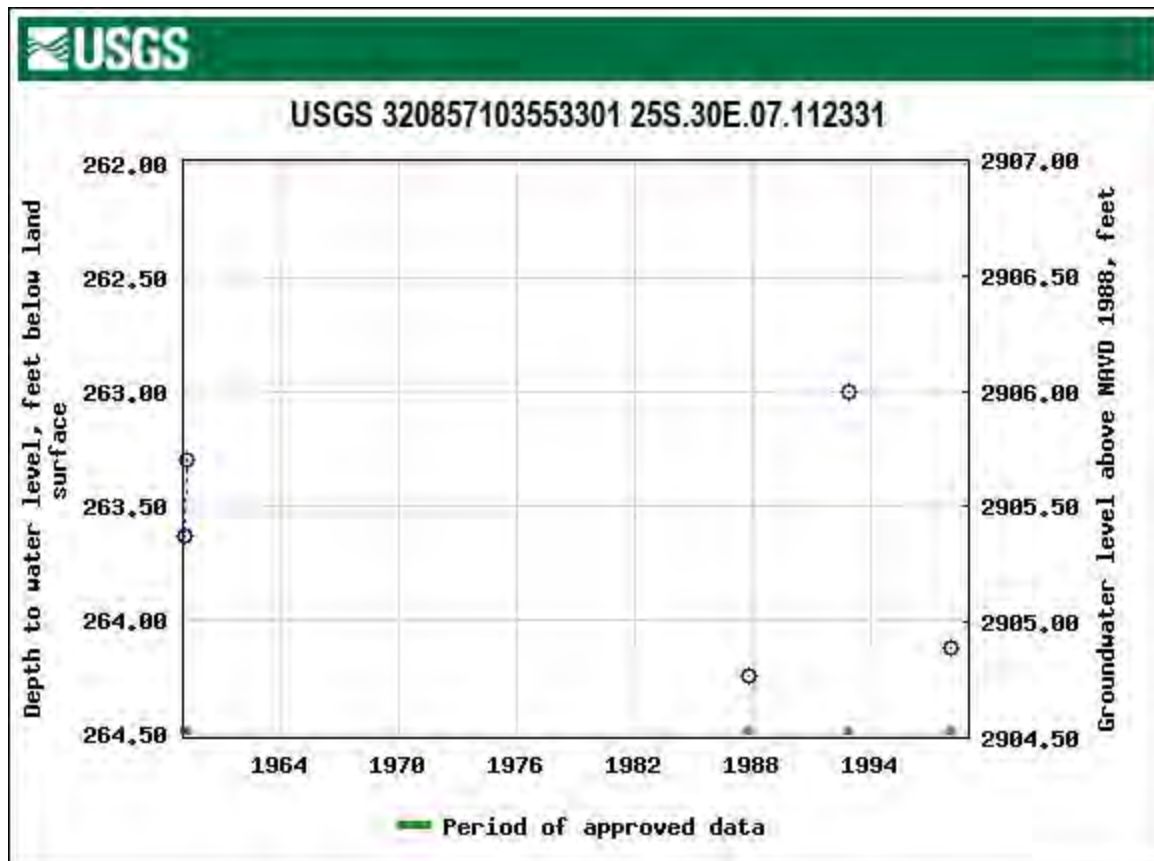
[agency_code=USGS&site_no=320857103553301](https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=320857103553301)



Page Contact Information: [New Mexico Water Data Support Team](#)

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ATTACHMENT 2: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG

XTO Energy, Inc.	Muy Wayno Eddy County, New Mexico	NRM2019525477

Photo No.	Date	
1	July 20, 2020	
View of release extent facing South		

Photo No.	Date	
2	July 20, 2020	
View of release in pasture.		



PHOTOGRAPHIC LOG

XTO Energy, Inc.	Muy Wayno Eddy County, New Mexico	NRM2019525477

Photo No.	Date	
3	July 20, 2020	
View of release extent in pasture facing West.		

Photo No.	Date	
4	October 21, 2020	
View of excavation in pasture.		



PHOTOGRAPHIC LOG

XTO Energy, Inc.	Muy Wayno Eddy County, New Mexico	NRM2019525477

Photo No.	Date	
5	October 26, 2020	
View of excavation in pasture facing West.		

Photo No.	Date	
6	November 25, 2020	
View of excavation on pad facing Northwest.		

ATTACHMENT 3: LITHOLOGIC/SAMPLING LOG

 WSP USA 508 West Stevens Street Carlsbad, New Mexico 88220								BH or PH Name: PH01		Date: 11/25/2020	
								Site Name: Muy Wayno Frac Pond			
								RP or Incident Number: NRM2019525477			
								WSP Job Number: TE012920104			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By SL		Method: Trackhoe	
Lat/Long: 32.147102, -103.923133				Field Screening: Chloride, PID				Hole Diameter:		Total Depth: 2'	
Comments: TD @ 2', chloride screening values include a 60% correction factor											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks			
						0		0-2' Caliche w/sand, tan, brown, off white, m.-f., poorly graded, no odor, no stain			
D	186	0.4	N	PH01	1'	1	CCHE				
D	320	0.1	N	PH01A	2'	2					
								TD @ 2'			
						3					
						4					
						5					
						6					
						7					
						8					
						9					
						10					
						11					
						12					

 WSP USA 508 West Stevens Street Carlsbad, New Mexico 88220								BH or PH Name: PH02		Date: 11/25/2020	
								Site Name: Muy Wayno Frac Pond			
								RP or Incident Number: NRM2019525477			
								WSP Job Number: TE012920104			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By SL		Method: Trackhoe	
Lat/Long: 32.147102, -103.923133				Field Screening: Chloride, PID				Hole Diameter:		Total Depth: 2'	
Comments: TD @ 2', chloride screening values include a 60% correction factor											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks			
						0		0-2' Caliche w/sand, tan, brown, off white, m.-f., poorly graded, no odor, no stain			
D	435	0.0	N	PH02	1'	1	CCHE				
D	186	0.1	N	PH02A	2'	2					
								TD @ 2'			
						3					
						4					
						5					
						6					
						7					
						8					
						9					
						10					
						11					
						12					

 WSP USA 508 West Stevens Street Carlsbad, New Mexico 88220								BH or PH Name: PH03		Date: 11/25/2020	
								Site Name: Muy Wayno Frac Pond			
								RP or Incident Number: NRM2019525477			
								WSP Job Number: TE012920104			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By SL		Method: Trackhoe	
Lat/Long: 32.147102, -103.923133				Field Screening: Chloride, PID				Hole Diameter:		Total Depth: 2'	
Comments: TD @ 2', chloride screening values include a 60% correction factor											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks			
						0		0-2' Caliche w/sand, tan, brown, off white, m.-f., poorly graded, no odor, no stain			
D	<186	0.0	N	PH03	1'	1	CCHE				
D	378	0.1	N	PH03A	2'	2					
								TD @ 2'			
						3					
						4					
						5					
						6					
						7					
						8					
						9					
						10					
						11					
						12					

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

CONDITIONS

Action 12986

CONDITIONS OF APPROVAL

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Building #5 Midland, TX79707		OGRID: 5380	Action Number: 12986	Action Type: C-141
OCD Reviewer	Condition			
rhamlet	We have received your closure report and final C-141 for Incident #NRM2019525477 MUY WAYNO, thank you. This closure is approved.			