



LT Environmental, Inc.

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

June 30, 2020

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

**RE: Closure Request
WPX Energy Permian, LLC
RDX Federal 28 #013
Incident ID NRM2012051816
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of WPX Energy Permian, LLC (WPX), presents the following Closure Request detailing soil sampling and excavation activities at the RDX Federal 28 #013 (Site) in Unit B, Section 28, Township 26 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following an event that resulted in the unauthorized release of produced water and crude oil onto the well pad and adjacent pasture. Based on the excavation activities and results of the soil sampling events, WPX requests no further action (NFA).

BACKGROUND

On April 15, 2020, a tubing on a Murphy Gauge failed, resulting in approximately 10 barrels (bbls) of crude oil and 30 bbls of produced water to be released to the well pad and toward the adjacent pasture immediate southwest of the well pad. Vacuum trucks were dispatched and recovered approximately 10 bbls of crude oil and 15 bbls produced water from the impacted area. WPX reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) which was received by the NMOCD and was assigned Incident ID NRM2012051816 (Attachment 1).

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on known aquifer properties and the nearest identified water well. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) water well 320125103514701, located approximately 6,586 ft northeast of the Site. Water well 320125103514701 has a reported depth to water of 117 feet bgs and is approximately 43 feet



higher in elevation than the Site. The closest significant watercourse to the Site is an unnamed tributary located approximately 3,008 feet southeast of the Site. The Site is greater than 300 feet from any occupied residence, school, hospital, institution, church, or wetland and greater than 1,000 feet to a freshwater well or spring. The Site is not within a 100-year floodplain or overlying a subsurface mine or unstable area. The Site is located in a medium-potential karst area. Potential receptors identified during site characterization are displayed in Figure 1.

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);
- 2,500 mg/kg total petroleum hydrocarbons (TPH);
- 1,000 mg/kg TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); and
- 20,000 mg/kg chloride.

Additionally, LTE applied a reclamation standard for chloride of 600 mg/kg for the top four feet of all impacted areas to be reclaimed immediately in the pasture.

SITE ASSESSMENT AND PRELIMINARY CORRECTIVE ACTION

On April 16, 2020, LTE conducted site investigative activities immediately following the incident. The release extent was mapped using a handheld Global Positioning System (GPS) unit and is shown on Figure 2. To assist with the preliminary corrective action, WPX contracted a third-party contractor to remove surface staining utilizing heavy equipment. On April 28, 2020, LTE personnel returned to the Site to field screen the current excavation for the presence of absence of volatile aromatic hydrocarbons using a calibrated photo-ionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Based on field screening results and visual observation, continued excavation efforts appeared to be warranted.

EXCAVATION ACTIVITIES

Between May 19, 2020, and May 20, 2020, LTE was onsite to oversee remaining excavation activities associated with the subject release. Excavation activities were directed by field screening soil samples for volatile aromatic hydrocarbons using a calibrated PID and chloride using Hach® chloride QuanTab® test strips. Following completion of excavation activities, five-point composite confirmation soil samples were collected from the floor (soil samples labeled as "FS") and sidewalls (soil samples labeled as "SW") of the excavation area. Sidewall samples were collected in excavation areas exceeding 2 feet in depth. Floor samples represented the excavation sidewalls in shallow areas. Each soil sample represented at most 200 square feet. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped



Bratcher, M.
Page 3

at or below 4 degrees Celsius (°C) under strict chain-of custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-motor oil range organics (MRO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0.

Approximately 193 cubic yards of impacted soil were removed from the excavation. Generated material was transported to the R360 Red Bluff Disposal Facility in Orla, Texas under WPX approved manifests. The excavation area measured a total of approximately 6,632 square feet in area and ranged in depth from 0.5 feet bgs to 6.5 feet bgs. The excavation area and soil sample locations are depicted on Figure 2. Photographic documentation was conducted throughout the remediation process and is included in Attachment 2.

ANALYTICAL RESULTS

Laboratory analytical results of all final excavation confirmation soil samples indicate compliance with the Closure Criteria. Complete laboratory analytical reports are included in Attachment 3. Laboratory analytical results are summarized in Table 1.

CONCLUSIONS

Remediation of impacted soils was successfully achieved as demonstrated through soil confirmation sampling. The excavations will be backfilled with locally sourced materials and recontoured to match pre-existing conditions. Additionally, the area in pasture will be seeded with a BLM-approved seed mix during favorable germination conditions. WPX is requesting an NFA determination and closure of Incident ID NRM2012051816.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Joseph S. Hernandez
Project Geologist

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



Bratcher, M.
Page 4

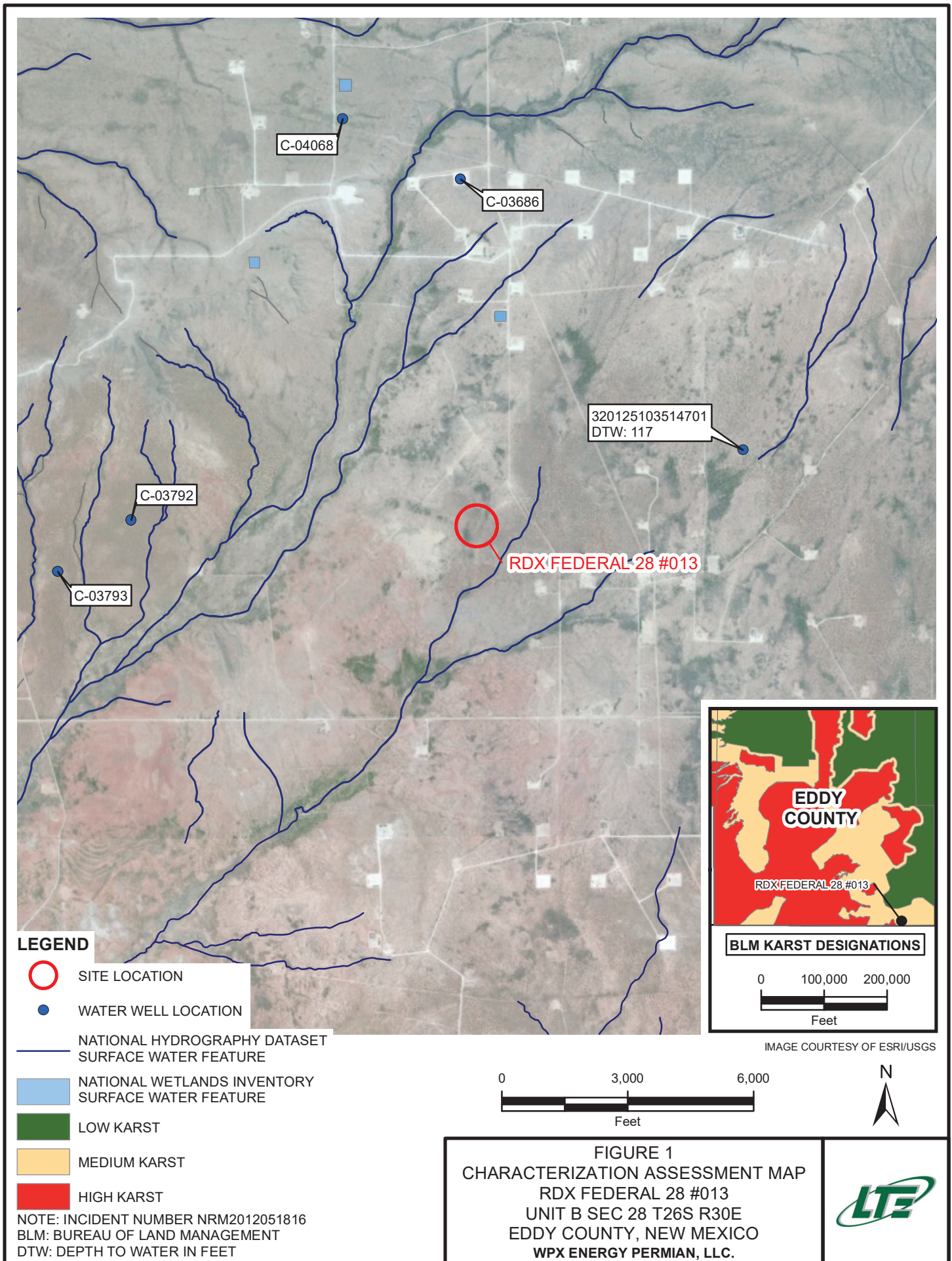
cc: Jim Raley, WPX
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD
Jim Amos, BLM

Attachments:

Figure 1 Site Location Map
Figure 2 Excavation Soil Sample Locations
Table 1 Soil Analytical Results
Attachment 1 Form C-141
Attachment 2 Photographic Log
Attachment 3 Laboratory Analytical Reports

