District I 1625 N. French Dr., Hohbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rto 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

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

10 AQ 1		M-50	Rele	ease Notific	atior	and Co	orrective A	ction	1			
MABIE	2125	1588	-01	retart		OPERA'			🗵 Initi	al Report	Final I	Repor
				Contact: Tony Savoie								
Facility Na	me: JRU-I	0	04 Carist	oad, 14.1VI. 88220			No. 575-887-73: be: Exploration :		nduction			
Surface Ow	nev Keder	·al		[Minaud C			a Dayrotation	and i ic				
Buttuce Ow	nor, reac	d1		Mineral O					APINO	o.30-015 - 2,	3075	
Unit Letter	Castina	Transla	I n			OF REI						
H	Section 1	Township 238	Rnnge 30E	Feel from the 1980	North/ Nor	South Line rth	Feet from the 660	East/\ Eas	West Line t	County Eddy		
				Latitude N 32.3	35568	Longitude	W 103.82759	2°				
2) 00 1					URE	OF RELI						
Type of Role	asc: Produc	ed water and	condensati	e			Release: 50 bbls condensate	.PW	Volume l		13 bbls, PW and	12
Source of Re	Icase: Prod	uced water tan	k	_	-	Date and I-	lour of Occurrence	e:			scovery: 7/29/15	5 ลเ
Was Immedia	ate Notice (liven9	_		-		ne unknown		approxim	nately 8:30 a	LHL	
** (13 THITICE)	are ryones		Yes [No Not Re	quired	11 (4.8, 10	Whom? Mike B	ratcher,	Heather Pa	uterson, and	LJun Amos	
By Whom?						Date and I-	lour 7/29/15, first	attenno	1 at 1:51 p.	m. confirme	d at 6:14 p.m.	_
Was a Water	course Read		Van K	1 N.			dume Impacting t		ercourse.			
		- V - V	Yes 🛚						N	M OIL	CONSERVA	TIC
If a Watercou	irse was Im	pacted, Descr	ibe Fully,*							ARTE	SIA DISTRICT	
Describe Cau A coupling or	ise of Problem the water	em and Remed transfer pump	lial Action failed can	n Taken.* using the tank to o	verilow.	. The couplin	ig was replaced if	ie day o	f the releas	RE	CEIVED	
The spill imp vacuum truck	acted about		side the cr	en.* arthen containmen b the NMOCD and				the free	standing f	luid was rec	overed with a	
regulations at public health should their o or the enviror	Toperators or the envir perations h inient. In a	are required to ronment. The ave failed to a	report an acceptance dequately CD accep	is true and completed of the certain reserved in C-141 reportings and retained of a C-141 report of a C-141 reserved.	dease no it by the mediate	tifications a NMOCD m contaminati	nd perform correct arked as "Final R on that pose a three the operator of	ctive act eport" c eat to gi respons	ions for rel locs not rel ound wate ibility for e	cases which ieve the ope r, surface w compliance v	may endanger crator of liability ater, human hea with any other	u
			3				OIL CON	SERV	ATION	DIVISIO	CAIC	
Signature:	1_ony	- Dim	us_						1	/ /		
Printed Name	: Tony Sav	nie			/	Approved by	Environmental S	pecialis r	H	2/	2	_
	7.2	t and Remedi		cialist	/	Approval Dat	o: 7/31/1	5	Expiration	Date: N	41	
B-mail ∧ddre.	ss: tasavoie	@basspet.com				Conditions of				Attached		
	30/19		Phone:	432-556-8730			per O.C.D. F			lines		
ttach Addit	ional Shee	ts If Necessa	iry				VIEDIATION	TOP I	DSAL N		2002	
					_A	TER THAI	4	1/			2RP-31	1.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
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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		
District RP	2RP-3179	
Facility ID		
Application ID		

Release Notification

Responsible Party

Responsible Party: XTO Energy, Inc				OGRID:	OGRID: 5380		
Contact Name: Kyle Littrell				Contact T	Contact Telephone: (432)-221-7331		
Contact ema	il: Kyle_Lit	ttrell@xtoenergy.c	om	Incident #	Incident #: 2RP-3179		
Contact mail NM 88220	ing address	522 W. Mermod,	Suite 704 Carlsbac	1,			
			Location	of Release S	ource		
Latitude 32.3	35568		(NAD 83 in dec	Longitude cimal degrees to 5 deci	-103.827592		
Site Name JF	RU-10			Site Type	Exploration and Production		
Date Release	Discovered	07/29/15		API# (if ap	plicable) 30-015-23075		
Unit Letter	Section	Township	Range	Cou	nty		
Н	1	23S	30E	Ede			
Crude Oil	Materia	(s) Released (Select al Volume Release	that apply and attach	calculations or specific	volume Recovered (bbls)		
Crude Oil	Materia	(s) Released (Select al	that apply and attach	calculations or specific			
□ Produced	Water	Volume Release	d (bbls) 50		Volume Recovered (bbls) 13		
		Is the concentrat produced water	ion of dissolved ch	loride in the	☐ Yes ☐ No		
□ Condensar	te	Volume Release	d (bbls) 5		Volume Recovered (bbls) 2		
Natural G		Volume Release	d (Mcf)		Volume Recovered (Mcf)		
Other (describe) Volume/Weight Released (provide units				units)	Volume/Weight Recovered (provide units)		
The spill impa	the water to	ransfer pump faile 1000 sq.ft. inside t red with a vacuum	he earthen contain	to overflow. The ment around the C	coupling was replaced the day of the release. Dil and produced water tanks. All of the free		

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-3179
Facility ID	
Application ID	

Was this a major	If YES, for what reason(s) does the responsible party consider this a major release?
release as defined by 19.15.29.7(A) NMAC?	The release was greater than 25 bbls.
, ,	The follows was greater than 25 obis.
X Yes No	
If YES, was immediate no	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, by Tony Savoie to	Mike Bratcher/Heather Patterson (NMOCD), and Jim Amos (BLM) on 7/29/2015.
	Initial Response
The responsible p	party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
	The state of the s
☐ The source of the rele	ase has been stopped.
The impacted area has	s been secured to protect human health and the environment.
Released materials ha	ve been contained via the use of berms or dikes, absorbent pads, or other containment devices.
	coverable materials have been removed and managed appropriately.
If all the actions described	above have not been undertaken, explain why:
Per 19.15.29.8 B. (4) NM.	AC the responsible party may commence remediation immediately after discovery of a release. If remediation
has begun, please attach a	a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred
	t area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the infor-	mation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and required to report and/or file certain release notifications and perform corrective actions for releases which may endanger
public health or the environm	ent. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have
failed to adequately investiga	te and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
and/or regulations.	a 8 Transport does not reneve the operator of responsibility for compnance with any other rederat, state, or local laws
Printed Name: Kyle	Littrell Title: SH&E Coordinator
	Date: 4/12/2019
Signature:	Date: 4/12/2019
email: Kyle Littrell@xtoe	nergy.com Telephone:432-221-7331
OCD O-I-	
OCD Only	
Received by:	Date:

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-3179
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?	>100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ⊠ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ⊠ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ⊠ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ⊠ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ⊠ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ⊠ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	⊠ Yes □ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ⊠ No

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

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

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

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-3179
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release not public health or the environment. The acceptance of a C-141 report by the failed to adequately investigate and remediate contamination that pose a thr addition, OCD acceptance of a C-141 report does not relieve the operator of and/or regulations.	offications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have reat to groundwater, surface water, human health or the environment. In
Printed Name: Kyle Littrell Signature: email: Kyle Littrell@xtoenergy.com	Title: SH&E Coordinator Date: 4/12/2019 Telephone: (432)-221-7331
OCD Only Received by:	Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-3179
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: Each of the following items must h	be included in the plan.
 ☑ Detailed description of proposed remediation technique ☑ Scaled sitemap with GPS coordinates showing delineation poin ☑ Estimated volume of material to be remediated ☑ Closure criteria is to Table 1 specifications subject to 19.15.29. ☑ Proposed schedule for remediation (note if remediation plan times) 	.12(C)(4) NMAC
Deferral Requests Only: Each of the following items must be co	refirmed as part of any request for deferral of remediation.
	production equipment where remediation could cause a major facility
Extents of contamination must be fully delineated.	
Contamination does not cause an imminent risk to human healt	h, the environment, or groundwater.
I hereby certify that the information given above is true and comple rules and regulations all operators are required to report and/or file which may endanger public health or the environment. The accepta liability should their operations have failed to adequately investigate surface water, human health or the environment. In addition, OCD responsibility for compliance with any other federal, state, or local limits of the environment.	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of
Printed Name: Kyle Littrell	Title: SH&E Coordinator
Signature:	Date: 4/12/2019
email: Kyle Littrell@xtoenergy.com	Telephone: (432)-221-7331
OCD Only	
Received by:	Date:
☐ Approved	Approval Denied Deferral Approved
Signature:	Date:

NM OIL CONSERVATION

ARTESIA DISTRICT

DEC 2 2 2015

Form C-141 Revised August 8, 2011

Submit Copy to appropriate District Office in accordance with 19.15.29 NMAC.

District 1 1625 N. French Dr., Hobbs, NM 88240; District II BILS First St., Artesia; NM 88210 District III 1000 Rio Brazos Road, Aziec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

> Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

Release Notific	cation and Corrective	Action
7	OPERATOR	M

Initial Report ☐ Final Report Contact: Amy Ruth Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220 Telephone No. 575-887-7329 Facility Name: James Ranch Unit #10 Battery Facility Type: Exploration and Production Surface Owner: Federal

Mineral Owner: Federal API No. 30-015-23075

LOCATION OF RELEASE

Unit Letter H	Section	Township 23S	Range 30F	Feet from the 1980	North/South Line North	Feet from the 660	East/West Line East	County Eddy	-
------------------	---------	-----------------	--------------	-----------------------	---------------------------	-------------------	------------------------	----------------	---

Latitude 32.335560° Longitude -103.827584°

NATURE	OF RELEASE		
Type of Release Produced Water	Volume of Release 81 bbls	Volume Recovered 40 bbls	
Source of Release Tank Overflow	Date and Hour of Occurrence 12/14/2015 time unknown	Date and Hour of Discovery 12/14/2015 11:15 am	
Was Immediate Notice Given? ☐ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher/Heather Patterson (NMOCD), Jim Amos (BLM)		
By Whom? Amy Ruth	Date and Hour 12/14/2015 4:52	2 om	
Was a Watercourse Reached? ☐ Yes ☑ No	If YES, Volume Impacting the Watercourse. N/A		
If a Watercourse was Impacted, Describe Fully.* N/A			
Describe Cause of Problem and Remedial Action Taken.* Coupling on water transfer pump failed and pump shut down. Produced was repaired.	vater tank filled and overflowed into	the battery earthen containment. The pump	
Describe Area Affected and Cleanup Action Taken.* The leak affected 1550 ft² of well pad within the tank containment and star	nding fluids were recovered.		
I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release not public health or the environment. The acceptance of a C-141 report by the should their operations have failed to adequately investigate and remediate or the environment. In addition, NMOCD acceptance of a C-141 report defederal, state, or local laws and/or regulations.	otifications and perform corrective as NMOCD marked as "Final Report" contamination that pose a threat to	ctions for releases which may endanger does not relieve the operator of liability	
Signature: Amy a Ruth	OIL CONSER Approved by Environmental Special	VATION DIVISION	
	Approval Date: 2 23 5	Expiration Date: NA	
E-mail Address: ACRuth@basspet.com	Conditions of Approval:		

Phone: 432-661-0571

* Attach Additional Sheets If Necessary

Conditions of Approval:
Remediation per O.C.D. Rules & Guideline Red SUBMIT REMEDIATION PROPOSAL NO

District I
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State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	
District RP	2RP-3464
Facility ID	الرساني فللتفاريان فالد
Application ID	

