LT Environmental, Inc.
3300 North A Street, Building 1, #103
Midland, Texas 79705
T 432.704.5178

December 9, 2019

Mr. Mike Bratcher
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 8821

RE: Containment Liner Inspection and Subsequent Delineation (2RP-5650)
Wind Fee #002
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE) is pleased to present the following letter report to WPX Energy Production, LLC (WPX) summarizing the response efforts and liner inspection associated with a crude oil and produced water release at the Wind Fee #002 well pad in Unit F, Section 4, Township 23 South, Range 27 East, in Eddy County, New Mexico (Figure 1). On September 14, 2019, an equalizer valve was in the wrong position causing the release of approximately 15 barrels (bbls) of crude oil and 5 bbls of produced water in the lined steel containment at the site. All fluids were contained within the lined containment, recovered immediately, and returned to production. WPX reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on September 16, 2019, and was subsequently assigned Remediation Permit (RP) Number 2RP-5650 (Attachment 1).

INITIAL LINER INSPECTION

On September 20, 2019, LTE personnel competent in the inspection of on-site equipment and facilities visited the site to visually inspect the liner. During the inspection, a tear approximately 1 inch in size was noted in the northeast area of the containment liner. Based on this observation, additional assessment and soil sampling activities were warranted. Repair of the liner was arranged after access and sampling of the underlying soil was complete. Photographs taken during the liner inspection and follow-up liner repair are included as Attachment 2.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be between 50 and 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is C 03274, located approximately 2,157 feet north of the Site. The water well has a depth to groundwater of 81 feet and a total depth of 130 feet bgs. Ground surface elevation at the water well location is 3,144 feet above mean sea level (AMSL), which is approximately 5 feet higher in elevation than the Site. The closest continuously flowing water or significant watercourse to the Site is a drainage located approximately 3,351 feet east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church. The Site is greater than 300 feet from a wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not

within a 100-year floodplain or overlying a subsurface mine. The Site is located in a medium potential karst area. Based on these criteria, the following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 1,000 mg/kg for the sum of total petroleum hydrocarbons (TPH) – gasoline range organics (GRO) and TPH – diesel range organics (DRO); 2,500 mg/kg TPH; and 10,000 mg/kg chloride.

SOIL SAMPLING

On September 27, 2019, LTE was onsite to conduct soil sampling associated with the observed tear in the tank battery secondary containment liner. While onsite, LTE noted a second tear in the liner near the center of the tank battery (Attachment 2). Using a hand auger, soil samples were collected beneath both of the observed tears, repairs were then completed to both areas where tears were noted (Attachment 2). Soil samples were collected at depths of 0.5 feet bgs and 1 foot bgs at each location (SS01 and SS02). Soil samples were field screened for volatile aromatic hydrocarbons using a photo-ionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The soil samples were placed directly into a pre-cleaned glass jar, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco in Midland, Texas, for analysis of BTEX following USEPA Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0. Soil sample locations are depicted on the attached Figure 2. Soil sampling Logs are included as Attachment 3.

ANALYTICAL RESULTS

Laboratory analytical results of soil samples indicated that BTEX, TPH, and chloride concentrations were either below the laboratory detection limit or compliant with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 4.

WPX repaired the observed tears. LTE recommends that WPX request no further action for release number 2RP-5650. An updated NMOCD Form C-141 is included as Attachment 1.

If you have any questions or comments, please do not hesitate to contact Chris McKisson at (970) 285-9985 or cmckisson@ltenv.com.

Sincerely,
LT ENVIRONMENTAL, INC.