FIGURES





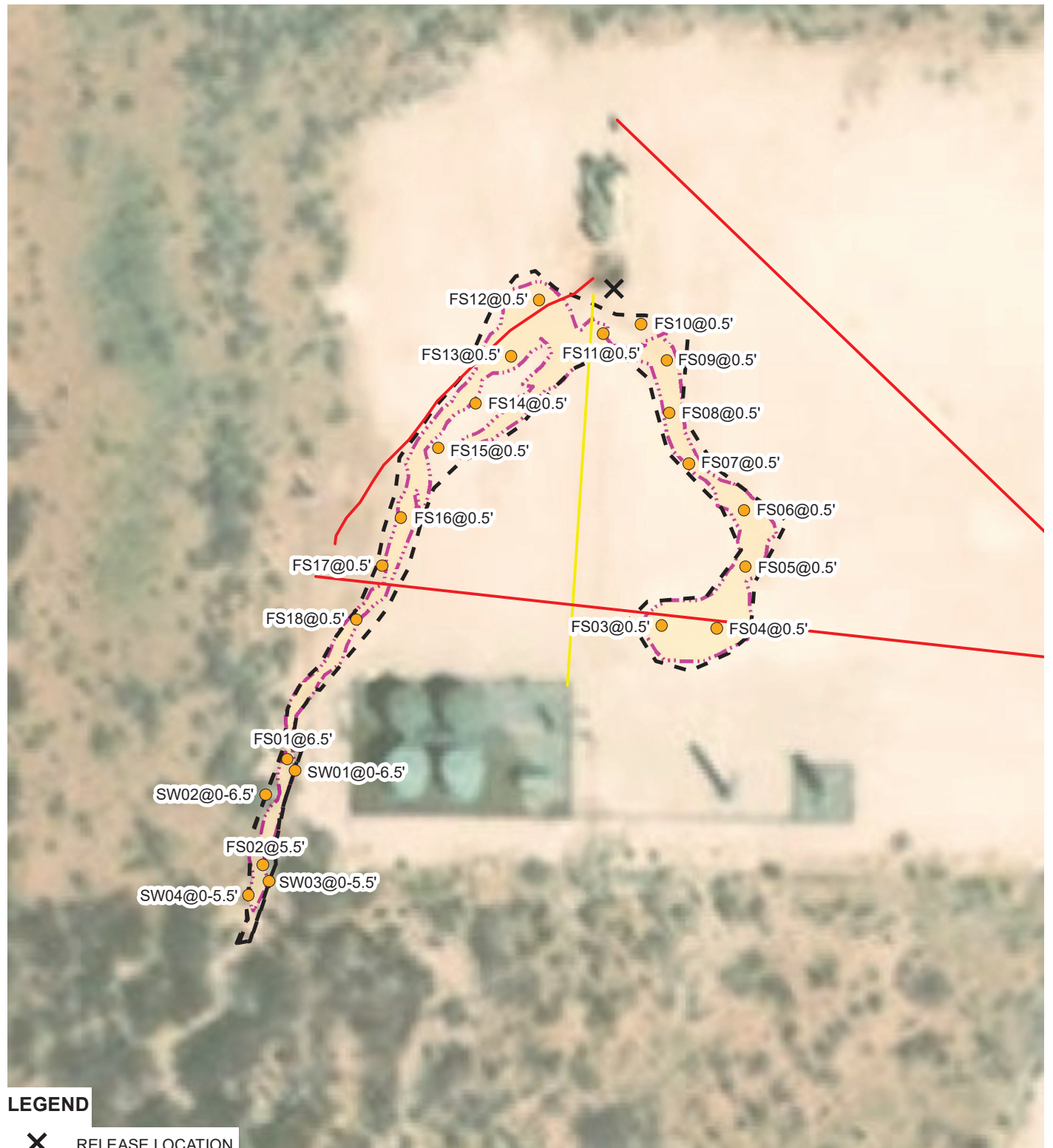


IMAGE COURTESY OF ESRI

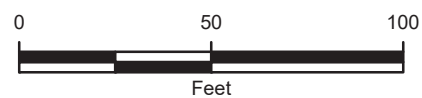


FIGURE 2
EXCAVATION SOIL SAMPLE LOCATIONS
 RDX FEDERAL 28 #013
 UNIT B SEC 28 T26S R30E
 EDDY COUNTY, NEW MEXICO
 WPX ENERGY PERMIAN, LLC.



TABLE





TABLE 1
SOIL ANALYTICAL RESULTS
RDX FEDERAL 28 #013
INCIDENT ID: NRM2012051816
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)	Application
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000	
SW01	0 - 6.5	05/19/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	88.9*	In-situ
SW02	0 - 6.5	05/20/2020	0.00364	<0.00199	<0.00199	<0.00199	0.00364	<49.8	<49.8	<49.8	<49.8	<49.8	<9.92*	In-situ
SW03	0 - 5.5	05/20/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	<9.94*	In-situ
SW04	0 - 5.5	05/19/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	<9.90*	In-situ
FS01	6.5	05/19/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	62.7*	In-situ
FS02	5.5	05/19/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	10.4*	In-situ
FS03	0.5	05/20/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	141	In-situ
FS04	0.5	05/20/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	133	In-situ
FS05	0.5	05/20/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	115	<49.9	115	115	2,710	In-situ
FS06	0.5	05/20/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	1,570	In-situ
FS07	0.5	05/20/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	3,820	In-situ
FS08	0.5	05/20/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	1,040	In-situ
FS09	0.5	05/20/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	8,570	In-situ
FS10	0.5	05/20/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	4,700	In-situ
FS11	0.5	05/20/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	487	In-situ
FS12	0.5	05/20/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	891	In-situ
FS13	0.5	05/20/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	9,660	In-situ
FS14	0.5	05/20/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	490	In-situ
FS15	0.5	05/20/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	7,540	In-situ
FS16	0.5	05/20/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	5,850	In-situ
FS17	0.5	05/20/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	10,900	In-situ
FS18	0.5	05/20/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	10,200	In-situ

Notes:

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram

MRO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
NE - not established
TPH - total petroleum hydrocarbons

Bold - indicates result exceeds the applicable regulatory standard
< - indicates result is below laboratory reporting limits

Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018
* - 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: 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	NRM2012051816
District RP	
Facility ID	
Application ID	

Release Notification

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 # <i>(assigned by OCD)</i>
Contact mailing address: 5315 Buena Vista Dr., Carlsbad, NM 88220	

Location of Release Source

Latitude 32.01884 _____ Longitude -103.88409 _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: RDX FEDERAL 28 #013	Site Type: Production Facility
Date Release Discovered: 4/15/2020	API# (if applicable): 30-015-41984

Unit Letter	Section	Township	Range	County
B	28	26S	30E	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) 10	Volume Recovered (bbls) 10
☒ Produced Water	Volume Released (bbls) 30	Volume Recovered (bbls) 15
	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: Failure of tubing on Murphy Gauge resulted release of approx. 40 bbls of production fluids.

$$bbl\ estimate = \frac{saturated\ soil\ volume\ (ft^3)}{4.21(\frac{ft^3}{bbl\ equivalent})} * estimated\ soil\ porosity(\%) + recovered\ fluids\ (bbl)$$

Incident ID	NRM2012051816
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Volume exceeded 25 bbls.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Email to NMOCD District II Office and NMOCD Director on 4/15/2019.	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: Jim Raley	Title: Environmental Specialist
Signature: 	Date: 4/28/2020
email: james.raley@wpenergy.com	Telephone: 575-689-7597
<u>OCD Only</u>	
Received by: <u>Ramona Marcus</u>	Date: <u>4/29/2020</u>

Incident ID	NRM2012051816
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	NRM2012051816
District RP	
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: 7/6/2020
email: james.raley@wpenergy.com Telephone: 575-689-7597

OCD Only

Received by: _____ Date: _____

Incident ID	NRM2012051816
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

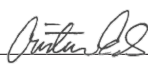
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public 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: Jim Raley Title: Environmental Specialist
Signature:  Date: 7/6/2020
email: james.raley@wpenergy.com Telephone: 575-689-7597

OCD Only

Received by: Cristina Eads Date: 07/07/2020

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

Closure Approved by: D E N I E D  Date: 09/08/2020

Printed Name: Cristina Eads Title: Environmental Specialist

ATTACHMENT 2: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



Photograph 1: View of the Site facing west.



Photograph 2: View of the Site facing northwest.



Photograph 3: View of the Site facing northeast.

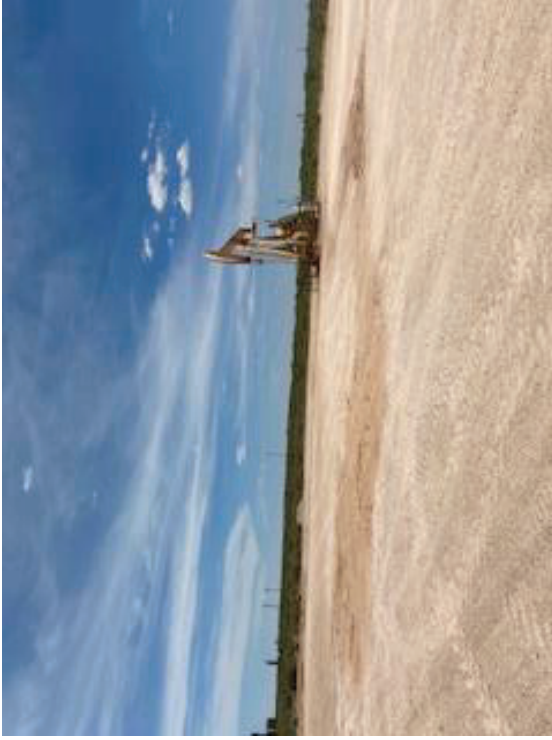


Photograph 4: View of the Site facing northeast.

PHOTOGRAPHIC LOG



Photograph 5: View of the initial excavation facing east.



Photograph 6: View of the initial excavation facing northwest.



Photograph 7: View of the release facing south.



Photograph 8: View of the release extent facing south.