Release Notification

Responsible Party

	Responsible Party: XTO Energy, Inc				OGRID: 5380	
				Contact	t Telephone: (432)-221-7331	
Contact email: Kyle_Littrell@xtoenergy.com In				Incident	t#: 2RP-3464	
Contact mail NM 88220	ing address	522 W. Mermod, S	Suite 704 Carlsbad,			
			Location of	of Release	Source	
atitude <u>32.3</u>	35560		(NAD 83 in deci	Longitude Longitude nal degrees to 5 de	e -103.827584	
Site Name Ja	mes Ranch	Unit #10 Battery	1 1 2 2 2 3 3	Site Typ	e Exploration and Production	
Date Release	Discovered	12/14/15		API# (if a	applicable) 30-015-23075	
Unit Letter	Section	Township	Range	Со	unty	
Н	1	23S	30E		ddy	
Material(s) Released (Select all that apply and attach c			Nature and			
Crude Oil	Materia	l(s) Released (Select all	that apply and attach ca		fic justification for the volumes provided below)	
Crude Oil		Volume Released	that apply and attach call (bbls)		fic justification for the volumes provided below) Volume Recovered (bbls)	
		Volume Released Volume Released	that apply and attach call (bbls)	lculations or speci	Volume Recovered (bbls) Volume Recovered (bbls) 40	
✓ Produced	Water	Volume Released Volume Released Is the concentration	that apply and attach call (bbls) (bbls) 81 on of dissolved chl	lculations or speci	fic justification for the volumes provided below) Volume Recovered (bbls)	
	Water	Volume Released Volume Released	that apply and attach call (bbls) (bbls) 81 on of dissolved chl 10,000 mg/l?	lculations or speci	Volume Recovered (bbls) Volume Recovered (bbls) 40	
✓ Produced	Water	Volume Released Volume Released Is the concentration produced water >	that apply and attach call (bbls) I (bbls) 81 on of dissolved chl 10,000 mg/l? I (bbls)	lculations or speci	Volume Recovered (bbls) Volume Recovered (bbls) Volume Recovered (bbls) 40 Yes No	
➤ Produced □ Condensat	Water	Volume Released Volume Released Is the concentration produced water > Volume Released Volume Released	that apply and attach call (bbls) I (bbls) 81 on of dissolved chl 10,000 mg/l? I (bbls)	alculations or special	Volume Recovered (bbls) Volume Recovered (bbls) Volume Recovered (bbls) 40 Yes No Volume Recovered (bbls)	

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-3464
Facility ID	Blow brong messer, tox
Application ID	

Was this a major release as defined by	If YES, for what reason(s) doe	es the responsible party consider this a major release?
19.15.29.7(A) NMAC?	The release was greater than 2	5 bbls.
⊠ Yes □ No		
If YES, was immediate n	notice given to the OCD? By wh	om? To whom? When and by what means (phone, email, etc)?
Yes, immediate notice w	as given by Amy Ruth to Mike B	Bratcher/ Heather Patterson (NMOCD), and Jim Amos (BLM) on 12/14/15.
	I	nitial Response
The responsible	party must undertake the following actio	ons immediately unless they could create a safety hazard that would result in injury
The source of the rele	ease has been stopped.	
☐ The impacted area ha	as been secured to protect human	health and the environment.
Released materials ha	ave been contained via the use of	f berms or dikes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been r	emoved and managed appropriately.
has begun, please attach	a narrative of actions to date. If	ommence remediation immediately after discovery of a release. If remediation f remedial efforts have been successfully completed or if the release occurred NMAC), please attach all information needed for closure evaluation.
regulations all operators are public health or the environr failed to adequately investig	required to report and/or file certain nent. The acceptance of a C-141 rep ate and remediate contamination that	release notifications and perform corrective actions for releases which may endanger port by the OCD does not relieve the operator of liability should their operations have at pose a threat to groundwater, surface water, human health or the environment. In operator of responsibility for compliance with any other federal, state, or local laws
Printed Name: Kylo	Littrell	Title: SH&E Coordinator
Signature:	Thull	Date: 4/12/2019
email: Kyle Littrell@xtoo	energy.com	Telephone:432-221-7331
OCD Only		
Received by:		Date:

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-3464
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?	>100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ⊠ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ⊠ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ⊠ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	⊠ Yes □ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☑ No

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

Characterization Report Checklist: Each of the following items must be included in the report. Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. Field data Data table of soil contaminant concentration data Depth to water determination Determination of water sources and significant watercourses within ⅓-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

Incident ID	
District RP	2RP-3464
Facility ID	control between the con
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature: Date: 4/12/2019

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

OCD Only

Received by: Date: Date: _______

State of New Mexico Oil Conservation Division

Incident ID	Banketia Walter to Are
District RP	2RP-3464
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: Each of the following items must be	e included in the plan.
 Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation poin Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29. Proposed schedule for remediation (note if remediation plan tin 	12(C)(4) NMAC
Deferral Requests Only: Each of the following items must be co	nfirmed as part of any request for deferral of remediation.
Contamination must be in areas immediately under or around p deconstruction.	roduction equipment where remediation could cause a major facility
Extents of contamination must be fully delineated.	
Contamination does not cause an imminent risk to human health	h, the environment, or groundwater.
	provisite and the master supplied as a more strong of section.
I hereby certify that the information given above is true and comple rules and regulations all operators are required to report and/or file which may endanger public health or the environment. The accepta liability should their operations have failed to adequately investigate surface water, human health or the environment. In addition, OCD responsibility for compliance with any other federal, state, or local limits of the surface water.	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of
Printed Name: Kyle Littrell	Title: SH&E Coordinator
Signature:	Date: 4/12/2019
email: Kyle Littrell@xtoenergy.com	Telephone: (432)-221-7331
OCD Only	
Received by:	Date:
☐ Approved ☐ Approved with Attached Conditions of	Approval
Signature:	Date:

District I
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State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	NAB1904653072
District RP	2RP-5243
Facility ID	
Application ID	pAB1904652533

Release Notification

Responsible Party

Contact Non	Responsible Party: XTO Energy, Inc			OGRID	: 5380	
Contact Name: Kyle Littrell			ers of sixteened	Contact	Telephone: (432)-221-7331	
Contact email: Kyle_Littrell@xtoenergy.com			om	Incident	t#: 2RP-5243	
Contact mail NM 88220	ling address	522 W. Mermod, S	Suite 704 Carlsbad,			
			Location o	of Release	Source	
atitude 32,3	335540		(NAD 83 in deci	Longitud	e -103.827513	
Site Name Ja	ames Ranch	Unit #10 Battery	Sweet hope	Site Typ	Site Type Bulk Storage and Separation Facility	
Date Release	Discovered	01/29/19		API# (if	applicable) 30-015-23075	
Unit Letter	Section	Township	Range	Co	ounty	
Н	1	238	30E		ddy	
	Manualat	(A) P. 1 (C) 1	Nature and	1529 (1885 Service) 1555		
Crude Oil	Material	(s) Released (Select all	that apply and attach ca	1529 (1885 Service) 1555	fic justification for the volumes provided below)	
Crude Oil		(s) Released (Select all Volume Released Volume Released	that apply and attach call (bbls) 9.8	1529 (1885 Service) 1555	fic justification for the volumes provided below) Volume Recovered (bbls) 7	
		Volume Released Volume Released Is the concentrati	that apply and attach co 1 (bbls) 9.8 1 (bbls) on of dissolved chl	alculations or speci	fic justification for the volumes provided below)	
	Water	Volume Released	that apply and attach cold (bbls) 9.8 1 (bbls) on of dissolved chl 10,000 mg/l?	alculations or speci	fic justification for the volumes provided below) Volume Recovered (bbls) 7 Volume Recovered (bbls)	
Produced	Water	Volume Released Volume Released Is the concentration produced water >	that apply and attach call (bbls) 9.8 I (bbls) on of dissolved chladous mg/l? I (bbls)	alculations or speci	fic justification for the volumes provided below) Volume Recovered (bbls) 7 Volume Recovered (bbls) Yes No	
☐ Condensa	Water	Volume Released Is the concentrati produced water > Volume Released Volume Released	that apply and attach call (bbls) 9.8 I (bbls) on of dissolved chladous mg/l? I (bbls)	alculations or speci	Volume Recovered (bbls) Volume Recovered (bbls) Volume Recovered (bbls) Volume Recovered (bbls) Volume Recovered (bbls)	

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-5243
Facility ID	SAGrammatica per esta
Application ID	Pervisional superior (

Was this a major release as defined by	II YES, for what reason(s)) does the responsible party co	onsider this a major release?
19.15.29.7(A) NMAC?			
☐ Yes ⊠ No			
If YES, was immediate n	otice given to the OCD? By	y whom? To whom? When ar	nd by what means (phone, email, etc)?
		Initial Response	
The responsible	party must undertake the following	actions immediately unless they could	d create a safety hazard that would result in injury
☐ The source of the rele	ease has been stopped.		
☐ The impacted area has	s been secured to protect hu	man health and the environme	ent.
Released materials ha	we been contained via the us	se of berms or dikes, absorben	t pads, or other containment devices.
All free liquids and re	coverable materials have be	en removed and managed app	propriately.
If all the actions described	d above have not been under	taken, explain why:	
Per 19.15.29.8 B. (4) NM	AC the responsible party ma	ay commence remediation imr	nediately after discovery of a release. If remediation
has begun, please attach a	a narrative of actions to date	e. If remedial efforts have be	en successfully completed or if the release occurred information needed for closure evaluation.
I hereby certify that the infor	mation given above is true and	complete to the best of my know!	ledge and understand that pursuant to OCD rules and
public health or the environm	nent. The acceptance of a C-14	I report by the OCD does not reli	form corrective actions for releases which may endanger ieve the operator of liability should their operations have
failed to adequately investiga	ate and remediate contamination	n that pose a threat to groundwater	er, surface water, human health or the environment. In r compliance with any other federal, state, or local laws
and/or regulations.	a C-1+1 report does not reneve	the operator of responsionity for	r compliance with any other tederal, state, or local laws
Printed Name: Kyle	Littrell	Title: SH&	E Coordinator
Signature.	Volat	Date: 4/1.	2/2019
email: Kyle Littrell@xtoe	nergy.com	Telephone:	432-221-7331
OCD O			
OCD Only			
Received by:		Date:	

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-5243
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

Incident ID	THE RESERVE TO SELECT	
District RP	2RP-5243	
Facility ID	NEW TRANSPORT	
Application ID		

I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release not public health or the environment. The acceptance of a C-141 report by the failed to adequately investigate and remediate contamination that pose a the addition, OCD acceptance of a C-141 report does not relieve the operator of and/or regulations.	otifications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have reat to groundwater, surface water, human health or the environment. In
Printed Name: Kyle Littrell	Title: SH&E Coordinator
Signature:	Date: 4/12/2019
email: Kyle Littrell@xtoenergy.com	Telephone:(432)-221-7331
OCD Only	
Received by:	Date:

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-5243
Facility ID	
Application ID	Applied Astronomy State of the

Remediation Plan

Remediation Plan Checklist: Each of the following items must b	e included in the plan.
 ☑ Detailed description of proposed remediation technique ☑ Scaled sitemap with GPS coordinates showing delineation poin ☑ Estimated volume of material to be remediated ☑ Closure criteria is to Table 1 specifications subject to 19.15.29. ☑ Proposed schedule for remediation (note if remediation plan tin 	12(C)(4) NMAC
Deferral Requests Only: Each of the following items must be con	nfirmed as part of any request for deferral of remediation.
	roduction equipment where remediation could cause a major facility
Extents of contamination must be fully delineated.	
Contamination does not cause an imminent risk to human health	h, the environment, or groundwater.
	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of
Printed Name: Kyle Littrell	Title: SH&E Coordinator
Signature 199 Mario	Date: 4/12/2019
email: Kyle Littrell@xtoenergy.com	Telephone: (432)-221-7331
OCD Only	
Received by:	Date:
☐ Approved	Approval Denied Deferral Approved
Signature:	Date:

Bratcher, Mike, EMNRD

From: Ashley Ager <aager@ltenv.com>
Sent: Wednesday, May 1, 2019 12:44 PM

To: Bratcher, Mike, EMNRD; caweaver@blm.gov

Cc: Hamlet, Robert, EMNRD; adrian_baker@xtoenergy.com; Littrell, Kyle; Venegas, Victoria, EMNRD;

Billings, Bradford, EMNRD; jamos@blm.gov; McKinney, Deborah

Subject: RE: [EXT] Re: [EXTERNAL] RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Mike and Crystal,

On behalf of XTO, we will proceed with the direction provided by NMOCD and BLM and complete a more detailed delineation of impacted soil, as well as investigate groundwater depth and flow direction. We will schedule the drilling event to occur in the next two weeks, then will submit a revised remediation work plan by June 28, 2019. Thank you for your input and if you have additional questions, please let me know.