Chris McKisson
Project Environmental Scientist

Ashley L. Ager, M.S., P.G.
Senior Geologist

Attachments:

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

FIGURES

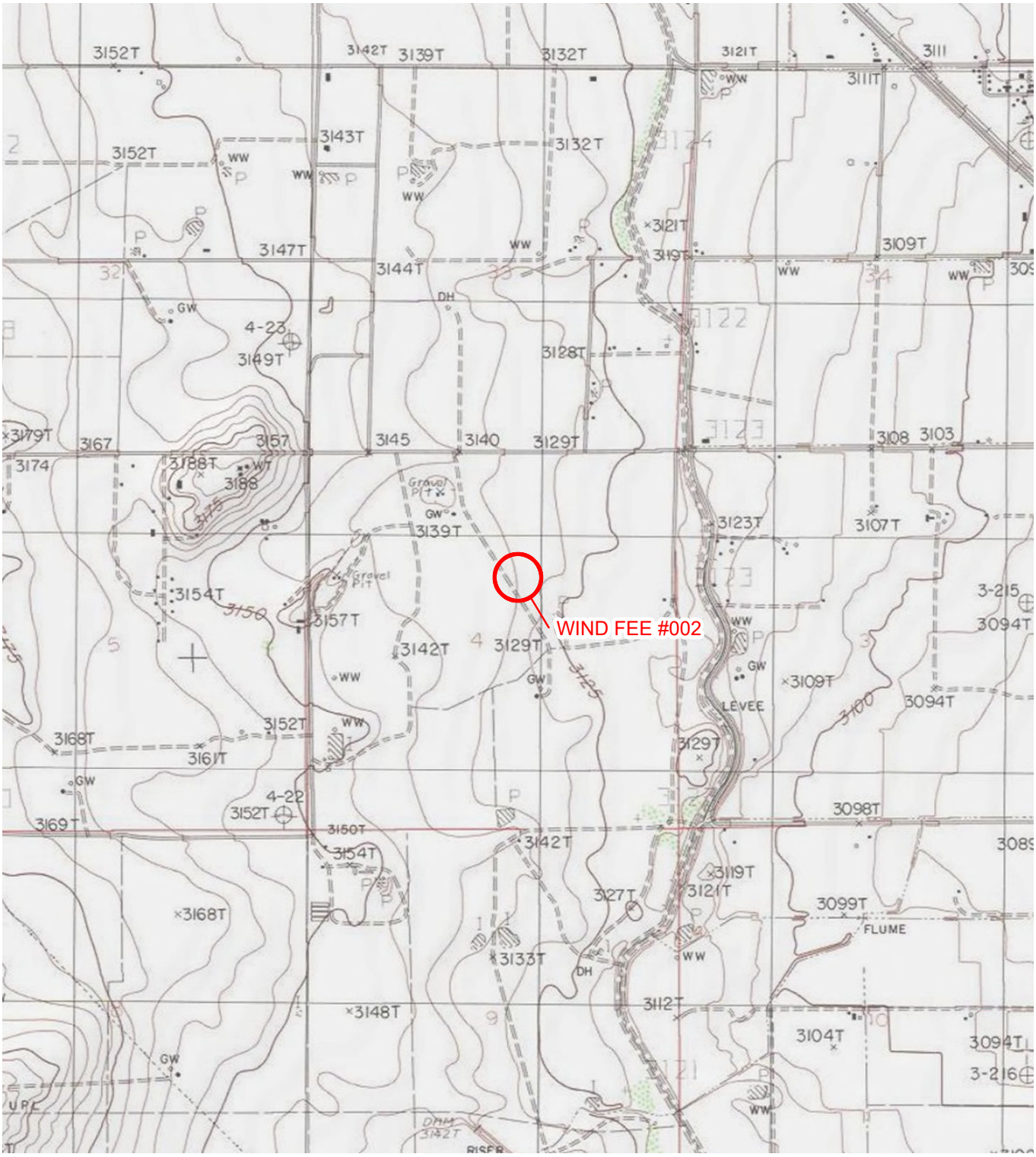


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

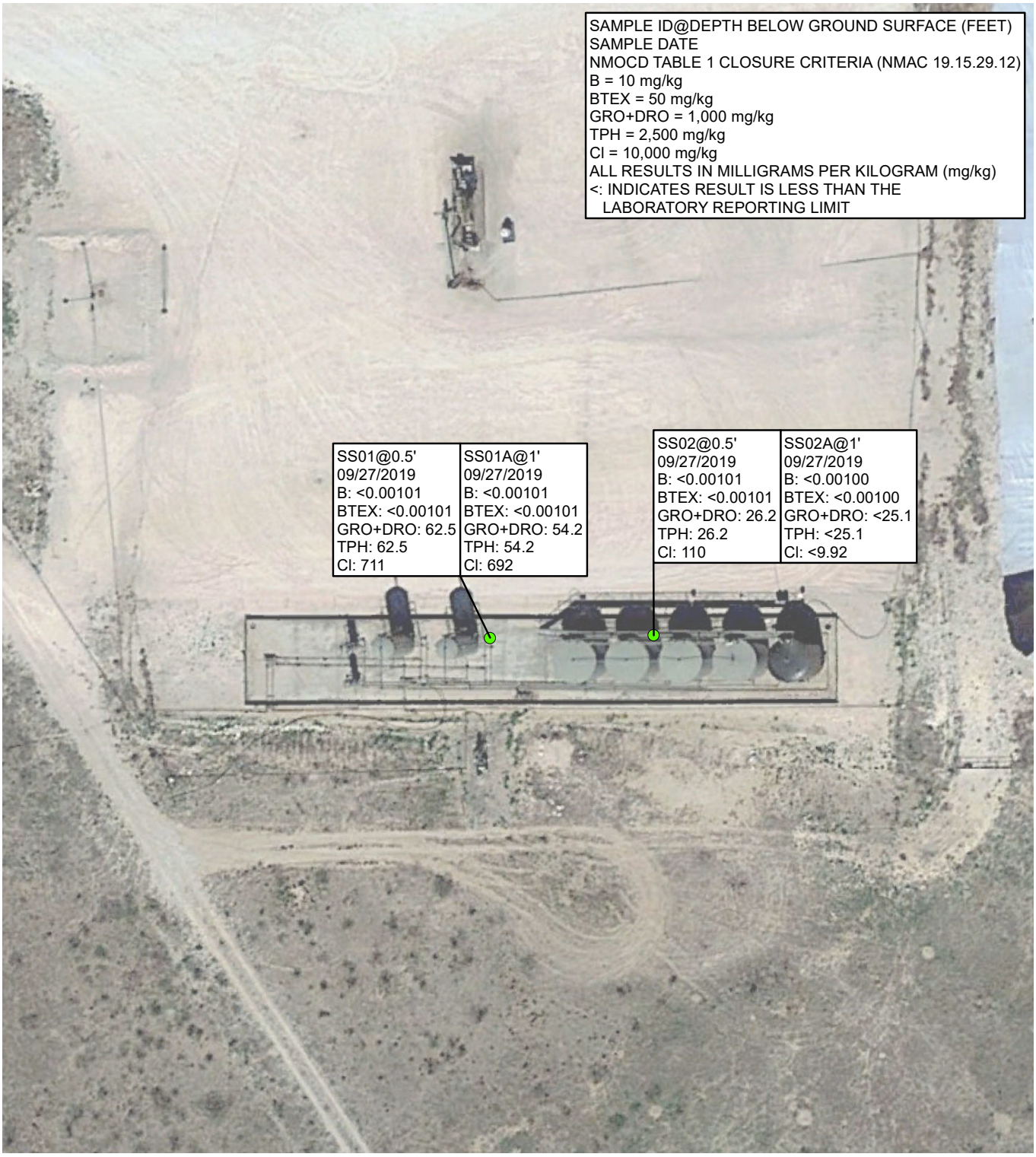
Feet

N

NEW MEXICO

FIGURE 1
SITE LOCATION MAP
WIND FEE #002
UNIT G SEC 4 T23S R27E
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

P:\WPX\GIS\MXD\034819054_WIND FEE #002\034819054_FIG01_SL_2019.mxd



LEGEND

IMAGE COURTESY OF GOOGLE EARTH 2016

PRELIMINARY SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

0 50 100
Feet

N

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

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
WIND FEE #002
UNIT G SEC 4 T23S R27E
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