RDX Federal 28 #013

32.01884, -103.88409

Photographs Taken: April 16, 2020 to May 20, 2020

PHOTOGRAPHIC LOG



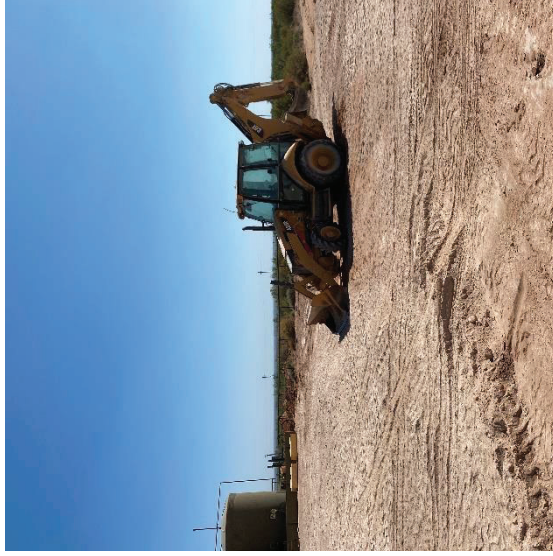
Photograph 9: View of the pasture excavation facing south.



Photograph 10: View of the pasture excavation facing south.



Photograph 11: View of the excavation facing southeast.



Photograph 12: View of the excavation facing southwest.

RDX Federal 28 #013
32.01884, -103.88409
Photographs Taken: April 16, 2020 to May 20, 2020

ATTACHMENT 3: LABORATORY ANALYTICAL RESULTS





Analytical Report 662199

for

LT Environmental, Inc.

Project Manager: Joseph Hernandez

RDX Federal 28-13

034820024

05.29.2020

Collected By: Client

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

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-6)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



05.29.2020

Project Manager: **Joseph Hernandez**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **662199**

RDX Federal 28-13

Project Address: Eddy County

Joseph Hernandez:

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) 662199. 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. 662199 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Holly Taylor'. The signature is written in a cursive, flowing style.

Holly Taylor
Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 662199****LT Environmental, Inc., Arvada, CO**

RDX Federal 28-13

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	05.19.2020 12:10	6.5 ft	662199-001
SW01	S	05.19.2020 12:21	0 - 6.5 ft	662199-002
FS02	S	05.19.2020 13:35	5.5 ft	662199-003
SW04	S	05.19.2020 13:40	0 - 5.5 ft	662199-004
SW02	S	05.20.2020 08:45	0 - 6.5 ft	662199-005
SW03	S	05.20.2020 08:48	0 - 5.5 ft	662199-006
FS03	S	05.20.2020 10:57	0.5 ft	662199-007
FS04	S	05.20.2020 11:01	0.5 ft	662199-008
FS05	S	05.20.2020 11:07	0.5 ft	662199-009
FS06	S	05.20.2020 11:10	0.5 ft	662199-010
FS07	S	05.20.2020 11:13	0.5 ft	662199-011
FS08	S	05.20.2020 11:23	0.5 ft	662199-012
FS09	S	05.20.2020 11:27	0.5 ft	662199-013
FS10	S	05.20.2020 11:30	0.5 ft	662199-014
FS11	S	05.20.2020 14:53	0.5 ft	662199-015
FS12	S	05.20.2020 15:00	0.5 ft	662199-016
FS13	S	05.20.2020 15:14	0.5 ft	662199-017
FS14	S	05.20.2020 15:17	0.5 ft	662199-018
FS15	S	05.20.2020 14:49	0.5 ft	662199-019
FS16	S	05.20.2020 14:52	0.5 ft	662199-020
FS17	S	05.20.2020 14:55	0.5 ft	662199-021
FS18	S	05.20.2020 14:58	0.5 ft	662199-022



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: RDX Federal 28-13

Project ID: 034820024
Work Order Number(s): 662199

Report Date: 05.29.2020
Date Received: 05.21.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3126724 Inorganic Anions by EPA 300

Lab Sample ID 662273-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 662199-021, -022.

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



Project Id: 034820024
Contact: Joseph Hernandez
Project Location: Eddy County

Certificate of Analysis Summary 662199

LT Environmental, Inc., Arvada, CO

Project Name: RDX Federal 28-13

Date Received in Lab: Thu 05.21.2020 08:57
Report Date: 05.29.2020 10:04
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	662199-001	<i>Field Id:</i>	662199-002	<i>Depth:</i>	662199-003	<i>Matrix:</i>	662199-004	<i>Sampled:</i>	662199-005	<i>Units/RL:</i>	662199-006
	<i>Field Id:</i>	FS01	<i>Depth:</i>	SW01	<i>Matrix:</i>	FS02	<i>Sampled:</i>	SW04	<i>Units/RL:</i>	SW02	<i>Units/RL:</i>	SW03
	<i>Depth:</i>	6.5- ft	<i>Matrix:</i>	0-6.5 ft	<i>Sampled:</i>	5.5- ft	<i>Units/RL:</i>	0-5.5 ft	<i>Units/RL:</i>	0-6.5 ft	<i>Units/RL:</i>	0-5.5 ft
	<i>Matrix:</i>	SOIL	<i>Sampled:</i>	SOIL	<i>Units/RL:</i>	SOIL	<i>Units/RL:</i>	SOIL	<i>Units/RL:</i>	SOIL	<i>Units/RL:</i>	SOIL
	<i>Sampled:</i>	05.19.2020 12:10	<i>Units/RL:</i>	05.19.2020 12:21	<i>Units/RL:</i>	05.19.2020 13:35	<i>Units/RL:</i>	05.19.2020 13:40	<i>Units/RL:</i>	05.20.2020 08:45	<i>Units/RL:</i>	05.20.2020 08:48
BTEX by EPA 8021B	<i>Extracted:</i>	05.21.2020 10:52	<i>Field Id:</i>	05.21.2020 10:52	<i>Depth:</i>	05.21.2020 10:52	<i>Matrix:</i>	05.21.2020 10:52	<i>Sampled:</i>	05.21.2020 10:52	<i>Units/RL:</i>	05.21.2020 10:52
	<i>Analyzed:</i>	05.21.2020 13:58	<i>Field Id:</i>	05.21.2020 14:20	<i>Depth:</i>	05.21.2020 14:41	<i>Matrix:</i>	05.21.2020 15:03	<i>Sampled:</i>	05.21.2020 15:24	<i>Units/RL:</i>	05.21.2020 15:46
	<i>Units/RL:</i>	mg/kg	<i>Field Id:</i>	mg/kg	<i>Depth:</i>	mg/kg	<i>Matrix:</i>	mg/kg	<i>Sampled:</i>	mg/kg	<i>Units/RL:</i>	mg/kg
	Benzene	<0.00200	RL	<0.00198	RL	<0.00200	RL	<0.00200	RL	<0.00199	RL	<0.00199
	Toluene	<0.00200	RL	<0.00198	RL	<0.00200	RL	<0.00200	RL	<0.00199	RL	<0.00199
	Ethylbenzene	<0.00200	RL	<0.00198	RL	<0.00200	RL	<0.00200	RL	<0.00199	RL	<0.00199
	m,p-Xylenes	<0.00399	RL	<0.00396	RL	<0.00399	RL	<0.00399	RL	<0.00398	RL	<0.00398
Inorganic Anions by EPA 300	<i>Extracted:</i>	05.21.2020 11:46	<i>Field Id:</i>	05.21.2020 11:46	<i>Depth:</i>	05.21.2020 11:46	<i>Matrix:</i>	05.21.2020 11:46	<i>Sampled:</i>	05.21.2020 11:46	<i>Units/RL:</i>	05.21.2020 11:46
	<i>Analyzed:</i>	05.21.2020 15:03	<i>Field Id:</i>	05.21.2020 15:21	<i>Depth:</i>	05.21.2020 15:26	<i>Matrix:</i>	05.21.2020 15:32	<i>Sampled:</i>	05.21.2020 15:38	<i>Units/RL:</i>	05.21.2020 15:56
	<i>Units/RL:</i>	mg/kg	<i>Field Id:</i>	mg/kg	<i>Depth:</i>	mg/kg	<i>Matrix:</i>	mg/kg	<i>Sampled:</i>	mg/kg	<i>Units/RL:</i>	mg/kg
	Chloride	62.7	RL	88.9	RL	10.4	RL	<9.90	RL	<9.92	RL	<9.94
	TPH by SW8015 Mod	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45
	Gasoline Range Hydrocarbons (GRO)	<50.2	50.2	<50.2	50.2	<50.0	50.0	<49.9	49.9	<49.8	49.8	<49.8
	Diesel Range Organics (DRO)	<50.2	50.2	<50.2	50.2	<50.0	50.0	<49.9	49.9	<49.8	49.8	<49.8
Motor Oil Range Hydrocarbons (MRO)	<i>Extracted:</i>	05.21.2020 12:06	<i>Field Id:</i>	05.21.2020 12:06	<i>Depth:</i>	05.21.2020 13:08	<i>Matrix:</i>	05.21.2020 13:28	<i>Sampled:</i>	05.21.2020 13:49	<i>Units/RL:</i>	05.21.2020 14:10
	<i>Analyzed:</i>	05.21.2020 12:06	<i>Field Id:</i>	05.21.2020 12:06	<i>Depth:</i>	05.21.2020 13:08	<i>Matrix:</i>	05.21.2020 13:28	<i>Sampled:</i>	05.21.2020 13:49	<i>Units/RL:</i>	05.21.2020 14:10
	<i>Units/RL:</i>	mg/kg	<i>Field Id:</i>	mg/kg	<i>Depth:</i>	mg/kg	<i>Matrix:</i>	mg/kg	<i>Sampled:</i>	mg/kg	<i>Units/RL:</i>	mg/kg
Total TPH		<50.2	50.2	<50.2	50.2	<50.0	50.0	<49.9	49.9	<49.8	49.8	<49.8