Ashley

Ashley Ager Vice President of Regional Offices

(970) 385-1096 office (970) 946-1093 mobile

From: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>

Sent: Monday, April 29, 2019 8:23 AM

To: Ashley Ager <aager@ltenv.com>; caweaver@blm.gov

Cc: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; adrian_baker@xtoenergy.com; Littrell, Kyle

<Kyle_Littrell@xtoenergy.com>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Billings, Bradford, EMNRD

<Bradford.Billings@state.nm.us>; jamos@blm.gov; McKinney, Deborah <dmckinne@blm.gov>

Subject: RE: [EXT] Re: [EXTERNAL] RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Good Morning,

A meeting to discuss this site may be appropriate at some point, however, it may be problematic to get it scheduled. I will attempt to provide an outline of what minimally, OCD is going to require at this site. If BLM is in agreement, this may allow XTO to have some idea of a path forward, and continue the work and/or scheduling as required.

- Actual depth to groundwater will need to be established, by installation of a monitor well. I would suggest
 completing it in a manner that will allow for potential long term monitoring. There may some data available that
 establishes gradient. If not, this will need to be established by the installation of other water well borings as
 necessary to establish gradient. The completed water well needs to be installed down gradient, and in very close
 proximity to the impacted battery site.
- A more complete delineation of impact needs to be performed. OCD would request a minimum of two borings be installed in the battery area, in what would be the more highly impacted areas. Samples are to be obtained at five feet intervals throughout the delineation. The purpose is to have a more precise idea of the levels and volume of hydrocarbon impact that exist. Sampling for chloride will be required as well.
- Based on data already obtained, a four feet excavation and liner installation will not be an acceptable remedial
 proposal for this site. A deeper excavation will likely be required, along with a proposed method for mitigating

- the deeper impact that may not be practicable to excavate. Of particular concern, is the lighter end hydrocarbons that have been determined to exist at significant depths.
- I would expect this to potentially be a long term project, so if XTO needs to return the well to production, the battery will need to be rebuilt in a different area of the well pad. Allow for potential deep excavations and monitoring at the impacted site when deciding on position of a new battery, if that is what XTO chooses to do. BLM will need to be consulted if additional surface disturbance is required.

If you have any questions or concerns, please let me know, but hopefully this will allow work to continue on this project. Please coordinate with OCD and BLM moving forward. If XTO still believes a meeting is required prior to moving forward, please advise and we will attempt to accommodate as soon as possible.

Thank you,

Mike Bratcher NMOCD District 2 811 South First Street Artesia, NM 88210 575~748~1283 Ext 108

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Weaver, Crystal < caweaver@blm.gov>

Sent: Sunday, April 28, 2019 9:47 AM

To: Ashley Ager (aager@ltenv.com>

Cc: Hamlet, Robert, EMNRD <<u>Robert.Hamlet@state.nm.us</u>>; <u>adrian_baker@xtoenergy.com</u>; Littrell, Kyle <<u>Kyle_Littrell@xtoenergy.com</u>>; Bratcher, Mike, EMNRD <<u>mike.bratcher@state.nm.us</u>>; Venegas, Victoria, EMNRD <<u>Victoria.Venegas@state.nm.us</u>>; Billings, Bradford, EMNRD <<u>Bradford.Billings@state.nm.us</u>>; <u>jamos@blm.gov</u>; McKinney, Deborah <<u>dmckinne@blm.gov</u>>

Subject: [EXT] Re: [EXTERNAL] RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Hello all,

A meeting would be fine. This week is pretty busy at the BLM internally, with a lot of required safety training going on this week. Perhaps the week after would be best for us.

However, I will say BLM understands that depth was pursued at the 80' reach but it wasn't in the same areas where the impact was showing. For example the 42' impact was next to the tank farthest on the end yet the 80' was pursued in an area next to the tank in the middle and again 80' was pursued at a point along the perimeter. Why not where the 42' area had revealed high numbers? Also same with the question about SS1. BLM sees that 4ft. depth was pursued for excavation for that whole area demarked by the black dashing but no bottom hole samples are shown aside from around the perimeter of that area. That is the questions we have about this. If the tank on the east end leaked ever for an extended period of time we would never be certain regarding potential ground water impact for that area cause the contamination trail was not concluded on in that area. If XTO has an explanation for why further delineation didn't happen in that area we would be welcome to hearing it.

I hope that helped paint the picture of what we are seeing. I understand that being the folks that did the work you know what you know but us being the folks that review it, we can only get what we can from the info there.

If XTO and LTE still require a meeting to further discuss this as stated BLM is able and willing hopefully next week May 6-10.
Thank you,

On Fri, Apr 26, 2019, 3:00 PM Ashley Ager aager@ltenv.com> wrote:

All,

I've pulled both Crystal's and Robert's responses into one email so that we could address each comment in one effort. Please see the text in blue below. Although I attempted to respond to each comment, would it be prudent to set up a meeting to work through the issues given the number of comments and concern expressed by the regulators? We'd like to better understand the expectations. Discussing potential options for moving forward is probably easier than emailing back and forth. Would NMOCD and BLM be available for a meeting in the next two weeks?

Thank You,

Ashley

Ashley Ager

Vice President of Regional Offices

(970) 385-1096 office

(970) 946-1093 mobile

From: Weaver, Crystal < caweaver@blm.gov>

Sent: Friday, April 26, 2019 1:45 PM **To:** adrian baker@xtoenergy.com

Cc: Bratcher, Mike, EMNRD < mike.bratcher@state.nm.us; Hamlet, Robert, EMNRD < Robert.Hamlet@state.nm.us; jamos@blm.gov; Ashley Ager < aager@ltenv.com; Littrell,

Kyle <Kyle_Littrell@xtoenergy.com>

Subject: Re: [EXTERNAL] Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Hello all,

BLM concurs with OCD that prior to any further authorizations that additional delineation and more concise intervals of data would be required.

Why was delineation stopped at PH02A at a depth of 42' when lab results showed 92.3mg/kg for total BTEX and 6140mg/kg for total TPH? The work plan documents LTE's site characterization assessment and states that due to site specific factors a full delineation of the most stringent level is required for this project (documented as referencing OCD's Table 1 from their spill rule under the category of <50 feet ground water).

PH02 is not the vertical delineation point. PH02 was advanced with a track hoe to the maximum depth possible with the available equipment on site. When total depth of the impacted soil could not be identified, LTE had to abandon the pothole and utilize a drill rig to go deeper. BH01 was drilled with a hollow stem auger rig and is the vertical delineation point in the center of the impacted area. It was drilled to 80 feet bgs, sampled and field screened every 5 feet, and 2 samples were submitted for laboratory analysis – the soil with the highest field screening result at 35 feet bgs and the bottom of the borehole at 80 feet bgs. The sample collected at 80 feet bgs was clean and represents vertical delineation at the Site.

Also I cross checked the depth to ground water data myself. For this area it was found that while the work plan did mention depth to groundwater data for well C-2492-POD2 being depth to water (dtw) of 125 ft bgs, however, the work plan failed to mention well C-2492 which is closer to the spill site (but not very far from C-2492-POD2) had recorded depth to water at 85 ft bgs and the difference in elevation of surface from the location of the spill and the location of that well is something approx. to 10ft. according to what Google Earth states (accuracy on elevation is debatable). Installation of triangulated placement of monitoring wells may need to be considered here if for no other reason then to at least rule out the possibility that groundwater impact occurred.

BH01 was drilled to 80 feet bgs on site and no saturated sediments representative of the presence of groundwater was encountered. The borehole was left open for more than 24 hours and no groundwater filled in.

BLM interpreted that the review of this work plan was urgent due to the tank battery currently being removed. However, BLM also interprets that since the tank battery has been removed that XTO should take advantage of the opportunity to further investigate the area both vertically and horizontally where the tanks once were since it can be derived from the data that residual fluid loss over time may have likely been a concern here regarding how much contaminants are present at the depths shown. Replacement of the battery in this same exact spot on the pad will most likely not be something that BLM would authorize anytime soon. Therefore, relocation of this battery appears to be appropriate to discuss if there is urgency to put things back into production currently while the battery's original location receives further attention.

LTE and XTO believe vertical and lateral delineation has been achieved with boreholes BH01 – BH06.

In addition regarding further investigation concerns, BLM would like to request that more representative investigation efforts regarding delineation and sampling be made around the area demarked by the black X (on the provided site map) that indicates the approx. origination of the other two points of release for the older releases. SS1 showed high TPH 8300mg/kg and total BTEX 139mg/kg at the 0.5' increment and then no data around that area was further provided.

All soil represented by soil sample SS1 has been excavated. Soil within the black dashed line has been removed to 4 feet bgs. Subsurface samples near the black X include PH01 at 6' bgs approximately 20 feet to the southwest, BH01, BH05, and BH06 approximately 30 feet to the southeast, northeast, and west respectively. Samples were collected every 5 feet in each of those boreholes for field screening and two samples from each were submitted for laboratory analysis. In addition, excavation sidewall samples nearest the black X, SW02 and SW04, were collected after removing the top four feet of soil and laboratory analytical results of those samples were clean.

Finally, although delineation is still not complete, currently as things stand, the remediation solution prescribed for this release does not seem adequate in regards to being the most effective for mitigating this site. Additional or alternate proposed efforts will need to be provided.

Soil impact extends from approximately 4 feet to 75 feet bgs. The depth of impacted soil makes excavation/removal impractical due to the benching and shoring that would be required. Disturbance of unaffected areas would be significant and would result in additional environmental impact. The affected soil is characterized by both elevated hydrocarbons and chloride. While the hydrocarbons can be addressed in situ, the chloride cannot. Based on the depth of the impact, presence of elevated chloride, and documentation of clean soil above groundwater, LTE proposed capping the remaining impact and leaving it in place. If that plan is not acceptable, would BLM consider *in situ* measures that only address hydrocarbon concentrations and not chloride, or does BLM expect excavation of the soil to the depths identified?

If further questions or concerns are needing to be addressed with the BLM please contact myself or Jim Amos.

Thank you,

Crystal Weaver

Environmental Protection Specialist

BLM - Carlsbad, NM

Desk: 575-234-5943

Cell: 575-200-0426

caweaver@blm.gov

BLM Carlsbad Field Office

620 E. Greene Street

Carlsbad NM 88220

"3 percent of the water on this planet is considered freshwater. Of that 3 percent only 1 percent is considered accessible, meaning the majority of the remaining 2 percent is trapped in glaciers or snowfields." - National Geographic

The **BLM acceptance/approval does not** relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment or if the location fails to reclaim properly. In such an event that the location does not re-vegetate, or future issues with contaminants are encountered, the operator will be asked to address the issues until the contaminant issues are fully mitigated and the location is successfully reclaimed. In addition, BLM approval does not relieve the operator of responsibility for compliance with any other federal, state or local laws/regulations.

<u>Confidentiality Warning:</u> This message along with any attachments are intended only for use of the individual or entity to which it is addressed and may contain information that is privileged or confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient or the employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately.

From: Hamlet, Robert, EMNRD < Robert. Hamlet@state.nm.us>

Sent: Wednesday, April 24, 2019 9:22 AM **To:** Adrian Baker abaker@ltenv.com

Cc: Ashley Ager ; Littrell, Kyle < href="mailto:Kyle tittrell@xtoenergy.com">; Bratcher, Mike, EMNRD < href="mailto:mike.bratcher@state.nm.us">; Venegas, Victoria, EMNRD < href="mailto:Victoria.Venegas@state.nm.us">; caweaver@blm.gov; jamos@blm.gov; billings, Bradford, EMNRD < href="mailto:Bradford.Billings@state.nm.us">; jamos@blm.gov < jamos@b

Subject: RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Adrian,

I'm glad that you removed the tank battery. The depth of contamination on this site is significant. A couple of things need to be addressed. First, the OCD needs soil samples taken on the boreholes at 5 ft increments to a depth the organics are under the limit. We need a clearer picture of the whole interval, not just at 20 and 42 ft. Essentially, the site hasn't been fully delineated if the bottom sample is still "hot". Second, the depth of the contamination on this site might require close inspection of the tanks to verify their durability.