P:\WPX\GIS\MXD\034819054_WIND FEE #002\034819054_FIG02_SS_2019.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

WIND FEE #002
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	Sum of GRO + DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
SS01	0.5	09/27/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.1	62.5	<25.1	62.5	62.5	711
SS01A	1	09/27/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.1	54.2	<25.1	54.2	54.2	692
SS02	0.5	09/27/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<25.0	26.2	<25.0	26.2	26.2	110
SS02A	1	09/27/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<25.1	<25.1	<25.1	<25.1	<25.1	<9.92
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**10,000**

Notes:

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
mg/kg - milligrams per kilogram
NE - not established
NMOCD - New Mexico Oil Conservation Division
DRO - diesel range organics
GRO - gasoline range organics
ORO - oil range organics
TPH - total petroleum hydrocarbons
< - indicates result is below laboratory reporting limits
Bold- indicates result exceeds the applicable regulatory standard

ATTACHMENT 1: CORRECTIVE ACTIONS FORM C-141

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	NAB1928155096
District RP	2RP-5650
Facility ID	
Application ID	pAB1928154806

Release Notification

N19WV-190916-C-1410

Responsible Party

Responsible Party: WPX Energy Permian, LLC.	OGRID: 246289
Contact Name: Jim Raley	Contact Telephone: 575-689-7597
Contact email: james.raley@wpxenergy.com	Incident # *(assigned by OCD)*
Contact mailing address: 5315 Buena Vista Dr., Carlsbad, NM 88220	

Location of Release Source

Latitude 32.3368454 Longitude -104.1961746

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: WIND FEE #002	Site Type: Production Facility
Date Release Discovered: 9/14/2019	API# *(if applicable):* 30-015-41756

Unit Letter	Section	Township	Range	County
F	04	23S	27E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private

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) 15	Volume Recovered (bbls) 15
☒ Produced Water	Volume Released (bbls) 5	Volume Recovered (bbls) 5
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Equalizer valve in wrong position caused tank to overflow into lined containment. All fluids recovered and returned to production. No soils impacted, liner to be inspected.

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Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAB1928155096
District RP	2RP-5650
Facility ID	
Application ID	pAB1928154806

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

Initial Response

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

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

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: Jim Raley
Title: Environmental Specialist

Signature: Jim D Raley
Date: 9/16/2019

email: james.raley@wpxenergy.com
Telephone: 575-689-7597

OCD Only

Received by: Amalia Bustamante
Date: 10/8/2019

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	**2RP-5650**
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	**50-100** (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.

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Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	**2RP-5650**
Facility ID	
Application ID	

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

Printed Name: **Jim Raley** Title: **Environmental Specialist**

Signature: _____ Date: **12/9/2019**

email: **JamesRaley@wpxenergy.com** Telephone: **575-689-7597**

OCD Only

Received by: _____ Date: _____

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State of New Mexico
Oil Conservation Division

Incident ID	
District RP	**2RP-5650**
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: **Jim Raley** Title: **Environmental Specialist**

Signature: _____ Date: **12/9/2019**

email: **James.Raley@wpxenergy.com** Telephone: **575-689-7597**

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: _____

ATTACHMENT 2: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: View West of liner.

Photograph 2: Liner tear.

Photograph 3: View East of liner.

Photograph 4: Completed liner repair.

PHOTOGRAPHIC LOG

Photograph 1: Second liner tear.