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

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

Holly Taylor
Project Manager



Project Id: 034820024
Contact: Joseph Hernandez
Project Location: Eddy County

Certificate of Analysis Summary 662199

LT Environmental, Inc., Arvada, CO

Project Name: RDX Federal 28-13

Date Received in Lab: Thu 05.21.2020 08:57
Report Date: 05.29.2020 10:04
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	662199-007	<i>Field Id:</i>	662199-008	<i>Depth:</i>	662199-009	<i>Matrix:</i>	662199-010	<i>Sampled:</i>	662199-011	<i>Units/RL:</i>	662199-012
	<i>Field Id:</i>	FS03	<i>Depth:</i>	FS04	<i>Matrix:</i>	FS05	<i>Sampled:</i>	FS06	<i>Field Id:</i>	FS07	<i>Depth:</i>	FS08
	<i>Depth:</i>	0.5- ft	<i>Matrix:</i>	0.5- ft	<i>Sampled:</i>	0.5- ft	<i>Field Id:</i>	0.5- ft	<i>Depth:</i>	0.5- ft	<i>Matrix:</i>	0.5- ft
	<i>Matrix:</i>	SOIL	<i>Sampled:</i>	SOIL	<i>Field Id:</i>	SOIL	<i>Depth:</i>	SOIL	<i>Matrix:</i>	SOIL	<i>Sampled:</i>	SOIL
	<i>Sampled:</i>	05.20.2020 10:57	<i>Field Id:</i>	05.20.2020 11:01	<i>Depth:</i>	05.20.2020 11:07	<i>Matrix:</i>	05.20.2020 11:10	<i>Sampled:</i>	05.20.2020 11:13	<i>Field Id:</i>	05.20.2020 11:23
BTEX by EPA 8021B	<i>Extracted:</i>	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52
	<i>Analyzed:</i>	05.21.2020 16:07	05.21.2020 16:29	05.21.2020 17:55	05.21.2020 17:55	05.21.2020 18:16	05.21.2020 18:16	05.21.2020 19:21	05.21.2020 19:21	05.21.2020 19:42	05.21.2020 19:42	05.21.2020 19:42
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Benzene	<0.00200	<0.00198	<0.00200	<0.00200	<0.00200	<0.00198	<0.00198	<0.00202	<0.00199	<0.00199	<0.00199
	Toluene	<0.00200	<0.00198	<0.00200	<0.00200	<0.00200	<0.00198	<0.00198	<0.00202	<0.00199	<0.00199	<0.00199
	Ethylbenzene	<0.00200	<0.00198	<0.00200	<0.00200	<0.00200	<0.00198	<0.00198	<0.00202	<0.00199	<0.00199	<0.00199
	m,p-Xylenes	<0.00401	<0.00397	<0.00399	<0.00399	<0.00399	<0.00397	<0.00397	<0.00403	<0.00398	<0.00398	<0.00398
Inorganic Anions by EPA 300	o-Xylene	<0.00200	<0.00198	<0.00200	<0.00200	<0.00200	<0.00198	<0.00198	<0.00202	<0.00199	<0.00199	<0.00199
	Total Xylenes	<0.00200	<0.00198	<0.00200	<0.00200	<0.00200	<0.00198	<0.00198	<0.00202	<0.00199	<0.00199	<0.00199
	Total BTEX	<0.00200	<0.00198	<0.00200	<0.00200	<0.00200	<0.00198	<0.00198	<0.00202	<0.00199	<0.00199	<0.00199
	<i>Extracted:</i>	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46
	<i>Analyzed:</i>	05.21.2020 16:02	05.21.2020 16:08	05.21.2020 16:14	05.21.2020 16:14	05.21.2020 16:19	05.21.2020 16:25	05.21.2020 16:25	05.21.2020 16:25	05.21.2020 16:43	05.21.2020 16:43	05.21.2020 16:43
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Chloride	141	9.96	133	9.94	2710	99.6	1570	50.1	3820	99.4	1040
TPH by SW8015 Mod	<i>Extracted:</i>	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45
	<i>Analyzed:</i>	05.21.2020 14:30	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Gasoline Range Hydrocarbons (GRO)	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
	Diesel Range Organics (DRO)	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Motor Oil Range Hydrocarbons (MRO)	<i>Extracted:</i>	05.21.2020 14:30	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11
	<i>Analyzed:</i>	05.21.2020 14:30	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11
Total TPH	<i>Extracted:</i>	05.21.2020 14:30	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11
	<i>Analyzed:</i>	05.21.2020 14:30	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11	05.21.2020 15:11

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

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

Holly Taylor

Holly Taylor
Project Manager



Project Id: 034820024
Contact: Joseph Hernandez
Project Location: Eddy County

Certificate of Analysis Summary 662199

LT Environmental, Inc., Arvada, CO

Project Name: RDX Federal 28-13

Date Received in Lab: Thu 05.21.2020 08:57
Report Date: 05.29.2020 10:04
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	662199-013	<i>Field Id:</i>	662199-014	<i>Depth:</i>	662199-015	<i>Matrix:</i>	662199-016	<i>Sampled:</i>	662199-017	<i>Units/RL:</i>	662199-018
	<i>Field Id:</i>	FS09	<i>Depth:</i>	FS10	<i>Matrix:</i>	FS11	<i>Sampled:</i>	FS12	<i>Units/RL:</i>	FS13	<i>Sampled:</i>	FS14
	<i>Depth:</i>	0.5- ft	<i>Matrix:</i>	0.5- ft	<i>Sampled:</i>	0.5- ft	<i>Units/RL:</i>	0.5- ft	<i>Sampled:</i>	0.5- ft	<i>Units/RL:</i>	0.5- ft
	<i>Matrix:</i>	SOIL	<i>Sampled:</i>	SOIL	<i>Units/RL:</i>	SOIL	<i>Sampled:</i>	SOIL	<i>Units/RL:</i>	SOIL	<i>Sampled:</i>	SOIL
	<i>Sampled:</i>	05.20.2020 11:27	<i>Units/RL:</i>	05.20.2020 11:30	<i>Sampled:</i>	05.20.2020 14:53	<i>Units/RL:</i>	05.20.2020 15:00	<i>Sampled:</i>	05.20.2020 15:14	<i>Units/RL:</i>	05.20.2020 15:17
BTEX by EPA 8021B	<i>Extracted:</i>	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 10:52
	<i>Analyzed:</i>	05.21.2020 20:04	05.21.2020 20:25	05.21.2020 20:47	05.21.2020 20:47	05.21.2020 21:08	05.21.2020 21:30	05.21.2020 21:51	05.21.2020 21:51	05.21.2020 21:51	05.21.2020 21:51	05.21.2020 21:51
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Benzene	<0.00199	<0.00201	<0.00202	<0.00202	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00201	<0.00201
	Toluene	<0.00199	<0.00201	<0.00202	<0.00202	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00201	<0.00201
	Ethylbenzene	<0.00199	<0.00201	<0.00202	<0.00202	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00201	<0.00201
Inorganic Anions by EPA 300	m,p-Xylenes	<0.00398	<0.00402	<0.00404	<0.00404	<0.00397	<0.00397	<0.00397	<0.00396	<0.00396	<0.00402	<0.00402
	o-Xylene	<0.00199	<0.00201	<0.00202	<0.00202	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00201	<0.00201
	Total Xylenes	<0.00199	<0.00201	<0.00202	<0.00202	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00201	<0.00201
	Total BTEX	<0.00199	<0.00201	<0.00202	<0.00202	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00201	<0.00201
	<i>Extracted:</i>	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 11:46
	<i>Analyzed:</i>	05.21.2020 16:49	05.21.2020 17:06	05.21.2020 17:12	05.21.2020 17:12	05.21.2020 17:18	05.21.2020 17:24	05.21.2020 17:30	05.21.2020 17:30	05.21.2020 17:30	05.21.2020 17:30	05.21.2020 17:30
TPH by SW8015 Mod	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Chloride	8570	4700	487	487	891	201	490	490	490	490	490
	<i>Extracted:</i>	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45	05.21.2020 11:45
	<i>Analyzed:</i>	05.21.2020 13:08	05.21.2020 13:28	05.21.2020 13:49	05.21.2020 13:49	05.21.2020 14:10	05.21.2020 14:30	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 14:51	05.21.2020 14:51
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Gasoline Range Hydrocarbons (GRO)	<50.2	<49.9	<50.2	<50.2	<50.2	<49.9	<50.0	<49.9	<50.0	<50.0	<50.0
Motor Oil Range Hydrocarbons (MRO)	Diesel Range Organics (DRO)	<50.2	<49.9	<50.2	<50.2	<50.2	<49.9	<50.0	<49.9	<50.0	<50.0	<50.0
	Motor Oil Range Hydrocarbons (MRO)	<50.2	<49.9	<50.2	<50.2	<50.2	<49.9	<50.0	<49.9	<50.0	<50.0	<50.0
	Total TPH	<50.2	<49.9	<50.2	<50.2	<50.2	<49.9	<50.0	<49.9	<50.0	<50.0	<50.0