We agree that data from the potholes did not delineate the impacted soil, so we utilized a drill rig to delineate. BH01, drilled at the center of the release footprint, documented vertical delineation with a clean sample obtained from 80 feet bgs. A borehole log for BH01 is included in the report and field screening with the laboratory analytical data indicate the soil is impacted from just below 4' bgs to approximately 75' bgs. All boreholes (BH01 through BH06) were sampled every 5 feet, described, and field screened. We conducted laboratory analysis on the samples collected from the intervals with the highest field screening result and from the bottom of each borehole. Lateral delineation was achieved with boreholes BH02 through BH06. The initial potholing data is only presented to document all work conducted on site and to supplement borehole data within the impacted area.

Regarding the comment about tank inspection, are you asking that we provide construction information about the new tanks that will be set above the impacted area?

XTO intends to replace the problematic water tank and all other tanks will be integrity tested prior to reinstallation.

Please let me know if you have any questions.

Thanks,

Robert J Hamlet

State of New Mexico

Energy, Minerals, and Natural Resources

Oil Conservation Division

811 S. First St., Artesia NM 88210

(575) 840-5963

Robert.Hamlet@state.nm.us

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment. In

addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

From: Adrian Baker abaker@ltenv.com Sent: Friday, April 12, 2019 3:25 PM

To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>;

Venegas, Victoria, EMNRD < Victoria. Venegas@state.nm.us>; caweaver@blm.gov; jamos@blm.gov

Cc: Ashley Ager aager@ltenv.com; Littrell, Kyle <Kyle Littrell@xtoenergy.com>
Subject: [EXT] Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Importance: High

All,

Attached is a Work Plan for a recent release and two historical releases at JRU 10/2RP-3179, 2RP-3464, and 2RP-5243. XTO removed the tank battery and needs to replace the tanks as soon as possible for production purposes. Can you please review as quickly as possible?

Thank you



Venegas, Victoria, EMNRD

From: Venegas, Victoria, EMNRD

Sent: Thursday, July 25, 2019 10:32 AM

To: 'Ashley Ager'; Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; jamos@blm.gov

Cc: Kyle_Littrell@xtoenergy.com; Tacoma Morrissey; Dan Moir; dmckinne@blm.gov

Subject: Revised Remediation Work Plan - James Ranch Unit #10 Battery / 2RP-3179,

2RP-3464, and 2RP-5243

Attachments: 14.OCD mb response 4.29.19.pdf; C141 Remediation - James Ranch Unit #10 Battery

(2RP-5243) 7.25.19.pdf; C141 Remediation - James Ranch Unit #10 Battery (2RP-3179) 7.25.19.pdf; C141 Remediation - James Ranch Unit #10 Battery (2RP-3464) 7.25.19.pdf

RE: Revised Remediation Work Plan - James Ranch Unit #10 Battery / 2RP-3179, 2RP-3464, and 2RP-5243

Ms. Ager,

OCD has received the Revised Remediation Work Plan for - James Ranch Unit #10 Battery / 2RP-3179, 2RP-3464, and 2RP-5243, thank you. This work plan proposal is DENIED for the following reasons (see attachment 14.0CD mb response 4.29.19 and email below \bigcirc):

From: Bratcher, Mike, EMNRD

Sent: Monday, April 29, 2019 8:23 AM

To: Ashley Ager (aager@ltenv.com); caweaver@blm.gov

Cc: Hamlet, Robert, EMNRD; adrian_baker@xtoenergy.com; Littrell, Kyle; Venegas, Victoria, EMNRD;

Billings, Bradford, EMNRD; jamos@blm.gov; McKinney, Deborah

Subject: RE: [EXT] Re: [EXTERNAL] RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Good Morning,

A meeting to discuss this site may be appropriate at some point, however, it may be problematic to get it scheduled. I will attempt to provide an outline of what minimally, OCD is going to require at this site. If BLM is in agreement, this may allow XTO to have some idea of a path forward, and continue the work and/or scheduling as required.

- Actual depth to groundwater will need to be established, by installation of a monitor well. I would suggest completing it in a manner that will allow for potential long term monitoring. There may some data available that establishes gradient. If not, this will need to be established by the installation of other water well borings as necessary to establish gradient. The completed water well needs to be installed down gradient, and in very close proximity to the impacted battery site.
- A more complete delineation of impact needs to be performed. OCD would request a minimum of two borings be installed in the battery area, in what would be the more highly impacted areas. Samples are to be obtained at five feet intervals throughout the delineation. The purpose is to have a more precise idea of the levels and volume of hydrocarbon impact that exist. Sampling for chloride will be required as well.
- Based on data already obtained, a four feet excavation and liner installation will not be an acceptable remedial
 proposal for this site. A deeper excavation will likely be required, along with a proposed method for mitigating
 the deeper impact that may not be practicable to excavate. Of particular concern, is the lighter end
 hydrocarbons that have been determined to exist at significant depths.
- I would expect this to potentially be a long term project, so if XTO needs to return the well to production, the battery will need to be rebuilt in a different area of the well pad. Allow for potential deep excavations and monitoring at the impacted site when deciding on position of a new battery, if that is what XTO chooses to do. BLM will need to be consulted if additional surface disturbance is required.

If you have any questions or concerns, please let me know, but hopefully this will allow work to continue on this project. Please coordinate with OCD and BLM moving forward. If XTO still believes a meeting is required prior to moving forward, please advise and we will attempt to accommodate as soon as possible.

Thank you, Mike Bratcher NMOCD District 2 811 South First Street Artesia, NM 88210 575-748-1283 Ext 108

If you have any questions, please call or email District II supervisor. Thank you,

Victoria Venegas EMNRD OCD-District II 811 S First St. Artesia NM 88210 Victoria.Venegas@state.nm.us

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

From: Ashley Ager <aager@ltenv.com> Sent: Friday, June 28, 2019 10:26 PM

To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; jamos@blm.gov

Cc: Kyle Littrell@xtoenergy.com; Tacoma Morrissey <tmorrissey@ltenv.com>; Dan Moir <dmoir@ltenv.com>

Subject: [EXT] RE: Revised Remediation Work Plan - James Ranch Unit #10 Battery / 2RP-3179, 2RP-3464, and 2RP-5243

All,

The C141s for these sites are attached here.

Ashley Ager Senior Geologist

(970) 385-1096 office (970) 946-1093 mobile

From: Dan Moir < dmoir@ltenv.com Sent: Friday, June 28, 2019 10:15 PM

To: <u>mike.bratcher@state.nm.us</u>; <u>Robert.Hamlet@state.nm.us</u>; <u>Victoria.Venegas@state.nm.us</u>; <u>jamos@blm.gov</u>; Bradford.Billings@state.nm.us

Cc: Ashley Ager <a href="mailto:two:kyle_Littrell@xtoenergy.c

All,

On behalf of XTO, the Revised Remediation Work Plan for two historical releases (2RP-3179 and 2RP-3464) and one recent release (2RP-5243) at the James Ranch Unit #10 Battery is attached for your review.

Please let me know if you have any questions.

Respectfully,

Daniel R. Moir, P.G. Senior Geologist / Permian Basin Office Manager



COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental, Inc. 3300 North "A" Street Building 1, Unit 103 Midland, Texas 79705 (432) 236-3849 cell (432) 704-5178 office www.ltenv.com

dmoir@ltenv.com

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Page 29 of 232

Incident ID
District RP 2RP-3464
Facility ID
Application ID

Remediation Plan

Remediation Plan Checklist: Each of the following items must be included in the plan.
 Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation points Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)
<u>Deferral Requests Only</u> : Each of the following items must be confirmed as part of any request for deferral of remediation.
Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
Extents of contamination must be fully delineated.
Contamination does not cause an imminent risk to human health, the environment, or groundwater.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: Kyle Littrell Title: SH&E Supervisor
Signature: Date:
email: Kyle Littrell@xtoenergy.com Telephone: (432)-221-7331
OCD Only
Received by: Victoria Venegas Date: 06/28/2019
Approved
Signature: Date: 07/24/2019

• Based on data already obtained, <u>a four feet excavation and liner installation will not be an acceptable remedial proposal for this site</u>. A deeper excavation will likely be required, along with a proposed method for mitigating the deeper impact that may not be practicable to excavate. Of particular concern, is the lighter end hydrocarbons that have been determined to exist at significant depths.

Venegas, Victoria, EMNRD

From: Tacoma Morrissey <tmorrissey@ltenv.com>
Sent: Monday, September 16, 2019 3:30 PM

To: Venegas, Victoria, EMNRD; Ashley Ager; Bratcher, Mike, EMNRD; Hamlet, Robert,

EMNRD; jamos@blm.gov

Cc: Kyle_Littrell@xtoenergy.com; Dan Moir; dmckinne@blm.gov

Subject: [EXT] RE: Revised Remediation Work Plan - James Ranch Unit #10 Battery / 2RP-3179,

2RP-3464, and 2RP-5243

Good afternoon,

This email serves as an update for the James Ranch Unit #10 Battery / 2RP-3179, 2RP-3464, and 2RP-5243. A remediation work plan was submitted June 28, 2019 and denied July 25, 2019 with explanation from the NMOCD. XTO has decided to pursue in situ active remediation. A soil vapor extraction (SVE) pilot test has been developed and will begin this week, which will include the installation of four SVE pilot test wells and vacuum testing to assess the radius of influence within the subsurface and ability to draw out petroleum hydrocarbon vapors through the pilot test wells. Once the pilot test has been completed and pending results of the pilot, XTO will draft and submit a revised remediation work plan for a full-scale SVE remediation system or an alternative remedial approach to the NMOCD and BLM for review. XTO expects to finalize and submit the remediation work plan October 30, 2019.

Thank you,





Tacoma Morrissey Staff Geologist 432.556.3617 *cell*

3300 North "A" St. Bldg 1 #103 Midland, TX 79705

www.ltenv.com



Think before you print. Click for our email disclosure.

From: Venegas, Victoria, EMNRD < Victoria. Venegas@state.nm.us>

Sent: Thursday, July 25, 2019 11:32 AM

To: Ashley Ager <aager@ltenv.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; jamos@blm.gov

Cc: Kyle_Littrell@xtoenergy.com; Tacoma Morrissey <tmorrissey@ltenv.com>; Dan Moir <dmoir@ltenv.com>; dmckinne@blm.gov

Subject: RE: Revised Remediation Work Plan - James Ranch Unit #10 Battery / 2RP-3179, 2RP-3464, and 2RP-5243

RE: Revised Remediation Work Plan - James Ranch Unit #10 Battery / 2RP-3179, 2RP-3464, and 2RP-5243

Ms. Ager,

OCD has received the Revised Remediation Work Plan for - James Ranch Unit #10 Battery / 2RP-3179, 2RP-3464, and 2RP-5243, thank you. This work plan proposal is DENIED for the following reasons (see attachment 14.0CD mb response 4.29.19 and email below :

From: Bratcher, Mike, EMNRD

Sent: Monday, April 29, 2019 8:23 AM

To: Ashley Ager (<u>aager@ltenv.com</u>); <u>caweaver@blm.gov</u>

Cc: Hamlet, Robert, EMNRD; adrian baker@xtoenergy.com; Littrell, Kyle; Venegas, Victoria, EMNRD;

Billings, Bradford, EMNRD; jamos@blm.gov; McKinney, Deborah

Subject: RE: [EXT] Re: [EXTERNAL] RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Good Morning,

A meeting to discuss this site may be appropriate at some point, however, it may be problematic to get it scheduled. I will attempt to provide an outline of what minimally, OCD is going to require at this site. If BLM is in agreement, this may allow XTO to have some idea of a path forward, and continue the work and/or scheduling as required.