Photograph 2: Second liner tear repair

ATTACHMENT 3: SOIL SAMPLING LOGs

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

	Identifier: SS01	Date: 9/27/19
	Project Name: Wind Fee #002	RP Number: 2RP-5650
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Lynda Laumbach	Method: Hand Auger
Lat/Long: Collector Field Screening: Hach Chloride Strips (Low Range) & PID	Hole Diameter: N/A	Total Depth: 1 ft

Comments: N/C Field screening not collected in the field.
*Chloride results displayed were analyzed by a lab

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
DRY	596	N/C	No	SS01		0.5 ft	Sand	dry, SAND, loam, organics
DRY	400	N/C	No	SS01A	1	1 ft	Sand	dry, SAND, loam, organics
								Total Depth
					7			
					8			
					9			
					10			
					11			
					12			

LT Environmental, Inc. *508 West Stevens Street* *Carlsbad, New Mexico 88220* *Compliance · Engineering · Remediation*		Identifier: SS02	Date: 9/27/19
		Project Name: Wind Fee #002	RP Number: 2RP-5650
LITHOLOGIC / SOIL SAMPLING LOG		Logged By: Lynda Laumbach	Method: Hand Auger
Lat/Long: Collector	Field Screening: Hach Chloride Strips (Low Range) & PID	Hole Diameter: N/A	Total Depth: 1 ft
Comments: N/C Field screening not collected in the field.			

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
DRY	<192	N/C	No	SS02		0.5 ft	Sand	dry, SAND, loam, organics
DRY	<192	N/C	No	SS02A	1	1 ft	Sand	dry, SAND, loam, organics
								Total Depth
					7			
					8			
					9			
					10			
					11			
					12			

ATTACHMENT 4: LABORATORY ANALYTICAL RESULTS

Analytical Report 638358

for

LT Environmental, Inc.

Project Manager: Chris McKisson

Wind Fee #002

034819054

01-OCT-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

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

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

01-OCT-19

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

Reference: XENCO Report No(s): **638358**
Wind Fee #002
Project Address:

Chris McKisson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 638358. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 638358 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 638358

LT Environmental, Inc., Arvada, CO

Wind Fee #002

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	09-27-19 10:40	0.5 ft	638358-001
SS01A	S	09-27-19 11:00	1 ft	638358-002
SS02	S	09-27-19 11:20	0.5 ft	638358-003
SS02A	S	09-27-19 11:30	1 ft	638358-004

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Wind Fee #002

Project ID: *034819054*
Work Order Number(s): *638358*

Report Date: *01-OCT-19*
Date Received: *09/27/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3102821 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 638358

LT Environmental, Inc., Arvada, CO

Project Name: Wind Fee #002

Project Id: 034819054
Contact: Chris McKisson
Project Location:

Date Received in Lab: Fri Sep-27-19 01:15 pm
Report Date: 01-OCT-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	638358-001		638358-002		638358-003		638358-004					
	Field Id:	SS01		SS01A		SS02		SS02A					
	Depth:	0.5- ft		1- ft		0.5- ft		1- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Sep-27-19 10:40		Sep-27-19 11:00		Sep-27-19 11:20		Sep-27-19 11:30					
BTEX by EPA 8021B	***Extracted:***	Sep-27-19 18:00		Sep-27-19 18:00		Sep-27-19 18:00		Sep-27-19 18:00					
	Analyzed:	Sep-28-19 17:02		Sep-28-19 17:22		Sep-28-19 17:41		Sep-28-19 18:41					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100				
Toluene		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100				
Ethylbenzene		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100				
m,p-Xylenes		<0.00201	0.00201	<0.00202	0.00202	<0.00201	0.00201	<0.00201	0.00201				
o-Xylene		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100				
Total Xylenes		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100				
Total BTEX		<0.00101	0.00101	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100				
Chloride by EPA 300	***Extracted:***	Sep-27-19 17:00		Sep-27-19 17:00		Sep-27-19 17:00		Sep-27-19 17:00					
	Analyzed:	Sep-27-19 17:55		Sep-27-19 18:02		Sep-27-19 18:09		Sep-27-19 18:16					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		711	50.5	692	50.1	110	10.0	<9.92	9.92				
TPH by SW8015 Mod	***Extracted:***	Sep-30-19 10:09		Sep-30-19 10:09		Sep-30-19 10:09		Sep-30-19 10:09					
	Analyzed:	Sep-30-19 19:48		Sep-30-19 20:08		Sep-30-19 20:28		Sep-30-19 20:48					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<25.1	25.1	<25.1	25.1	<25.0	25.0	<25.1	25.1				
Diesel Range Organics (DRO)		62.5	25.1	54.2	25.1	26.2	25.0	<25.1	25.1				
Motor Oil Range Hydrocarbons (MRO)		<25.1	25.1	<25.1	25.1	<25.0	25.0	<25.1	25.1				
Total TPH		62.5	25.1	54.2	25.1	26.2	25.0	<25.1	25.1				
Total GRO-DRO		62.5	25.1	54.2	25.1	26.2	25.0	<25.1	25.1				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 638358