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

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

Holly Taylor
Project Manager



Certificate of Analysis Summary 662199

LT Environmental, Inc., Arvada, CO

Received by OCD: 7/7/2020 7:23:47 AM

Page 28 of 82

Project Name: RDX Federal 28-13

Date Received in Lab: Thu 05.21.2020 08:57
Report Date: 05.29.2020 10:04
Project Manager: Jessica Kramer

Project Id: 034820024
Contact: Joseph Hernandez
Project Location: Eddy County

<i>Analysis Requested</i>	<i>Lab Id:</i>	662199-019	662199-020	662199-021	662199-022
	<i>Field Id:</i>	FS15	FS16	FS17	FS18
	<i>Depth:</i>	0.5- ft	0.5- ft	0.5- ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	05.20.2020 14:49	05.20.2020 14:52	05.20.2020 14:55	05.20.2020 14:58
BTEX by EPA 8021B	<i>Extracted:</i>	05.21.2020 10:52	05.21.2020 10:52	05.21.2020 12:58	05.21.2020 12:58
	<i>Analyzed:</i>	05.21.2020 22:13	05.21.2020 22:34	05.21.2020 16:44	05.21.2020 17:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
	Toluene	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Ethylbenzene		<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
	m,p-Xylenes	<0.00397 0.00397	<0.00403 0.00403	<0.00401 0.00401	<0.00402 0.00402
	o-Xylene	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
	Total Xylenes	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
	Total BTEX	<0.00198 0.00198	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201
Inorganic Anions by EPA 300	<i>Extracted:</i>	05.21.2020 11:46	05.21.2020 11:46	05.21.2020 15:50	05.21.2020 15:50
	<i>Analyzed:</i>	05.21.2020 17:36	05.21.2020 17:42	05.21.2020 18:17	05.21.2020 18:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	7540 200	5850 201	10900 X 198	10200 200
TPH by SW8015 Mod	<i>Extracted:</i>	05.21.2020 11:45	05.21.2020 17:00	05.21.2020 17:00	05.21.2020 17:00
	<i>Analyzed:</i>	05.21.2020 15:11	05.21.2020 22:44	05.21.2020 23:05	05.21.2020 23:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Gasoline Range Hydrocarbons (GRO)	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.0 50.0
	Diesel Range Organics (DRO)	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.0 50.0
	Total TPH	<50.2 50.2	<50.0 50.0	<50.3 50.3	<50.0 50.0

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

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

Holly Taylor

Holly Taylor
Project Manager



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS01** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-001 Date Collected: 05.19.2020 12:10 Sample Depth: 6.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	62.7	9.96	mg/kg	05.21.2020 15:03		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126671

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.21.2020 12:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.21.2020 12:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.21.2020 12:06	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.21.2020 12:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	05.21.2020 12:06	
o-Terphenyl	84-15-1	105	%	70-135	05.21.2020 12:06	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS01**
Lab Sample Id: 662199-001

Matrix: Soil
Date Collected: 05.19.2020 12:10

Date Received: 05.21.2020 08:57
Sample Depth: 6.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.21.2020 13:58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.21.2020 13:58	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.21.2020 13:58	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.21.2020 13:58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.21.2020 13:58	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.21.2020 13:58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.21.2020 13:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116	%	70-130	05.21.2020 13:58	
4-Bromofluorobenzene	460-00-4	103	%	70-130	05.21.2020 13:58	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **SW01** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-002 Date Collected: 05.19.2020 12:21 Sample Depth: 0 - 6.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	88.9	9.96	mg/kg	05.21.2020 15:21		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126720

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.21.2020 12:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.21.2020 12:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.21.2020 12:06	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.21.2020 12:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-135	05.21.2020 12:06	
o-Terphenyl	84-15-1	128	%	70-135	05.21.2020 12:06	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **SW01**
Lab Sample Id: 662199-002

Matrix: Soil
Date Collected: 05.19.2020 12:21

Date Received: 05.21.2020 08:57
Sample Depth: 0 - 6.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.21.2020 14:20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.21.2020 14:20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.21.2020 14:20	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	05.21.2020 14:20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.21.2020 14:20	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.21.2020 14:20	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.21.2020 14:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115	%	70-130	05.21.2020 14:20	
4-Bromofluorobenzene	460-00-4	110	%	70-130	05.21.2020 14:20	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS02** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-003 Date Collected: 05.19.2020 13:35 Sample Depth: 5.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.4	10.0	mg/kg	05.21.2020 15:26		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126671

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.21.2020 13:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.21.2020 13:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.21.2020 13:08	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.21.2020 13:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	126	%	70-135	05.21.2020 13:08	
o-Terphenyl	84-15-1	124	%	70-135	05.21.2020 13:08	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS02**
Lab Sample Id: 662199-003

Matrix: Soil
Date Collected: 05.19.2020 13:35

Date Received: 05.21.2020 08:57
Sample Depth: 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.21.2020 14:41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.21.2020 14:41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.21.2020 14:41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.21.2020 14:41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.21.2020 14:41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.21.2020 14:41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.21.2020 14:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115	%	70-130	05.21.2020 14:41	
4-Bromofluorobenzene	460-00-4	104	%	70-130	05.21.2020 14:41	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **SW04** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-004 Date Collected: 05.19.2020 13:40 Sample Depth: 0 - 5.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.90	9.90	mg/kg	05.21.2020 15:32	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126671

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.21.2020 13:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	05.21.2020 13:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.21.2020 13:28	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	05.21.2020 13:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	05.21.2020 13:28	
o-Terphenyl	84-15-1	115	%	70-135	05.21.2020 13:28	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **SW04**
Lab Sample Id: 662199-004

Matrix: Soil
Date Collected: 05.19.2020 13:40

Date Received: 05.21.2020 08:57
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.21.2020 15:03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.21.2020 15:03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.21.2020 15:03	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.21.2020 15:03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.21.2020 15:03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.21.2020 15:03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.21.2020 15:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	05.21.2020 15:03		
1,4-Difluorobenzene	540-36-3	115	%	70-130	05.21.2020 15:03		



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **SW02** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-005 Date Collected: 05.20.2020 08:45 Sample Depth: 0 - 6.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.92	9.92	mg/kg	05.21.2020 15:38	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126671

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	05.21.2020 13:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	05.21.2020 13:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	05.21.2020 13:49	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	05.21.2020 13:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	05.21.2020 13:49	
o-Terphenyl	84-15-1	123	%	70-135	05.21.2020 13:49	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **SW02**
Lab Sample Id: 662199-005

Matrix: Soil
Date Collected: 05.20.2020 08:45

Date Received: 05.21.2020 08:57
Sample Depth: 0 - 6.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.00364	0.00199	mg/kg	05.21.2020 15:24		1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.21.2020 15:24	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.21.2020 15:24	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.21.2020 15:24	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.21.2020 15:24	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.21.2020 15:24	U	1
Total BTEX		0.00364	0.00199	mg/kg	05.21.2020 15:24		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	05.21.2020 15:24		
1,4-Difluorobenzene	540-36-3	115	%	70-130	05.21.2020 15:24		



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **SW03**
Lab Sample Id: 662199-006

Matrix: Soil
Date Collected: 05.20.2020 08:48

Date Received: 05.21.2020 08:57
Sample Depth: 0 - 5.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3126723

Date Prep: 05.21.2020 11:46

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.94	9.94	mg/kg	05.21.2020 15:56	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3126671

Date Prep: 05.21.2020 11:45

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	05.21.2020 14:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	05.21.2020 14:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	05.21.2020 14:10	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	05.21.2020 14:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	05.21.2020 14:10	
o-Terphenyl	84-15-1	120	%	70-135	05.21.2020 14:10	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **SW03**
Lab Sample Id: 662199-006

Matrix: Soil
Date Collected: 05.20.2020 08:48

Date Received: 05.21.2020 08:57
Sample Depth: 0 - 5.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.21.2020 15:46	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.21.2020 15:46	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.21.2020 15:46	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.21.2020 15:46	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.21.2020 15:46	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.21.2020 15:46	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.21.2020 15:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	70-130	05.21.2020 15:46	
1,4-Difluorobenzene	540-36-3	114	%	70-130	05.21.2020 15:46	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS03** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-007 Date Collected: 05.20.2020 10:57 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	141	9.96	mg/kg	05.21.2020 16:02		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126671

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.21.2020 14:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.21.2020 14:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.21.2020 14:30	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.21.2020 14:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.21.2020 14:30	
o-Terphenyl	84-15-1	99	%	70-135	05.21.2020 14:30	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS03**
Lab Sample Id: 662199-007

Matrix: Soil
Date Collected: 05.20.2020 10:57

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.21.2020 16:07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.21.2020 16:07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.21.2020 16:07	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.21.2020 16:07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.21.2020 16:07	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.21.2020 16:07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.21.2020 16:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	70-130	05.21.2020 16:07	
1,4-Difluorobenzene	540-36-3	111	%	70-130	05.21.2020 16:07	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS04** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-008 Date Collected: 05.20.2020 11:01 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	133	9.94	mg/kg	05.21.2020 16:08		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126671

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.21.2020 14:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.21.2020 14:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.21.2020 14:51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.21.2020 14:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	05.21.2020 14:51	
o-Terphenyl	84-15-1	98	%	70-135	05.21.2020 14:51	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS04**
Lab Sample Id: 662199-008