- Actual depth to groundwater will need to be established, by installation of a monitor well. I would suggest completing it in a manner that will allow for potential long term monitoring. There may some data available that establishes gradient. If not, this will need to be established by the installation of other water well borings as necessary to establish gradient. The completed water well needs to be installed down gradient, and in very close proximity to the impacted battery site.
- A more complete delineation of impact needs to be performed. OCD would request a minimum of two borings be installed in the battery area, in what would be the more highly impacted areas. Samples are to be obtained at five feet intervals throughout the delineation. The purpose is to have a more precise idea of the levels and volume of hydrocarbon impact that exist. Sampling for chloride will be required as well.
- Based on data already obtained, a four feet excavation and liner installation will not be an acceptable remedial proposal for this site. A deeper excavation will likely be required, along with a proposed method for mitigating the deeper impact that may not be practicable to excavate. Of particular concern, is the lighter end hydrocarbons that have been determined to exist at significant depths.
- I would expect this to potentially be a long term project, so if XTO needs to return the well to production, the battery will need to be rebuilt in a different area of the well pad. Allow for potential deep excavations and monitoring at the impacted site when deciding on position of a new battery, if that is what XTO chooses to do. BLM will need to be consulted if additional surface disturbance is required.

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Thank you,

Mike Bratcher NMOCD District 2 811 South First Street Artesia, NM 88210 575-748-1283 Ext 108

If you have any questions, please call or email District II supervisor. Thank you,

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Venegas, Victoria, EMNRD < <u>Victoria.Venegas@state.nm.us</u>>; <u>jamos@blm.gov</u>

Cc: Kyle Littrell@xtoenergy.com; Tacoma Morrissey <tmorrissey@ltenv.com>; Dan Moir <dmoir@ltenv.com>

Subject: [EXT] RE: Revised Remediation Work Plan - James Ranch Unit #10 Battery / 2RP-3179, 2RP-3464, and 2RP-5243

All,

The C141s for these sites are attached here.

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Bradford.Billings@state.nm.us

Cc: Ashley Ager <aager@ltenv.com>; Kyle Littrell@xtoenergy.com; Tacoma Morrissey <tmorrissey@ltenv.com> Subject: Revised Remediation Work Plan - James Ranch Unit #10 Battery / 2RP-3179, 2RP-3464, and 2RP-5243

ΑII,

On behalf of XTO, the Revised Remediation Work Plan for two historical releases (2RP-3179 and 2RP-3464) and one recent release (2RP-5243) at the James Ranch Unit #10 Battery is attached for your review.

Please let me know if you have any questions.

Respectfully,

Daniel R. Moir, P.G. Senior Geologist / Permian Basin Office Manager



COMPLIANCE / ENGINEERING / REMEDIATION

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(432) 704-5178 office

www.ltenv.com

dmoir@ltenv.com

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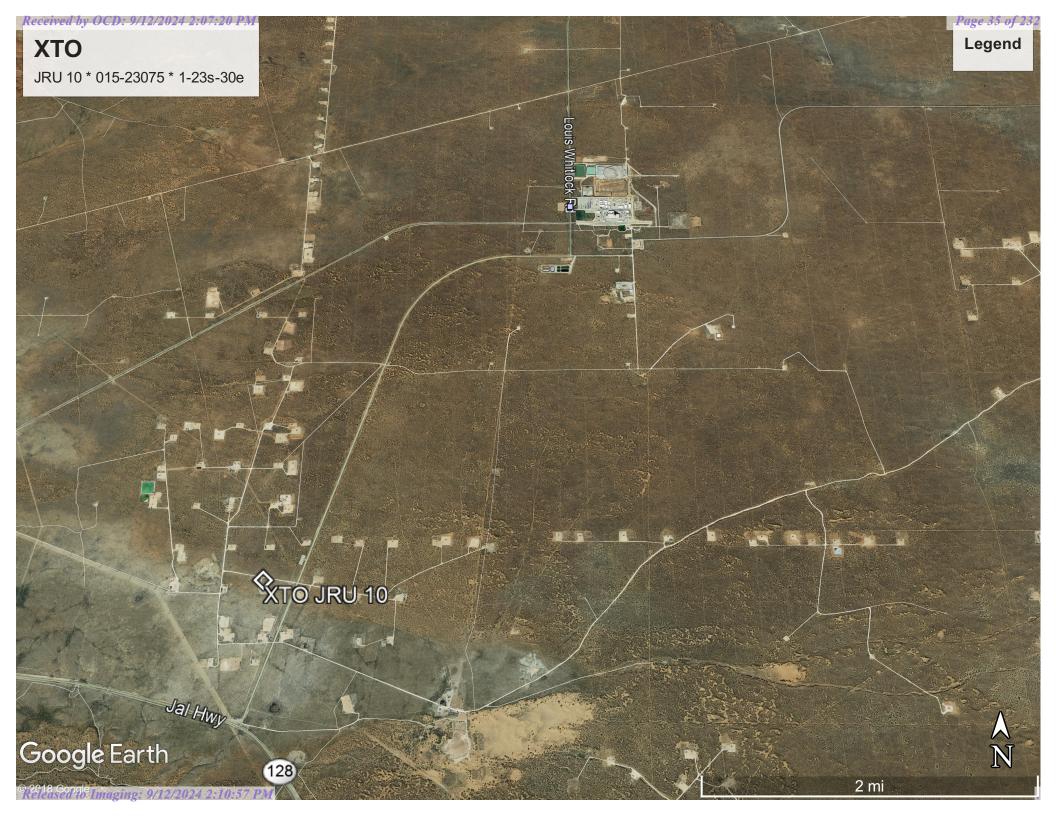
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ACCURACY 5 m DATUM WGS84







LT Environmental, Inc.

3300 North "A" Street Building 1, Unit 103 Midland, Texas 79705 432.704.5178

April 12, 2019

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

RE: Proposed Remediation Work Plan

James Ranch Unit #10 Battery

Remediation Permit Numbers 2RP-3179, 2RP-3464, and 2RP-5243

Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing remediation activities completed to date and a proposed remediation work plan to address residual impacted soil at the James Ranch Unit #10 Battery (Site). The Site is located in Unit H, Section 1, Township 23 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the remediation activities and proposed work plan is to address impacts to soil after three separate events caused the release of crude oil/condensate and produced water within the earthen tank battery containment.

On July 29, 2015, a coupling failed on the water transfer pump causing a tank to overflow. Approximately 50 barrels (bbls) of produced water and 5 bbls of condensate were released within the earthen tank battery containment. The free-standing fluids were recovered with a vacuum truck; approximately 13 bbls of produced water and 2 bbls of condensate were recovered. The release affected approximately 1,000 square feet within the tank battery containment. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on July 30, 2015, and was assigned Remediation Permit (RP) Number 2RP-3179 (Attachment 1).

On December 14, 2015, a coupling failed on the same water transfer pump, causing the pump to shut down and the produced water tank to overflow. Approximately 81 bbls of produced water were released within the tank battery containment. A small volume of the released fluid escaped the containment at the southwest corner but remained on the well pad. The free-standing fluids were recovered with a vacuum truck; approximately 40 bbls of produced water were recovered. The release affected approximately 1,550 square feet within the tank battery containment. The former operator reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on December 22, 2015, and was assigned Remediation Permit (RP) Number 2RP-3464 (Attachment 1).





On January 29, 2019, an overload of fluids entered the facility due to an increase in production efficiency by the lease operator. The overload in fluids caused the oil tank to overflow within the earthen tank battery containment. Approximately 9.8 bbls of crude oil were released. The free-standing fluids were recovered with a vacuum truck; approximately 7 bbls of crude oil were recovered. XTO reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 on February 8, 2019, and was assigned RP Number 2RP-5243 (Attachment 1).

Two of the releases occurred while the facility was operated by the previous operator; however, XTO is the current operator and is committed to addressing any releases that remain unresolved. Since the three releases occurred in the tank battery containment area, excavation and sampling activities were completed to address the three releases simultaneously. Remediation permit numbers 2RP-3179 and 2RP-3464 are included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the NMOCD effective November 13, 2018. The purpose of the Compliance Agreement is to ensure that reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The release is categorized as a Tier III site in the Compliance Agreement, meaning remediation of the release began prior to August 14, 2018, the effective date of 19.15.29 NMAC, however remediation was ongoing.

This proposed remediation work plan summarizes remediation activities and is designed to address remaining impacts to soil by additional excavation above 4 feet bgs and installation of a 20-mil impermeable liner in the subsurface.

BACKGROUND

LTE characterized the Site according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is United States Geological Survey (USGS) well USGS 321936103503401 23S.30E.02.44414, located approximately 1.1 miles southwest of the Site. The water well has a depth to groundwater of 260.75 feet and a total depth of 320 feet. The water well is approximately 53 feet lower in elevation than the Site. A second permitted water well with depth to water data is well C 02492 POD 2, which is located approximately 1.17 miles southeast of the Site. The water well has a depth to groundwater of 125 feet and a total depth of 400 feet. The water well is approximately 3 feet lower in elevation than the Site. The nearest continuously flowing water or significant watercourse is an unnamed dry wash located 4,100 feet south of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a medium karst area. Based on these criteria,



the following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 100 mg/kg total petroleum hydrocarbons (TPH); and 600 mg/kg chloride.

PRELIMINARY SOIL SAMPLING ACTIVITIES

On January 4, 2018, LTE personnel inspected the Site to evaluate the release extents associated with the two historical 2015 releases. Hydrocarbon staining was observed within the tank battery containment berm. The release extent was mapped using a handheld Global Positing System (GPS) unit and is depicted on Figure 2. LTE personnel collected nine preliminary soil samples (SS1 through SS9) in and around the release area from a depth 0.5 feet bgs to assess the lateral extent of soil impacts.

The soil samples were screened for volatile aromatic hydrocarbons and chloride using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to ESC Lab Sciences in Mount Juliet, Tennessee for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0. The preliminary soil sample locations and depths are presented on Figure 2.

Laboratory analytical results for preliminary soil samples SS1 through SS4, SS8, and SS9 indicated that BTEX, TPH, and/or chloride concentrations exceeded the NMOCD Table 1 closure criteria. Laboratory analytical results for preliminary soil samples SS5, SS6, and SS7 indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. Based on the laboratory analytical results and the subsequent January 2019 crude oil release in the same location, excavation of impacted soil was required. The laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the laboratory analytical report is included in Attachment 2.

EXCAVATION ACTIVITIES

During February and March 2019, LTE personnel returned to the Site to oversee excavation of impacted soil as indicated by laboratory analytical results for the preliminary soil samples and the documented release area for the recent January 2019 release. To direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Impacted soil was excavated to a depth of 4 feet bgs. Following removal of impacted soil above 4 feet bgs, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls of the excavation. The 5-point composite samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite





soil samples SW01 through SW05 were collected from the sidewalls of the excavation from depths of 1 foot to 4 feet bgs. No soil samples were submitted for laboratory analysis from the floor of the excavation based on elevated field screening results in the excavation floor at 4 feet bgs. The sidewall soil samples were collected, handled, and analyzed as described above and submitted to Xenco Laboratories (Xenco) in Midland, Texas. The sidewall soil sample locations are presented on Figure 3.

Laboratory analytical results for sidewall samples SW01 through SW03 indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. Laboratory analytical results for sidewall samples SW04 and SW05 indicated that TPH or chloride concentrations exceeded the NMOCD Table 1 closure criteria. The laboratory analytical results are presented on Figure 3 and summarized in Table 1 and the laboratory analytical report is included in Attachment 2. Based on laboratory analytical results for the excavation sidewall samples and field screening activities for the excavation floor, potholing was scheduled to delineate the lateral and vertical extent of impacted soil remaining in place in order to evaluate remediation options.

The excavation measured approximately 5,000 square feet in area. The horizontal extent of the excavation is presented on Figure 3. A total of approximately 740 cubic yards of impacted soil were removed from the excavation. The impacted soil will be transported and properly disposed of at the Lea Land landfill facility, in Hobbs, New Mexico.

DELINEATION ACTIVITIES

During March and April 2019, LTE personnel were at the Site to oversee potholing and boreholing activities to delineate the lateral and vertical extent of impacted soil remaining in place. Potholes PH01 and PH02 were advanced within the release area via track hoe to depths of 25 feet and 42 feet bgs, respectively. Two delineation soil samples were collected from each pothole PH01 and PH02 from depths ranging from 6 feet to 42 feet bgs.