LT Environmental, Inc., Arvada, CO

Wind Fee #002

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	09.27.19 13.15
Lab Sample Id:	638358-001	Date Collected:	09.27.19 10.40	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.27.19 17.00	Basis:	Wet Weight
Seq Number:	3102737				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**711**	50.5	mg/kg	09.27.19 17.55		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.30.19 10.09	Basis:	Wet Weight
Seq Number:	3102943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.30.19 19.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	**62.5**	25.1	mg/kg	09.30.19 19.48		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.30.19 19.48	U	1
Total TPH	PHC635	**62.5**	25.1	mg/kg	09.30.19 19.48		1
Total GRO-DRO	PHC628	**62.5**	25.1	mg/kg	09.30.19 19.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	09.30.19 19.48	
o-Terphenyl	84-15-1	108	%	70-135	09.30.19 19.48	

Certificate of Analytical Results 638358

LT Environmental, Inc., Arvada, CO

Wind Fee #002

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	09.27.19 13.15
Lab Sample Id:	638358-001	Date Collected:	09.27.19 10.40	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	DTH	Date Prep:	09.27.19 18.00	Basis:	Wet Weight
Seq Number:	3102821				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.28.19 17.02	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.28.19 17.02	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.28.19 17.02	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.28.19 17.02	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.28.19 17.02	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.28.19 17.02	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.28.19 17.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	88	%	70-130	09.28.19 17.02	
1,4-Difluorobenzene	540-36-3	103	%	70-130	09.28.19 17.02	

Certificate of Analytical Results 638358

LT Environmental, Inc., Arvada, CO

Wind Fee #002

Sample Id:	**SS01A**	Matrix:	Soil	Date Received:	09.27.19 13.15
Lab Sample Id:	638358-002	Date Collected:	09.27.19 11.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.27.19 17.00	Basis:	Wet Weight
Seq Number:	3102737				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**692**	50.1	mg/kg	09.27.19 18.02		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.30.19 10.09	Basis:	Wet Weight
Seq Number:	3102943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.30.19 20.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	**54.2**	25.1	mg/kg	09.30.19 20.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.30.19 20.08	U	1
Total TPH	PHC635	**54.2**	25.1	mg/kg	09.30.19 20.08		1
Total GRO-DRO	PHC628	**54.2**	25.1	mg/kg	09.30.19 20.08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	09.30.19 20.08	
o-Terphenyl	84-15-1	104	%	70-135	09.30.19 20.08	

Certificate of Analytical Results 638358

LT Environmental, Inc., Arvada, CO

Wind Fee #002

Sample Id:	**SS01A**	Matrix:	Soil	Date Received:	09.27.19 13.15
Lab Sample Id:	638358-002	Date Collected:	09.27.19 11.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	DTH	Date Prep:	09.27.19 18.00	Basis:	Wet Weight
Seq Number:	3102821				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.28.19 17.22	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.28.19 17.22	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.28.19 17.22	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.28.19 17.22	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.28.19 17.22	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.28.19 17.22	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.28.19 17.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	70-130	09.28.19 17.22	
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.28.19 17.22	