Matrix: Soil
Date Collected: 05.20.2020 11:01

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.21.2020 16:29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.21.2020 16:29	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.21.2020 16:29	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	05.21.2020 16:29	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.21.2020 16:29	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.21.2020 16:29	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.21.2020 16:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	05.21.2020 16:29	
1,4-Difluorobenzene	540-36-3	115	%	70-130	05.21.2020 16:29	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS05** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-009 Date Collected: 05.20.2020 11:07 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2710	99.6	mg/kg	05.21.2020 16:14		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 17:00 Basis: Wet Weight
 Seq Number: 3126755

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.22.2020 04:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	115	49.9	mg/kg	05.22.2020 04:51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.22.2020 04:51	U	1
Total TPH	PHC635	115	49.9	mg/kg	05.22.2020 04:51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	05.22.2020 04:51	
o-Terphenyl	84-15-1	99	%	70-135	05.22.2020 04:51	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS05**
Lab Sample Id: 662199-009

Matrix: Soil
Date Collected: 05.20.2020 11:07

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.21.2020 17:55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.21.2020 17:55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.21.2020 17:55	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.21.2020 17:55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.21.2020 17:55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.21.2020 17:55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.21.2020 17:55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	05.21.2020 17:55		
4-Bromofluorobenzene	460-00-4	98	%	70-130	05.21.2020 17:55		



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS06** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-010 Date Collected: 05.20.2020 11:10 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1570	50.1	mg/kg	05.21.2020 16:19		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126671

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.21.2020 15:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.21.2020 15:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.21.2020 15:11	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.21.2020 15:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.21.2020 15:11	
o-Terphenyl	84-15-1	101	%	70-135	05.21.2020 15:11	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS06**
Lab Sample Id: 662199-010

Matrix: Soil
Date Collected: 05.20.2020 11:10

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.21.2020 18:16	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.21.2020 18:16	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.21.2020 18:16	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	05.21.2020 18:16	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.21.2020 18:16	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.21.2020 18:16	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.21.2020 18:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	70-130	05.21.2020 18:16	
1,4-Difluorobenzene	540-36-3	116	%	70-130	05.21.2020 18:16	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS07** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-011 Date Collected: 05.20.2020 11:13 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3820	99.4	mg/kg	05.21.2020 16:25		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 17:00 Basis: Wet Weight
 Seq Number: 3126755

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	05.21.2020 21:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	05.21.2020 21:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	05.21.2020 21:22	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	05.21.2020 21:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	05.21.2020 21:22	
o-Terphenyl	84-15-1	101	%	70-135	05.21.2020 21:22	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS07**
Lab Sample Id: 662199-011

Matrix: Soil
Date Collected: 05.20.2020 11:13

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.21.2020 19:21	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.21.2020 19:21	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.21.2020 19:21	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.21.2020 19:21	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.21.2020 19:21	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.21.2020 19:21	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.21.2020 19:21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	116	%	70-130	05.21.2020 19:21		
4-Bromofluorobenzene	460-00-4	106	%	70-130	05.21.2020 19:21		



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS08** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-012 Date Collected: 05.20.2020 11:23 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1040	9.96	mg/kg	05.21.2020 16:43		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 17:00 Basis: Wet Weight
 Seq Number: 3126755

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.21.2020 22:24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.21.2020 22:24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.21.2020 22:24	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.21.2020 22:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	05.21.2020 22:24	
o-Terphenyl	84-15-1	111	%	70-135	05.21.2020 22:24	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS08**
Lab Sample Id: 662199-012

Matrix: Soil
Date Collected: 05.20.2020 11:23

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.21.2020 19:42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.21.2020 19:42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.21.2020 19:42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.21.2020 19:42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.21.2020 19:42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.21.2020 19:42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.21.2020 19:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	91	%	70-130	05.21.2020 19:42	
4-Bromofluorobenzene	460-00-4	95	%	70-130	05.21.2020 19:42	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS09** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-013 Date Collected: 05.20.2020 11:27 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8570	199	mg/kg	05.21.2020 16:49		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126720

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.21.2020 13:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.21.2020 13:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.21.2020 13:08	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.21.2020 13:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	05.21.2020 13:08	
o-Terphenyl	84-15-1	103	%	70-135	05.21.2020 13:08	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS09**
Lab Sample Id: 662199-013

Matrix: Soil
Date Collected: 05.20.2020 11:27

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.21.2020 20:04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.21.2020 20:04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.21.2020 20:04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.21.2020 20:04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.21.2020 20:04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.21.2020 20:04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.21.2020 20:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	115	%	70-130	05.21.2020 20:04	
4-Bromofluorobenzene	460-00-4	101	%	70-130	05.21.2020 20:04	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS10** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-014 Date Collected: 05.20.2020 11:30 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4700	99.8	mg/kg	05.21.2020 17:06		10

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126720

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.21.2020 13:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	05.21.2020 13:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.21.2020 13:28	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	05.21.2020 13:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	05.21.2020 13:28	
o-Terphenyl	84-15-1	115	%	70-135	05.21.2020 13:28	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS10**
Lab Sample Id: 662199-014

Matrix: Soil
Date Collected: 05.20.2020 11:30

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.21.2020 20:25	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.21.2020 20:25	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.21.2020 20:25	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.21.2020 20:25	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.21.2020 20:25	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.21.2020 20:25	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.21.2020 20:25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	101	%	70-130	05.21.2020 20:25		
4-Bromofluorobenzene	460-00-4	98	%	70-130	05.21.2020 20:25		



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS11** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-015 Date Collected: 05.20.2020 14:53 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	487	10.0	mg/kg	05.21.2020 17:12		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126720

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.21.2020 13:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.21.2020 13:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.21.2020 13:49	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.21.2020 13:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	05.21.2020 13:49	
o-Terphenyl	84-15-1	98	%	70-135	05.21.2020 13:49	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS11**
Lab Sample Id: 662199-015

Matrix: Soil
Date Collected: 05.20.2020 14:53

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.21.2020 20:47	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.21.2020 20:47	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.21.2020 20:47	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	05.21.2020 20:47	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.21.2020 20:47	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.21.2020 20:47	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.21.2020 20:47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	05.21.2020 20:47		
1,4-Difluorobenzene	540-36-3	115	%	70-130	05.21.2020 20:47		



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS12** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-016 Date Collected: 05.20.2020 15:00 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	891	10.1	mg/kg	05.21.2020 17:18		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126720

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.21.2020 14:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.21.2020 14:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.21.2020 14:10	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.21.2020 14:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	05.21.2020 14:10	
o-Terphenyl	84-15-1	112	%	70-135	05.21.2020 14:10	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS12**
Lab Sample Id: 662199-016

Matrix: Soil
Date Collected: 05.20.2020 15:00

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.21.2020 21:08	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.21.2020 21:08	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.21.2020 21:08	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	05.21.2020 21:08	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.21.2020 21:08	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.21.2020 21:08	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.21.2020 21:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	05.21.2020 21:08		
1,4-Difluorobenzene	540-36-3	115	%	70-130	05.21.2020 21:08		



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS13** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-017 Date Collected: 05.20.2020 15:14 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9660	201	mg/kg	05.21.2020 17:24		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126720

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	05.21.2020 14:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	05.21.2020 14:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	05.21.2020 14:30	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	05.21.2020 14:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	05.21.2020 14:30	
o-Terphenyl	84-15-1	112	%	70-135	05.21.2020 14:30	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS13**
Lab Sample Id: 662199-017

Matrix: Soil
Date Collected: 05.20.2020 15:14

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.21.2020 21:30	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.21.2020 21:30	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.21.2020 21:30	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	05.21.2020 21:30	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.21.2020 21:30	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.21.2020 21:30	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.21.2020 21:30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	05.21.2020 21:30		
1,4-Difluorobenzene	540-36-3	116	%	70-130	05.21.2020 21:30		



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS14** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-018 Date Collected: 05.20.2020 15:17 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	490	9.90	mg/kg	05.21.2020 17:30		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126720

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.21.2020 14:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.21.2020 14:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.21.2020 14:51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.21.2020 14:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	05.21.2020 14:51	
o-Terphenyl	84-15-1	114	%	70-135	05.21.2020 14:51	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS14**
Lab Sample Id: 662199-018

Matrix: Soil
Date Collected: 05.20.2020 15:17

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.21.2020 21:51	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.21.2020 21:51	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.21.2020 21:51	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.21.2020 21:51	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.21.2020 21:51	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.21.2020 21:51	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.21.2020 21:51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	114	%	70-130	05.21.2020 21:51		
4-Bromofluorobenzene	460-00-4	103	%	70-130	05.21.2020 21:51		



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS15** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-019 Date Collected: 05.20.2020 14:49 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7540	200	mg/kg	05.21.2020 17:36		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 11:45 Basis: Wet Weight
 Seq Number: 3126720

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	05.21.2020 15:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	05.21.2020 15:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	05.21.2020 15:11	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	05.21.2020 15:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	05.21.2020 15:11	
o-Terphenyl	84-15-1	115	%	70-135	05.21.2020 15:11	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS15**
Lab Sample Id: 662199-019