Boreholes BH01 through BH06 were advanced via a hollow-stem auger drilling rig within and around the excavated area to depths ranging from 10 feet to 80 feet bgs. An LTE geologist logged and described soils every five feet, which were collected with a hammer sampler. Soil was field screened in the potholes and boreholes using a PID and Hach® chloride QuanTab® test strips. Two delineation soil samples were collected from each borehole BH01 through BH06 from depths ranging from 5 feet to 80 feet bgs. Samples were chosen from the borehole intervals with the highest field screening results and from total depth of the boreholes. The soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas. The delineation soil sample locations and depths are presented on Figure 4 and soil sample logs are included as Attachment 3.





Laboratory analytical results for the soil samples collected from potholes PH01 and PH02 indicated that soil samples PH01, PH02, and PH02A collected from depths ranging from 6 feet to 42 feet bgs exceeded the NMOCD Table 1 closure criteria for chloride and/or TPH and BTEX. Laboratory analytical results for soil sample PH01A collected at 25 feet bgs indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria.

Laboratory analytical results for soil samples collected from boreholes BH01 through BH06 indicated that soil samples BH01F, BH03, and BH03A collected from depths ranging from 5 feet to 35 feet bgs exceeded the NMOCD Table 1 closure criteria for TPH, BTEX, and/or chloride.

Laboratory analytical results for soil samples collected from boreholes BH01 through BH06 indicated that soil samples BH01O, BH02B, BH02O, BH04D, BH04I, BH05C, BH05E, BH06, and BH06E collected from depths ranging from 5 feet to 80 feet bgs were compliant with the NMOCD Table 1 closure criteria for BTEX, TPH, and chloride. The laboratory analytical results are presented on Figure 4 and summarized in Table 1, and the laboratory analytical report is included in Attachment 2.

ANALYTICAL RESULTS

Laboratory analytical results indicated that BTEX, TPH, and/or chloride concentrations initially exceeded the NMOCD Table 1 closure criteria in preliminary soil samples SS1 through SS4, SS8, and SS9. Impacted soil was excavated to a depth of 4 feet bgs. Laboratory analytical results for excavation sidewall samples SW01 through SW03 indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria. Based on the laboratory analytical results, no further lateral excavation was required in the northern portion of the excavation. Laboratory analytical results for excavation sidewall samples SW04 and SW05 indicated that TPH or chloride concentrations exceeded the NMOCD Table 1 closure criteria. Based on the laboratory analytical results, impacted soil remained in place above 4 feet bgs beyond the current excavation extent in the southern portion of the excavation.

Laboratory analytical results for the delineation soil samples collected from potholes PH01 and PH02 and boreholes BH01 through BH06 indicated that samples PH01, PH02, PH02A, BH01F, BH03, and BH03A exceeded the NMOCD Table 1 closure criteria for BTEX, TPH, and/or chloride. Laboratory analytical results for the delineation soil samples collected from potholes PH01 and PH02 and boreholes BH01 through BH06 indicated that soil samples PH01A, BH01O, BH02B, BH02O, BH04D, BH04I, BH05C, BH05E, BH06, and BH06E were compliant with the NMOCD Table 1 closure criteria. Based on the laboratory analytical results, impacted soil above 4 feet bgs was delineated laterally and scheduled for additional excavation and impacted soil below 4 feet was delineated laterally and vertically and remained in place.





The soil sample locations and depths are presented on Figure 2 through Figure 4. The laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Attachment 2.

PROPOSED WORK PLAN

Approximately 740 cubic yards of impacted soil were removed from the release area to a depth of 4 feet bgs. Based on field screening activities and laboratory analytical results for the excavation and delineation soil samples, additional excavation to a depth of 4 feet bgs will proceed to the south and east of the current excavation extents. The excavation will be extended to the south to the location of borehole BH02 and to the east to the location of borehole BH04. Confirmation soil samples will be collected from the sidewalls of the additional excavated areas to confirm that impacted soil above 4 feet bgs has been removed. The laboratory analytical results for the confirmation samples will be provided to the NMOCD in a supplemental remediation report. The proposed additional excavation extent is depicted on Figure 4.

Once the additional excavation has been completed, XTO proposes to cap the residual impacted soil below 4 feet bgs with an impermeable liner. An estimated 30,500 cubic yards of impacted soil remain in place, assuming a maximum 75-foot depth based on field screening activities and soil samples collected from potholes PH01 and PH02 and boreholes BH01 through BH06.

Delineation and excavation soil sampling provided full vertical and lateral delineation of the impacted soil, which extended below 4 feet bgs. Due to the nature of the release and extent of contamination in the subsurface, XTO requests to install a 20-mil impermeable liner over the residual impacted soil to mitigate further impacts into the subsurface. XTO will complete the additional excavation and liner installation within 5 days of the date of approval of this work plan by NMOCD. An updated NMOCD Form C-141 is included in Attachment 1. A photographic log of the Site is included as Attachment 4.

If you have any questions or comments, please do not hesitate to contact Ms. Adrian Baker at (432) 887-1255.

Sincerely,

LT ENVIRONMENTAL, INC.

Adrian Baker Project Geologist

cc: Kyle Littrell, XTO

Ashley L. Ager, P.G Senior Geologist





Robert Hamlet, NMOCD Victoria Venegas, NMOCD Jim Amos, U.S. Bureau of Land Management Crystal Weaver, U.S. Bureau of Land Management

Attachments:

Figure 1 Site Location Map

Figure 2 Preliminary Soil Sample Locations
Figure 3 Excavation Soil Sample Locations
Figure 4 Delineation Soil Sample Locations

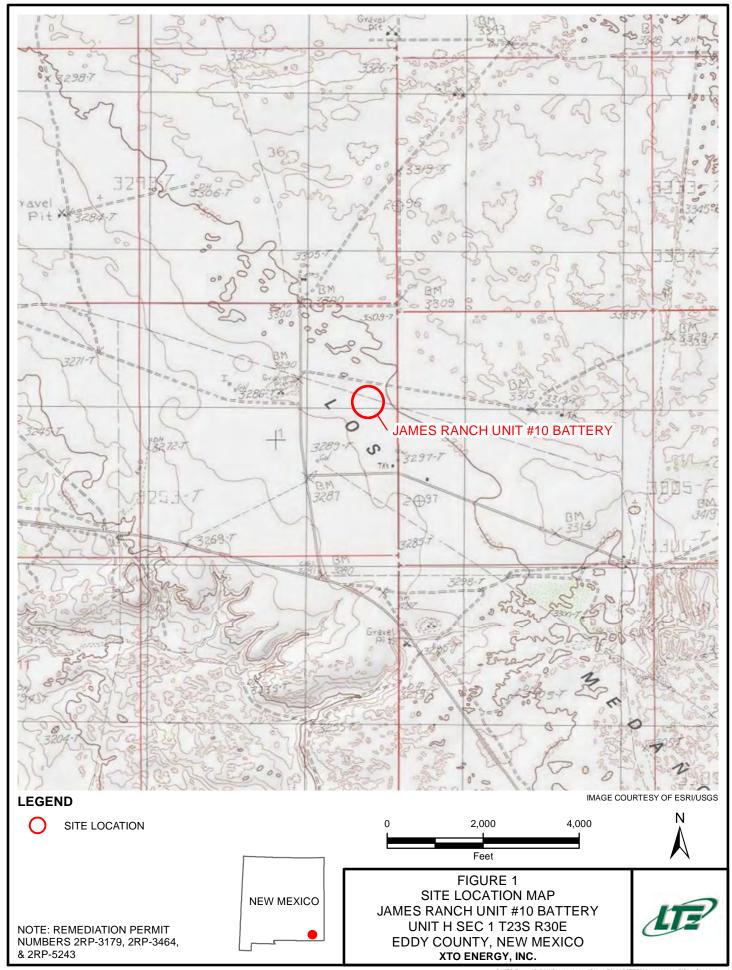
Table 1 Soil Analytical Results

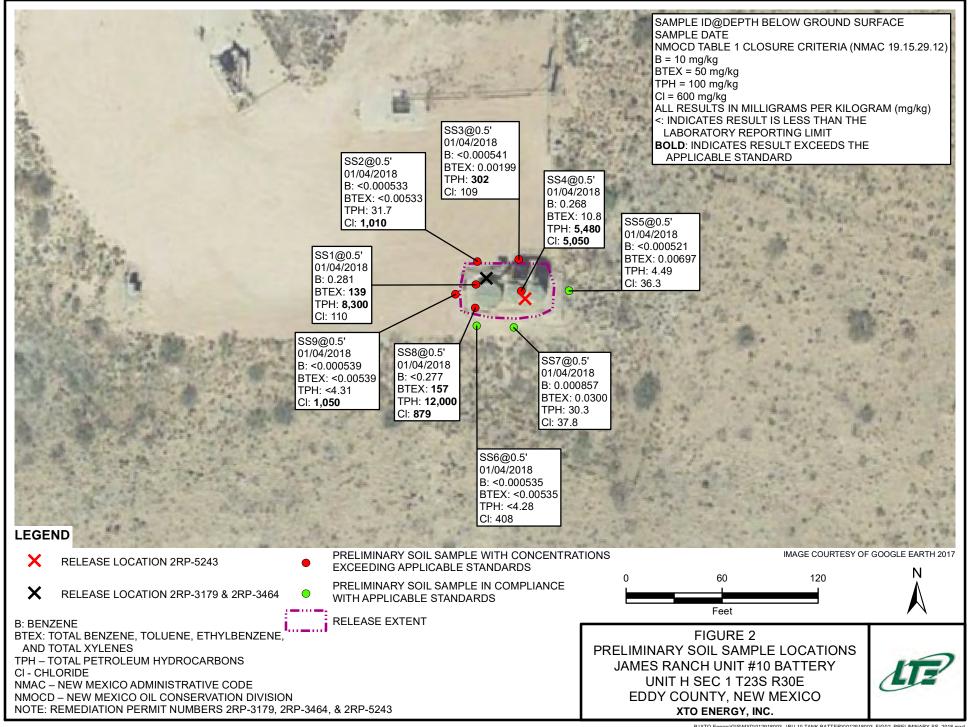
Attachment 1 Initial/Final NMOCD Form C-141 (2RP-3179, 2RP-3464, and 2RP-5243)

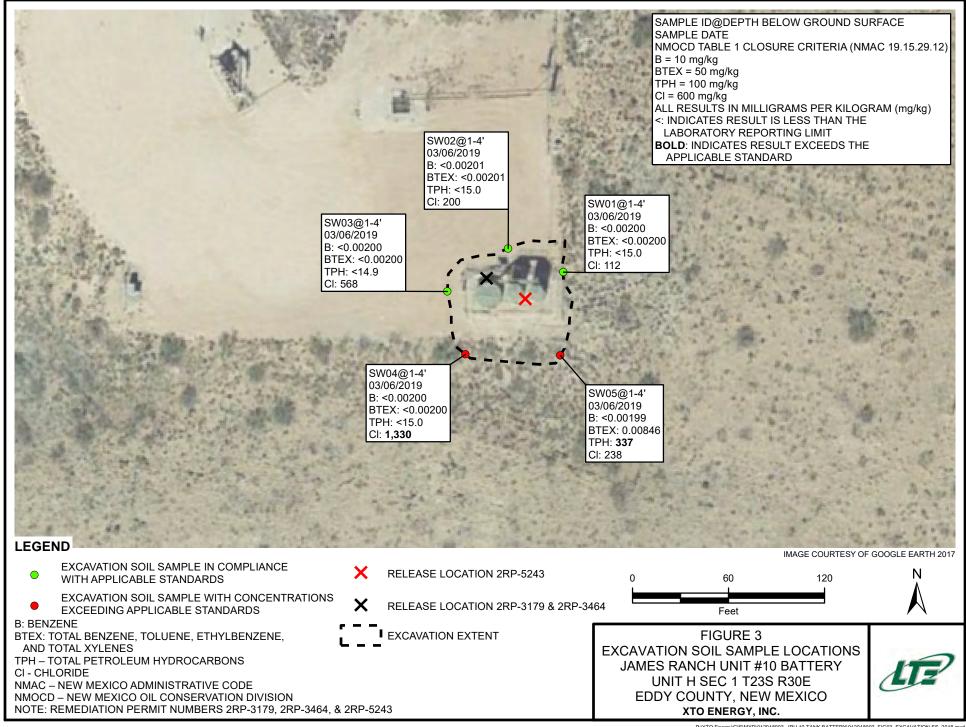
Attachment 2 Laboratory Analytical Reports