Certificate of Analytical Results 638358

LT Environmental, Inc., Arvada, CO

Wind Fee #002

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	09.27.19 13.15
Lab Sample Id:	638358-003	Date Collected:	09.27.19 11.20	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.27.19 17.00	Basis:	Wet Weight
Seq Number:	3102737				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**110**	10.0	mg/kg	09.27.19 18.09		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.30.19 10.09	Basis:	Wet Weight
Seq Number:	3102943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.30.19 20.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	**26.2**	25.0	mg/kg	09.30.19 20.28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.30.19 20.28	U	1
Total TPH	PHC635	**26.2**	25.0	mg/kg	09.30.19 20.28		1
Total GRO-DRO	PHC628	**26.2**	25.0	mg/kg	09.30.19 20.28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	09.30.19 20.28	
o-Terphenyl	84-15-1	108	%	70-135	09.30.19 20.28	

Certificate of Analytical Results 638358

LT Environmental, Inc., Arvada, CO

Wind Fee #002

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	09.27.19 13.15
Lab Sample Id:	638358-003	Date Collected:	09.27.19 11.20	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	DTH	Date Prep:	09.27.19 18.00	Basis:	Wet Weight
Seq Number:	3102821				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.28.19 17.41	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.28.19 17.41	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.28.19 17.41	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.28.19 17.41	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.28.19 17.41	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.28.19 17.41	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.28.19 17.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	09.28.19 17.41	
4-Bromofluorobenzene	460-00-4	103	%	70-130	09.28.19 17.41	

Certificate of Analytical Results 638358

LT Environmental, Inc., Arvada, CO

Wind Fee #002

Sample Id:	**SS02A**	Matrix:	Soil	Date Received:	09.27.19 13.15
Lab Sample Id:	638358-004	Date Collected:	09.27.19 11.30	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.27.19 17.00	Basis:	Wet Weight
Seq Number:	3102737				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.92	9.92	mg/kg	09.27.19 18.16	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.30.19 10.09	Basis:	Wet Weight
Seq Number:	3102943				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.30.19 20.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.30.19 20.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.30.19 20.48	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.30.19 20.48	U	1
Total GRO-DRO	PHC628	<25.1	25.1	mg/kg	09.30.19 20.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	09.30.19 20.48	
o-Terphenyl	84-15-1	114	%	70-135	09.30.19 20.48	

Certificate of Analytical Results 638358

LT Environmental, Inc., Arvada, CO

Wind Fee #002

Sample Id:	**SS02A**	Matrix:	Soil	Date Received:	09.27.19 13.15
Lab Sample Id:	638358-004	Date Collected:	09.27.19 11.30	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	DTH	Date Prep:	09.27.19 18.00	Basis:	Wet Weight
Seq Number:	3102821				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.28.19 18.41	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.28.19 18.41	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.28.19 18.41	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.28.19 18.41	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.28.19 18.41	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.28.19 18.41	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.28.19 18.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	09.28.19 18.41	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.28.19 18.41	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 638358

LT Environmental, Inc.

Wind Fee #002

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3102737 — Matrix: Solid — Date Prep: 09.27.19
MB Sample Id: 7687068-1-BLK — LCS Sample Id: 7687068-1-BKS — LCSD Sample Id: 7687068-1-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	255	102	90-110	0	20	mg/kg	09.27.19 16:19	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3102737 — Matrix: Soil — Date Prep: 09.27.19
Parent Sample Id: 638355-001 — MS Sample Id: 638355-001 S — MSD Sample Id: 638355-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	66.8	2000	2010	97	2020	98	90-110	0	20	mg/kg	09.27.19 16:40	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3102737 — Matrix: Solid — Date Prep: 09.27.19
Parent Sample Id: 638358-004 — MS Sample Id: 638358-004 S — MSD Sample Id: 638358-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8.28	198	202	98	206	99	90-110	2	20	mg/kg	09.27.19 18:23	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3102943 — Matrix: Solid — Date Prep: 09.30.19
MB Sample Id: 7687213-1-BLK — LCS Sample Id: 7687213-1-BKS — LCSD Sample Id: 7687213-1-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)	<25.0	1000	1080	108	1070	107	70-135	1	35	mg/kg	09.30.19 14:03	
Diesel Range Organics (DRO)	<25.0	1000	1160	116	1160	116	70-135	0	35	mg/kg	09.30.19 14:03	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		127		124		70-135	%	09.30.19 14:03
o-Terphenyl	117		122		123		70-135	%	09.30.19 14:03

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

QC Summary 638358

LT Environmental, Inc.