Matrix: Soil
Date Collected: 05.20.2020 14:49

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	05.21.2020 22:13	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	05.21.2020 22:13	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	05.21.2020 22:13	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	05.21.2020 22:13	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	05.21.2020 22:13	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	05.21.2020 22:13	U	1
Total BTEX		<0.00198	0.00198	mg/kg	05.21.2020 22:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116	%	70-130	05.21.2020 22:13	
4-Bromofluorobenzene	460-00-4	102	%	70-130	05.21.2020 22:13	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS16** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-020 Date Collected: 05.20.2020 14:52 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 11:46 Basis: Wet Weight
 Seq Number: 3126723

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5850	201	mg/kg	05.21.2020 17:42		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 17:00 Basis: Wet Weight
 Seq Number: 3126755

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.21.2020 22:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.21.2020 22:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.21.2020 22:44	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.21.2020 22:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	05.21.2020 22:44	
o-Terphenyl	84-15-1	113	%	70-135	05.21.2020 22:44	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS16**
Lab Sample Id: 662199-020

Matrix: Soil
Date Collected: 05.20.2020 14:52

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3126867

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 10:52

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.21.2020 22:34	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.21.2020 22:34	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.21.2020 22:34	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.21.2020 22:34	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.21.2020 22:34	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.21.2020 22:34	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.21.2020 22:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	70-130	05.21.2020 22:34		
1,4-Difluorobenzene	540-36-3	113	%	70-130	05.21.2020 22:34		



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS17** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-021 Date Collected: 05.20.2020 14:55 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 15:50 Basis: Wet Weight
 Seq Number: 3126724

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10900	198	mg/kg	05.21.2020 18:17	X	20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 17:00 Basis: Wet Weight
 Seq Number: 3126755

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	05.21.2020 23:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	05.21.2020 23:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	05.21.2020 23:05	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	05.21.2020 23:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	05.21.2020 23:05	
o-Terphenyl	84-15-1	108	%	70-135	05.21.2020 23:05	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS17**
Lab Sample Id: 662199-021

Matrix: Soil
Date Collected: 05.20.2020 14:55

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MRB

Seq Number: 3126744

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 12:58

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.21.2020 16:44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.21.2020 16:44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.21.2020 16:44	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.21.2020 16:44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.21.2020 16:44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.21.2020 16:44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.21.2020 16:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	05.21.2020 16:44	
4-Bromofluorobenzene	460-00-4	96	%	70-130	05.21.2020 16:44	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS18** Matrix: Soil Date Received: 05.21.2020 08:57
 Lab Sample Id: 662199-022 Date Collected: 05.20.2020 14:58 Sample Depth: 0.5 ft
 Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 05.21.2020 15:50 Basis: Wet Weight
 Seq Number: 3126724

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10200	200	mg/kg	05.21.2020 18:35		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 05.21.2020 17:00 Basis: Wet Weight
 Seq Number: 3126755

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	05.21.2020 23:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	05.21.2020 23:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	05.21.2020 23:25	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	05.21.2020 23:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	05.21.2020 23:25	
o-Terphenyl	84-15-1	117	%	70-135	05.21.2020 23:25	



Certificate of Analytical Results 662199

LT Environmental, Inc., Arvada, CO

RDX Federal 28-13

Sample Id: **FS18**
Lab Sample Id: 662199-022

Matrix: Soil
Date Collected: 05.20.2020 14:58

Date Received: 05.21.2020 08:57
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MRB

Seq Number: 3126744

Prep Method: SW5035A

% Moisture:

Date Prep: 05.21.2020 12:58

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.21.2020 17:04	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.21.2020 17:04	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.21.2020 17:04	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.21.2020 17:04	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.21.2020 17:04	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.21.2020 17:04	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.21.2020 17:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	112	%	70-130	05.21.2020 17:04	
4-Bromofluorobenzene	460-00-4	98	%	70-130	05.21.2020 17:04	



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.
RDX Federal 28-13

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3126723

MB Sample Id: 7703832-1-BLK

Matrix: Solid

LCS Sample Id: 7703832-1-BKS

Prep Method: E300P

Date Prep: 05.21.2020

LCSD Sample Id: 7703832-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	251	100	250	100	90-110	0	20	mg/kg	05.21.2020 14:51	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3126724

MB Sample Id: 7703833-1-BLK

Matrix: Solid

LCS Sample Id: 7703833-1-BKS

Prep Method: E300P

Date Prep: 05.21.2020

LCSD Sample Id: 7703833-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	250	100	250	100	90-110	0	20	mg/kg	05.21.2020 18:05	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3126723

Parent Sample Id: 662199-001

Matrix: Soil

MS Sample Id: 662199-001 S

Prep Method: E300P

Date Prep: 05.21.2020

MSD Sample Id: 662199-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	62.7	200	257	97	257	97	90-110	0	20	mg/kg	05.21.2020 15:09	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3126723

Parent Sample Id: 662199-011

Matrix: Soil

MS Sample Id: 662199-011 S

Prep Method: E300P

Date Prep: 05.21.2020

MSD Sample Id: 662199-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3820	199	4000	90	4010	95	90-110	0	20	mg/kg	05.21.2020 16:31	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3126724

Parent Sample Id: 662199-021

Matrix: Soil

MS Sample Id: 662199-021 S

Prep Method: E300P

Date Prep: 05.21.2020

MSD Sample Id: 662199-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10900	199	11200	151	11200	151	90-110	0	20	mg/kg	05.21.2020 18:23	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3126724

Parent Sample Id: 662273-011

Matrix: Soil

MS Sample Id: 662273-011 S

Prep Method: E300P

Date Prep: 05.21.2020

MSD Sample Id: 662273-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1710	200	1900	95	1920	105	90-110	1	20	mg/kg	05.21.2020 19:51	

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

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

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

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



LT Environmental, Inc.
RDX Federal 28-13

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126671

MB Sample Id: 7703860-1-BLK

Matrix: Solid

LCS Sample Id: 7703860-1-BKS

Prep Method: SW8015P

Date Prep: 05.21.2020

LCSD Sample Id: 7703860-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1010	101	1000	100	70-135	1	35	mg/kg	05.21.2020 11:25	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	1050	105	70-135	2	35	mg/kg	05.21.2020 11:25	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	101		122		118		70-135	%	05.21.2020 11:25			
o-Terphenyl	98		108		105		70-135	%	05.21.2020 11:25			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126720

MB Sample Id: 7703872-1-BLK

Matrix: Solid

LCS Sample Id: 7703872-1-BKS

Prep Method: SW8015P

Date Prep: 05.21.2020

LCSD Sample Id: 7703872-1-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	805	81	1020	102	70-135	24	35	mg/kg	05.21.2020 11:25	
Diesel Range Organics (DRO)	<50.0	1000	753	75	920	92	70-135	20	35	mg/kg	05.21.2020 11:25	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	102		106		130		70-135	%	05.21.2020 11:25			
o-Terphenyl	108		98		115		70-135	%	05.21.2020 11:25			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126755

MB Sample Id: 7703923-1-BLK

Matrix: Solid

LCS Sample Id: 7703923-1-BKS

Prep Method: SW8015P

Date Prep: 05.21.2020

LCSD Sample Id: 7703923-1-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	953	95	889	89	70-135	7	35	mg/kg	05.21.2020 20:41	
Diesel Range Organics (DRO)	<50.0	1000	852	85	805	81	70-135	6	35	mg/kg	05.21.2020 20:41	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	97		125		115		70-135	%	05.21.2020 20:41			
o-Terphenyl	103		104		99		70-135	%	05.21.2020 20:41			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126671

Matrix: Solid

MB Sample Id: 7703860-1-BLK

Prep Method: SW8015P

Date Prep: 05.21.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	05.21.2020 11:05	

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.

RDX Federal 28-13

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126720

Matrix: Solid

Prep Method: SW8015P

Date Prep: 05.21.2020

MB Sample Id: 7703872-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	05.21.2020 11:05	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126755

Matrix: Solid

Prep Method: SW8015P

Date Prep: 05.21.2020

MB Sample Id: 7703923-1-BLK

Parameter

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	05.21.2020 20:20	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126671

Matrix: Soil

Prep Method: SW8015P

Date Prep: 05.21.2020

Parent Sample Id: 662199-001

MS Sample Id: 662199-001 S

MSD Sample Id: 662199-001 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	949	94	965	97	70-135	2	35	mg/kg	05.21.2020 12:27	
Diesel Range Organics (DRO)	<50.3	1010	1020	101	1030	103	70-135	1	35	mg/kg	05.21.2020 12:27	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		124		70-135	%	05.21.2020 12:27
o-Terphenyl	114		114		70-135	%	05.21.2020 12:27

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126720

Matrix: Soil

Prep Method: SW8015P

Date Prep: 05.21.2020

Parent Sample Id: 662199-002

MS Sample Id: 662199-002 S

MSD Sample Id: 662199-002 SD

Parameter

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	995	998	100	904	90	70-135	10	35	mg/kg	05.21.2020 12:27	
Diesel Range Organics (DRO)	<49.8	995	879	88	811	81	70-135	8	35	mg/kg	05.21.2020 12:27	

Surrogate

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		114		70-135	%	05.21.2020 12:27
o-Terphenyl	119		108		70-135	%	05.21.2020 12:27

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

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

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

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



LT Environmental, Inc.
RDX Federal 28-13

Analytical Method: TPH by SW8015 Mod

Seq Number: 3126755

Parent Sample Id: 662199-011

Matrix: Soil

MS Sample Id: 662199-011 S

Prep Method: SW8015P

Date Prep: 05.21.2020

MSD Sample Id: 662199-011 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)	<50.2	1000	903	90	1000	100	70-135	10	35	mg/kg	05.21.2020 21:43	
Diesel Range Organics (DRO)	<50.2	1000	799	80	895	90	70-135	11	35	mg/kg	05.21.2020 21:43	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		128		70-135	%	05.21.2020 21:43
o-Terphenyl	111		124		70-135	%	05.21.2020 21:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3126867

MB Sample Id: 7703834-1-BLK

Matrix: Solid

LCS Sample Id: 7703834-1-BKS

Prep Method: SW5035A

Date Prep: 05.21.2020

LCSD Sample Id: 7703834-1-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	0.117	117	70-130	7	35	mg/kg	05.21.2020 12:11	
Toluene	<0.00200	0.100	0.0991	99	0.106	106	70-130	7	35	mg/kg	05.21.2020 12:11	
Ethylbenzene	<0.00200	0.100	0.0920	92	0.0989	99	71-129	7	35	mg/kg	05.21.2020 12:11	
m,p-Xylenes	<0.00400	0.200	0.178	89	0.191	96	70-135	7	35	mg/kg	05.21.2020 12:11	
o-Xylene	<0.00200	0.100	0.0915	92	0.0984	98	71-133	7	35	mg/kg	05.21.2020 12:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	116		111		110		70-130	%	05.21.2020 12:11
4-Bromofluorobenzene	102		97		97		70-130	%	05.21.2020 12:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3126744

MB Sample Id: 7703835-1-BLK

Matrix: Solid

LCS Sample Id: 7703835-1-BKS

Prep Method: SW5035A

Date Prep: 05.21.2020

LCSD Sample Id: 7703835-1-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	0.114	114	0.114	114	70-130	0	35	mg/kg	05.21.2020 14:58	
Toluene	<0.00200	0.100	0.109	109	0.110	110	70-130	1	35	mg/kg	05.21.2020 14:58	
Ethylbenzene	<0.00200	0.100	0.104	104	0.103	103	71-129	1	35	mg/kg	05.21.2020 14:58	
m,p-Xylenes	<0.00400	0.200	0.214	107	0.214	107	70-135	0	35	mg/kg	05.21.2020 14:58	
o-Xylene	<0.00200	0.100	0.107	107	0.107	107	71-133	0	35	mg/kg	05.21.2020 14:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		105		105		70-130	%	05.21.2020 14:58
4-Bromofluorobenzene	95		91		89		70-130	%	05.21.2020 14:58

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.
RDX Federal 28-13

Analytical Method: BTEX by EPA 8021B

Seq Number: 3126867

Parent Sample Id: 662199-001

Matrix: Soil

MS Sample Id: 662199-001 S

Prep Method: SW5035A

Date Prep: 05.21.2020

MSD Sample Id: 662199-001 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	0.113	113	0.100	100	70-130	12	35	mg/kg	05.21.2020 12:54	
Toluene	<0.00200	0.0998	0.104	104	0.0951	95	70-130	9	35	mg/kg	05.21.2020 12:54	
Ethylbenzene	<0.00200	0.0998	0.0975	98	0.0945	95	71-129	3	35	mg/kg	05.21.2020 12:54	
m,p-Xylenes	<0.00399	0.200	0.189	95	0.191	96	70-135	1	35	mg/kg	05.21.2020 12:54	
o-Xylene	<0.00200	0.0998	0.0944	95	0.0941	94	71-133	0	35	mg/kg	05.21.2020 12:54	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		106		70-130	%	05.21.2020 12:54
4-Bromofluorobenzene	97		102		70-130	%	05.21.2020 12:54

Analytical Method: BTEX by EPA 8021B

Seq Number: 3126744

Parent Sample Id: 662199-021

Matrix: Soil

MS Sample Id: 662199-021 S

Prep Method: SW5035A

Date Prep: 05.21.2020

MSD Sample Id: 662199-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.113	113	0.117	116	70-130	3	35	mg/kg	05.21.2020 20:08	
Toluene	<0.00200	0.100	0.109	109	0.127	126	70-130	15	35	mg/kg	05.21.2020 20:08	
Ethylbenzene	<0.00200	0.100	0.101	101	0.0987	98	71-129	2	35	mg/kg	05.21.2020 20:08	
m,p-Xylenes	<0.00401	0.200	0.209	105	0.204	101	70-135	2	35	mg/kg	05.21.2020 20:08	
o-Xylene	<0.00200	0.100	0.102	102	0.100	99	71-133	2	35	mg/kg	05.21.2020 20:08	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		108		70-130	%	05.21.2020 20:08
4-Bromofluorobenzene	94		94		70-130	%	05.21.2020 20:08

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 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:

662199

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 Corsado, NM (432) 704-5440
 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 589-6701

www.xenco.com

Page 1 of 3

Project Manager:	Joseph Hernandez	Bill to: (if different)	Jim Raley
Company Name:	3300 North A Street	Company Name:	WDX Energy
Address:	17 Environmental Inc., Permian Office	Address:	5315 Buena Vista Dr
City, State ZIP:	Midland, TX 79105	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 894-5641	Email:	smith@wpxenergy.com, james.raley@wpxenergy.com

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

Project Name:	RDX Federal 28-13	Turn Around	☒
Project Number:	034920024	Routine	☒
Project Location:	Eddy county	Rush:	
Sampler's Name:	Fatima Smith	Due Date:	
PO #:	4/15/20 spill date	Quote #:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	1.8			Thermometer ID	TNND07	
Received Intact:	Yes	No		Correction Factor:	-0.2	
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	28	
Sample Custody Seals:	Yes	No	N/A			

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Analysis Request	Preservative Codes	Sample Comments
ES01		S	5/19/20	1210	6.5'	1	X TPH (EPA 8015)	MeOH: Me	
SW01				1221	0-6.5'		X BTEX (EPA 0-8021)	None: NO	
FS02				1335	5.5'		X Chloride (EPA 300.0)	HNO3: HN	
SW04				1340	0-5.5'			H2SO4: H2	
SW02			5/26/20	0845	0-6.5'			HCL: HL	
SW03				0848	0-5.5'			NaOH: Na	
FS03				1057	0.5'			Zn Acetate+ NaOH: Zn	
ES04				1101					
ES05				1107					
FS06				1110					

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

TCIP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Fatima</i>	<i>[Signature]</i>	5/21/20 08:57			
		2			
		4			
		6			



Chain of Custody

Work Order No:

6642199

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) 699-6701

www.xenco.com

Page 2 of 3

Project Manager: Joseph Hernandez
 Company Name: LT Environmental, Inc. Permian Office
 Address: 3300 North A Street
 City, State ZIP: Midland, TX 79705
 Phone: (432) 894-5641

Bill to: (if different) Jim Raley
 Company Name: WDX Energy
 Address: 5315 Buena Vista Dr
 City, State ZIP: Carlsbad, NM 88220

Project Name: RDX Federal 28-13
 Project Number: 034820024
 Project Location: Eddy county
 Sampler's Name: Fatima Smith
 PO #: 4/15/20 spill date
 Quote #:

Turn Around
 Routine ☒
 Rush:
 Due Date:

Email: james.raley@wpenergy.com, jhernandez@tandem

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

ANALYSIS REQUEST

Temperature (°C):
 Received Intact:
 Cooler Custody Seals:
 Sample Custody Seals:

Temp Blank: Yes No
 Wet Ice: Yes No
 Thermometer ID:
 Correction Factor:
 Total Containers:

Sample Identification

Matrix

Date Sampled

Time Sampled

Depth

Number of Containers

TPH (EPA 8015)

BIEX (EPA 0-8021)

Chloride (EPA 300.0)

Preservative Codes

MeOH: Me
 None: NO
 HNO3: HN
 H2SO4: H2
 HCL: HL
 NaOH: Na
 Zn Acetate+ NaOH: Zn

TAT starts the day received by the lab, if received by 4:00pm

Total 200.7 / 6010 200.8 / 6020:

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

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

1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Signature

Signature

5/21/20 08:57

2

4

6



Chain of Custody

Work Order No: 1002199

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) 281-3333
Hobbs, NM (575-392-7550)

Page 3 of 3

Project Manager:	Joseph Hernandez	Bill to: (if different)	Jim Raley
Company Name:	LT Environmental, Inc, Permian Office	Company Name:	WPX Energy
Address:	3300 North A Street	Address:	5315 Buena Vista Dr
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 894-5641	Email:	james.raley@wpxenergy.com, jhernandez@ltenv.com

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

[illegible]

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

Number of Containers

A 8015)

PA 0=8021)

(EPA 300.0)

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP)	BTEX (E)	Chloride	Sample Comments									
ES17	S	5/20/20	1455	0.5	1	X	X	X										
ES18	S	5/20/20	1458	0.5	1	X	X	X										
<i>1458</i>																		

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
			Cu	Fe	Pb
			Mg	Mn	Mo
			Ni	K	Se
			Ag	SiO ₂	Na
			Sn	U	V
			Zn		
TCLP / SPLP	6010:	8RCRA	Sb	As	Ba
			Be	Cd	Cr
			Cu	Pb	Mn
			Mo	Ni	Se
			Ag	Ti	U

16331 / 245, 1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 		5/21/20 08:57	2		
3			4		
5			6		

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 05.21.2020 08.57.00 AM

Work Order #: 662199

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 05.21.2020

Checklist reviewed by:



Jessica Kramer

Date: 05.22.2020