Wind Fee #002

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3102943 — Matrix: Soil — Date Prep: 09.30.19
Parent Sample Id: 638445-001 — MS Sample Id: 638445-001 S — MSD Sample Id: 638445-001 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)	<25.0	999	1110	111	1140	113	70-135	3	35	mg/kg	09.30.19 15:04	
Diesel Range Organics (DRO)	<25.0	999	1200	120	1230	122	70-135	2	35	mg/kg	09.30.19 15:04	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		130		70-135	%	09.30.19 15:04
o-Terphenyl	121		123		70-135	%	09.30.19 15:04

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3102821 — Matrix: Solid — Date Prep: 09.27.19
MB Sample Id: 7687140-1-BLK — LCS Sample Id: 7687140-1-BKS — LCSD Sample Id: 7687140-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0961	96	0.0940	94	70-130	2	35	mg/kg	09.28.19 12:43	
Toluene	<0.00100	0.100	0.107	107	0.107	107	70-130	0	35	mg/kg	09.28.19 12:43	
Ethylbenzene	<0.00100	0.100	0.116	116	0.118	118	71-129	2	35	mg/kg	09.28.19 12:43	
m,p-Xylenes	<0.00200	0.200	0.233	117	0.239	120	70-135	3	35	mg/kg	09.28.19 12:43	
o-Xylene	<0.00100	0.100	0.111	111	0.115	115	71-133	4	35	mg/kg	09.28.19 12:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		97		92		70-130	%	09.28.19 12:43
4-Bromofluorobenzene	93		102		98		70-130	%	09.28.19 12:43

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3102821 — Matrix: Soil — Date Prep: 09.27.19
Parent Sample Id: 638307-001 — MS Sample Id: 638307-001 S — MSD Sample Id: 638307-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0981	98	0.0928	93	70-130	6	35	mg/kg	09.28.19 14:03	
Toluene	<0.00100	0.100	0.110	110	0.105	105	70-130	5	35	mg/kg	09.28.19 14:03	
Ethylbenzene	<0.00100	0.100	0.117	117	0.115	115	71-129	2	35	mg/kg	09.28.19 14:03	
m,p-Xylenes	<0.00200	0.200	0.238	119	0.233	117	70-135	2	35	mg/kg	09.28.19 14:03	
o-Xylene	<0.00100	0.100	0.115	115	0.113	113	71-133	2	35	mg/kg	09.28.19 14:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		101		70-130	%	09.28.19 14:03
4-Bromofluorobenzene	112		100		70-130	%	09.28.19 14:03

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

Chain of Custody

Work Order No: 638358

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

Project Manager:	~~Adrian Baker~~ Chris McKissan	Bill to: (if different)	Chris McKisson
Company Name:	LT Environmental, Inc., Permian office	Company Name:	LT Environmental
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178 Email:	Email:	cmckisson@ltenv.com, llaumbach@ltenv.com

Work Order Comments

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

Project Name:	Wind Fee #002	Turn Around	
Project Number:	03481905 4	Routine	☒
P.O. Number:	Task #002	Rush:	
Sampler's Name:	L. Laumbach	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Temperature (°C):	2.8	Thermometer ID	NM 007
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	4

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)
SS01	S	09/27/2019	10:40	0.5'	1	X	X	X
SS01A	S		11:00	1'	1	X	X	X
SS02	S		11:20	0.5'	1	X	X	X
SS02A	S		11:30	1'	1	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			09/27/19 13:15	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09/27/2019 01:15:00 PM

Work Order #: 638358

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)?	2.8
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6*Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 09/27/2019

Checklist reviewed by: Jessica Kramer Date: 09/28/2019