Attachment 3 Soil Sampling Logs Attachment 4 Photographic Log









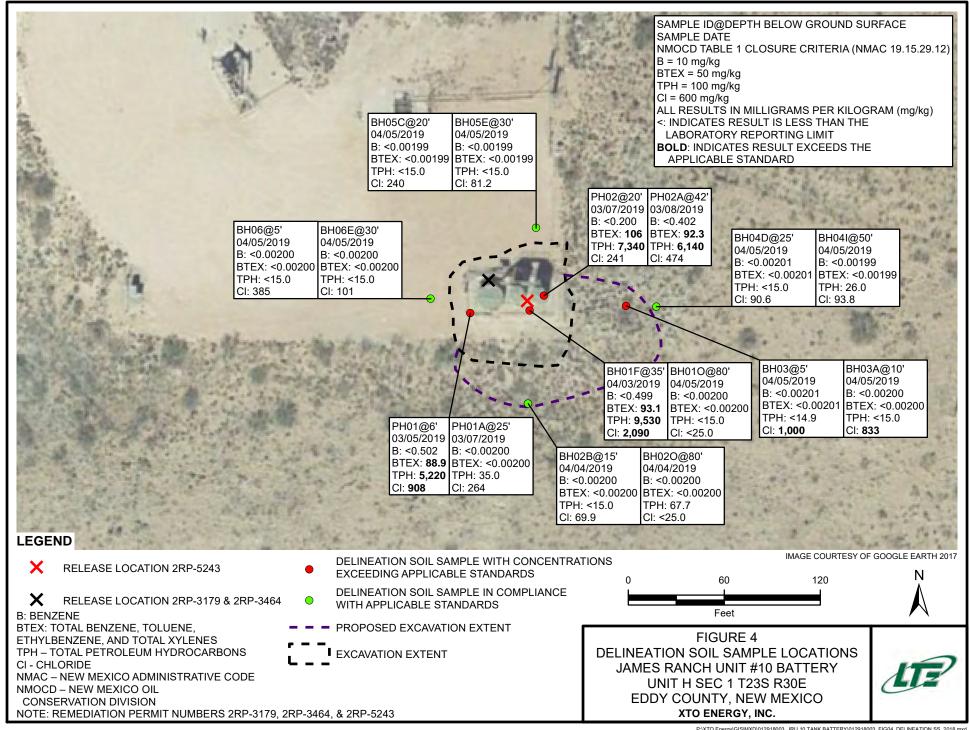


TABLE 1 SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT #10 BATTERY REMEDIATION PERMIT NUMBERS 2RP-3179, 2RP-3464, and 2RP-5243 EDDY COUNTY, NEW MEXICO XTO ENERGY, INC.

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)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	GRO and DRO (mg/kg)		Chloride (mg/kg)
SS1	0.5	01/04/2018	0.281 B	10.8	2.96	125	139	3,140	4,960	201	8,100	8,300	110
SS2	0.5	01/04/2018	<0.000533	<0.00533	<0.000533	<0.00160	<0.00533	<0.107	23.6	8.10	23.6	31.7	1,010
SS3	0.5	01/04/2018	<0.000541	<0.00541	<0.000541	0.00199	0.00199	<0.108	259	43.3	259	302	109
SS4	0.5	01/04/2018	0.268 B	<1.16	0.481	10.1	10.8	1,810	3,510	160	5,320	5,480	5,050
SS5	0.5	01/04/2018	<0.000521	<0.00521	<0.000521	0.00697	0.00697	<0.10	<4.17	4.49	<4.17	4.49	36.3
SS6	0.5	01/04/2018	<0.000535	<0.00535	<0.000535	<0.00161	<0.00535	<0.107	<4.28	<4.28	<4.28	<4.28	408
SS7	0.5	01/04/2018	0.000857	0.00873	0.00178	0.0186	0.0300	0.236 B	19.3	10.8	19.5	30.3	37.8
SS8	0.5	01/04/2018	<0.277	15.0	3.43	139	157	3,160	8,810	<222	12,000	12,000	879
SS9	0.5	01/04/2018	<0.000539	<0.00539	<0.000539	<0.00162	<0.00539	<0.108	<4.31	<4.31	<4.31	<4.31	1,050
PH01	6	03/05/2019	<0.502	4.34	5.28	79.3	88.9	3,110	2,090	17.9	5,200	5,220	908
SW01	1 - 4	03/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	112
SW02	1 - 4	03/06/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	200
SW03	1 - 4	03/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	568
SW04	1 - 4	03/06/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,330
SW05	1 - 4	03/06/2019	<0.00199	<0.00199	<0.00199	0.00846	0.00846	20.5	316	<15.0	337	337	283
PH01A	25	03/07/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	35.0	<14.9	35.0	35.0	264
PH02	20	03/07/2019	<0.200	9.81	11.8	84.5	106	4,140	3,180	21.7	7,320	7,340	241
PH02A	42	03/08/2019	<0.402	4.19	12.2	75.9	92.3	3,400	2,720	18.1	6,120	6,140	474
BH01F	35	04/03/2019	<0.499	9.90	11.6	71.6	93.1	6,030	3,500	<74.7	9,530	9,530	2,090 D
BH010	80	04/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	<25.0
BH02B	15	04/04/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	69.9
BH02O	80	04/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	50.9	16.8	50.9	67.7	<25.0
BH03	5	04/05/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	<14.9	1,000
вноза	10	04/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	833
BH04D	25	04/05/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	90.6
BH04I	50	04/05/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	26.0	<15.0	26.0	26.0	93.8
BH05C	20	04/05/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	240



TABLE 1 (Continued) SOIL ANALYTICAL RESULTS

JAMES RANCH UNIT #10 BATTERY REMEDIATION PERMIT NUMBERS 2RP-3179, 2RP-3464, 2RP-5243 EDDY COUNTY, NEW MEXICO XTO ENERGY, INC.

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)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	ORO	GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
BH05E	30	04/05/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	81.2
BH06	5	04/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	385
BH06E	30	04/05/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	101
NMOCD Table 1 Closu	ıre Criteria		10	NE	NE	NE	50	NE	NE	NE	NE	100	600

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

mg/kg - milligrams per kilogram

NE - not established

NMOCD - New Mexico Oil Conservation Division

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory reporting limits

Bold - indicates result exceeds the applicable regulatory standard * - 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/kgTable 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018 NMAC - New Mexico Administrative Code

B - the same analyte is found in the associated blank

D - the result is from a diluted sample





District I 1625 N. French Dr., Hohbs. NM 88240 District II 811 S. First St., Artesia. NM 88210 District III 1000 Rto 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

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

	521257	200	-01	artan		OPERA	and the same of th		⊠ Initi	al Report 🔲 Final R
					Contact: Tony Savoie					
					Telephone No. 575-887-7329					
					Facility Type: Exploration and Production					
Surface Owner: Federal Mineral Owner: f					Federal			APINO	0.30-015-23075	
				LOCA	ATION	OF RE	LEASE			
Unit Letter	Section	Township	Range	Feel from the		South Line	Feet from the	East/V	West Line	County
Н	1	238	30E	1980	No		660	Eas		Eddy
		-			_					
				Latitude N 32.	335568	Longitude	W 103.82759	20		
				NAT	TURE	OF REL	EASE			
ype of Rolo	ease: Produce	d water and	condensati				Release: 50 bbls	. PW	Volume I	Recovered: 13 bbls, PW and
Source of Re	clease; Produ	and mater tee	nl.				condensate		bbls. con	densate
MILE OF ME	cicase, i roddi	ZCG WAICI IAI	IIK.				Hour of Occurrence me unknown	e:		Hour of Discovery: 7/29/15 nately 8:30 a.m.
Nas Immedi	iate Notice G	0.5 301.4 0						ratcher,	Heather Pa	uterson, and Jim Amos
			Yes [_	No Not R	equired					
	Tony Savoie rcourse Reacl	ne.42				Date and I	Tour 7/29/15, first	attemp	tat 1:51 pa	m, confirmed at 6:14 p.m.
Was a Water	COMSt. React] Yes 🛛	l No		If YES, Volume Impacting the Watercourse.				
f a Wateren	urse was Imp									M OIL CONSERVA
1 o maiore	urac was mil	neteu, 176ser	toe runy,							ARTESIA DISTRICT
Describe Ca	use of Problem	n and Reme	dial Action	ı l'aken.*						JUL 3 0 2015
Describe Car A coupling o	use of Problem in the water to	n and Reme ansfer pump	dial Action of failed can	i Taken,* ising the tank to u	overilow	. The coupling	ng was replaced il	ne day o	f the release	RECEIVED
A coupling o	on the water to	ansfer pump	ı failed em	ising the tank to t	overNow	. The couplin	ig was replaced if	ie day o	Othe release	RECEIVED
A coupling of the Are The spill imposed the spill imposed to the country true!	on the water to ea Affected as pacted about 1 k.	ransfer pump nd Cleanup / 1000 sq.ft. in	o failed can Action Tak aside the ea	en.*	nt around	d the Oil and	PW tanks. All of			RECEIVED
A coupling of the spill impraction truel from the spill area the spill area thereby certifications a sublic health hould their or the environ	on the water to ea Affected as nacted about 1 k, a will be clea- ify that the in If operators a or the environ	d Cleanup A 1000 sq.ft. in ned up in acc formation gi re required to ment. The ve failed to a dition, NMC	Action Tak aside the ear cordance to ecordance to report an acceptance acceptance	en.* orther containments the NMOCD and the life containing d/or fife certain recoff a C-141 repoint vestigate and recommends.	nt around Id BLM Idea to the clease no	d the Oil and remediation and the best of my offications are NMOCD me contaminate	PW tanks. All of guidelines. knowledge and und perform correctorked as "Final Right that pose a three the operator of	the free inderstan tive act eport" c eat to gi respons	standing fl nd that pursions for rel locs not rel round water ibility for e	RECEIVED e. luid was recovered with a suant to NMOCD rules and leases which may endanger ieve the operator of liability r, surface water, human heal compliance with any other
A coupling of the spill impraction truel from the spill area the spill area thereby certifications a sublic health hould their or the environ	on the water to ea Affected an eacted about 1 k, a will be clea ify that the in If operators a or the enviro operations ha nment. In ad-	d Cleanup A 1000 sq.ft. in ned up in acc formation gi re required to ment. The ve failed to a dition, NMC	Action Tak aside the ear cordance to ecordance to report an acceptance acceptance	en.* orther containments the NMOCD and the life containing d/or fife certain recoff a C-141 repoint vestigate and recommends.	nt around Id BLM Idea to the clease no	d the Oil and remediation and the best of my offications are NMOCD me contaminate	PW tanks. All of guidelines. knowledge and und perform correctorked as "Final Right that pose a three the operator of	the free inderstan tive act eport" c eat to gi respons	standing fl nd that pursions for rel locs not rel round water ibility for e	RECEIVED e luid was recovered with a suant to NMOCD rules and cases which may endanger ieve the operator of liability
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Describe Are The spill impractum truel The spill are the s	ea Affected are nacted about lik. a will be clearly that the in ll operators are or the environment. In adaptions has not local fave. Tony Savo	d Cleanup / 1000 sq.ft. in according to required to ment. The ve failed to a dition, NMC and/or regulie.	Action Tak nside the ex- cordance to even above o report an acceptance adequately OCD accep- ulations.	en.* orther containments the NMOCD and is true and computer of a C-141 repointed and removes tighted and removes the containment of a C-141 repointed and removes of a C-141	nt around and BLM a detection to clease no ort by the emediate report de	the Oil and remediation and the best of my ortifications and NMOCD me contaminations not relieve.	PW tanks. All of guidelines. knowledge and und perform corrector of the pose a three the operator of OIL CON Environmental Step 1/31/1	the free	nd that pure ions for rel loes not rel round water ibility for c	RECEIVED a suant to NMOCD rules and leases which may endanger leve the operator of liability r, surface water, human healt compliance with any other DIVISION Date: N 1
Describe Are the spill impactument ruel the spill area thereby centicipal area to be a spill area to be a sp	ea Affected are nacted about lik. a will be clearly that the in ll operators are or the environment. In adment.	d Cleanup / 1000 sq.ft. in ned up in according to required to ment. The vertailed to addition, NMC and/or regulated and Remedial	Action Tak nside the ear cordance to even above o report an acceptance accept	en.* orther containments the NMOCD and is true and computer of a C-141 repointvestigate and rance of a C-141	nt around and BLM in the clease no orthy the emediate report de	d the Oil and remediation and the best of my offications and contaminate personal relieves not relieves approved by Approval Data Conditions of	PW tanks. All of guidelines. knowledge and und perform corrector of the pose a three the operator of OIL CON Environmental Step 1/31/1	the free	nd that pure ions for rel loes not rel round water ibility for conditions.	RECEIVED e luid was recovered with a suant to NMOCD rules and cases which may endanger ieve the operator of liability r, surface water, human healt compliance with any other DIVISION Date:

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		
District RP	2RP-3179	_
Facility ID		
Application ID		

Release Notification

Responsible Party

	TO Energy, Inc		OGRID	OGRID: 5380		
Contact Name: Kyle	Littrell		Contact	Contact Telephone: (432)-221-7331		
Contact email: Kyle_Littrell@xtoenergy.com				t#: 2RP-3179		
Contact mailing addre NM 88220	ss 522 W. Mermod, S	Suite 704 Carlsbad,	,			
		Location	of Release	Source		
atitude 32.335568		(NAD 83 in deci	Longitude mal degrees to 5 de	e -103.827592 ccimal places)		
Site Name JRU-10			Site Typ	e Exploration and Production		
Date Release Discover	ed 07/29/15			applicable) 30-015-23075		
Unit Letter Section	Township	Dam				
H 1	23S	Range 30E	County Eddy			
		Nature and	Volume of	Release		
Mate	rial(s) Released (Select all	that apply and attach ca		fic justification for the volumes provided below)		
Crude Oil	Volume Released	that apply and attach call (bbls)		fic justification for the volumes provided below) Volume Recovered (bbls)		
Crude Oil	Volume Released	that apply and attach conditions that apply apply and attach conditions that apply appl	alculations or specif	fic justification for the volumes provided below)		
Crude Oil	Volume Released Volume Released Is the concentrati	that apply and attach conditions of the description of dissolved children and attach conditions of the description of the descr	alculations or specif	fic justification for the volumes provided below) Volume Recovered (bbls)		
☐ Crude Oil ☐ Produced Water	Volume Released	that apply and attach conditions in the conditions of the conditio	alculations or specif	fic justification for the volumes provided below) Volume Recovered (bbls) Volume Recovered (bbls) 13		
Mate ☐ Crude Oil ☐ Produced Water ☐ Condensate ☐ Natural Gas	Volume Released Volume Released Is the concentration produced water >	that apply and attach conditions of the dissolved children of the diss	alculations or specif	fic justification for the volumes provided below) Volume Recovered (bbls) Volume Recovered (bbls) 13 Yes No		
☐ Crude Oil ☐ Produced Water ☐ Condensate	Volume Released Is the concentration produced water > Volume Released Volume Released	that apply and attach conditions of the dissolved children of the diss	alculations or specifications or specific	fic justification for the volumes provided below) Volume Recovered (bbls) Volume Recovered (bbls) 13 Yes No Volume Recovered (bbls) 2		
☐ Crude Oil ☐ Produced Water ☐ Condensate ☐ Natural Gas	Volume Released Is the concentration produced water > Volume Released Volume Released	that apply and attach cold (bbls) I (bbls) 50 I (bols) 50 I (bols) 50 I (bbls) 5 I (Mcf)	alculations or specifications or specific	Fic justification for the volumes provided below) Volume Recovered (bbls) Volume Recovered (bbls) 13 Yes No Volume Recovered (bbls) 2 Volume Recovered (Mcf)		

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-3179
Facility ID	
Application ID	

Was this a major	If YES, for what reason(s) does the responsible party consider this a major release?
release as defined by 19.15.29.7(A) NMAC?	The release was greater than 25 bbls.
, ,	was greater man 25 oois.
X Yes No	
If VES was immediate n	office given to the OCD2 December 2 To and a 20 Mil.
	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Mike Bratcher/Heather Patterson (NMOCD), and Jim Amos (BLM) on 7/29/2015.
, , ,,	Takes of Takes of Carlotte, and the Fallos (BEN) of 1/25/2015.
	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 rele	ase has been stopped.
☐ The impacted area ha	s been secured to protect human health and the environment.
	ve been contained via the use of berms or dikes, absorbent pads, or other containment devices.
	coverable materials have been removed and managed appropriately.
	l above have <u>not</u> been undertaken, explain why:
Per 19.15.29.8 B. (4) NM	AC the responsible party may commence remediation immediately after discovery of a release. If remediation
has begun, please attach a	a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred t area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
	mation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and
regulations all operators are i	equired to report and/or file certain release notifications and perform corrective actions for releases which may endanger
public health or the environn	ent. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have
addition, OCD acceptance of	te and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
and/or regulations.	
Printed Name: Kyle	Littrell Title: SH&E Coordinator
Signature:	Date: 4/12/2019
Signature	Date: 4712/2010
email: Kyle Littrell@xtoe	nergy.com Telephone: 432-221-7331
OCD Only	
Received by:	Date:
	Date.

State of New Mexico Oil Conservation Division

Incident ID		
District RP	2RP-3179	
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

Incident ID	
District RP	2RP-3179
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release not public health or the environment. The acceptance of a C-141 report by the failed to adequately investigate and remediate contamination that pose a thr addition, OCD acceptance of a C-141 report does not relieve the operator of and/or regulations.	cifications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have eat to groundwater, surface water, human health or the environment. In
Printed Name: Kyle Littrell	Title: SH&E Coordinator
Signature:	Date: 4/12/2019
email:Kyle Littrell@xtoenergy.com	Telephone: (432)-221-7331
OCD Only	
Received by:	Date:

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-3179
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: Each of the following items must be	pe included in the plan.			
□ Detailed description of proposed remediation technique				
Scaled sitemap with GPS coordinates showing delineation points				
Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.				
Closure criteria is to Table 1 specifications subject to 19.15.29. Proposed schedule for remediation (note if remediation plan tin	12(C)(4) NMAC			
23 Troposed seriedate for remediation (note it remediation plan till	define is more than 30 days OCD approval is required)			
	Carrier Walter Commence Commen			
<u>Deferral Requests Only</u> : Each of the following items must be con	nfirmed as part of any request for deferral of remediation.			
Contamination must be in areas immediately under or around predeconstruction.	roduction equipment where remediation could cause a major facility			
Extents of contamination must be fully delineated.				
Contamination does not cause an imminent risk to human health	h, the environment, or groundwater.			
** * ** ***	A COLUMN TO THE PROPERTY OF THE PARTY OF THE			
rules and regulations all operators are required to report and/or file of which may endanger public health or the environment. The accepta liability should their operations have failed to adequately investigate surface water, human health or the environment. In addition, OCD responsibility for compliance with any other federal, state, or local limits of the environment.	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of			
Printed Name: Kyle Littrell	Title: SH&E Coordinator			
Signature:	Date: 4/12/2019			
email: Kyle Littrell@xtoenergy.com	Telephone: (432)-221-7331			
OCD Only				
Received by:	Date:			
☐ Approved ☐ Approved with Attached Conditions of	Approval			
Signature:	Date:			

District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

NM OIL CONSERVATION

ARTESIA DISTRICT

DEC 2 2 2015

Form C-141 Revised August 8, 2011

Submit Copy to appropriate District Office in accordance with 19.15.29 NMAC.

District I 1625 N. French Dr., Hobbs, NM 88240; State of New Mexico District II B11 S First St., Artesia, NM 88210 Energy Minerals and Natural Resources District III 1000 Rio Brazos Road, Azide, NM 87410

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

Release Notification and Corrective Action

NABI	535	154-35	57			OPERA	TOR	X	Initial Rep	ort		Final Repo
Name of Company: BOPCO, L.P. Alal 737 Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220					Contact: Amy Ruth							
Address: 52	22 W. Mer	mod, Suite 7	04 Carls	bad, N.M. 88220			No. 575-887-73				-	
Facility Na	mc: Jame	s Ranch Un	it #10 Ba	ttery		Facility Typ	e: Exploration	and Production	on		7	
Surface Ov	vner: Fede	ral		Mineral C	Owner:	Federal		AP	I No. 30-	15-23	075	
				LOCA	ATIO	N OF RE	LEASE				5/1	
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/West Li	ine Cour	itv		
Н	1	235	30E	1980	North		660	Enst	Eddy			
			Lat	litude 32,3355	60°	Longitude	-103.827584	0				3,1
		1.0		NAT	URE	OF REL	EASE					
Type of Rela		Produced W	ater				Release 81 bbls	Volu	me Recove	red 4	0 bbl	s
Source of Re	elease Ta	nk Overflow					lour of Occurrent	e Date	and Hour	f Disco	_	
Was Immedi	ate Notice (Given?				12/14/201:	time unknown	12/14	1/2015 11:	5 am		
			Yes [No Not Re	equired		cher/Heather Patt	erson (NMOCI	D), Jim Am	os (BL	M)	
By Whom?	Amy Ruth					The second second second	four 12/14/201:					
Was a Water	course Read			7		If YES, Vo	olume Impacting	he Watercours	se.			
			Yes 2	The second second		N/A						
If a Watercon	urse was Im	pacted, Descr	ibe Fully.				111111		135			
Coupling on was repaired	water transi		d and pun	ap shut down. Pro	oduced v	vater tank fill	ed and overflowe	d into the batte	ry earthcn	contain	men).	. The pump
Describe Are The leak affe	a Affected a ected 1550 f	and Cleanup / l² of well pad	Action Tal within the	ten.* tank containment	and sta	nding fluids v	were recovered.					
regulations as public health should their o or the environ	or the envir operations had ment. In a	are required to conment. The ave failed to a	o report an acceptant idequately ICD accep	e is true and completed of a C-141 report investigate and re-	clease no ort by the emediate	otifications as NMOCD manualism	nd perform correct arked as "Final R on that pose a thr	tive actions for eport" does not	r releases w	hich m	tor of	liability
,	MI	NI	1				OIL CON	SERVATIO	NID NC	SION	1	
Signature:	[V.		ml	0				1	1 ,			
Printed Name	e: An	ny C Ruth				Approved by	Environmental S	pecialist:	my.	X	~	
litle: Ren	nediation-Sp	ecialist				Approval Date: 12 23 15 Expiration Date: NA						
E-mail Addre	ZZ/2	Ruth@basspe		432-661-0571		Conditions of Remediati	Approval: on per O.C.D EMEDIATION	Rules & C	auldelins			
Attach Addi	tional Shee	ts If Necess			1	ATER TH	AN:_1/22	116	-	1	201	2.3464

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	MERCHANICH SE
District RP	2RP-3464
Facility ID	y Consultation of the Cons
Application ID	

Release Notification

Responsible Party

	Party: ATC	Energy, Inc		OGRID	: 5380		
					et Telephone: (432)-221-7331		
Contact email: Kyle_Littrell@xtoenergy.com Inci			om	Incident	t#: 2RP-3464		
Contact mailing address 522 W. Mermod, Suite 704 Carlsbad, NM 88220							
			Location of	of Release	Source		
Latitude 32.335560 Longitud (NAD 83 in decimal degrees to 5 d			Longitude Longitude nal degrees to 5 de	e -103.827584			
Site Name Ja	mes Ranch	Unit #10 Battery	1 1 2 2 2 2 3	Site Typ	e Exploration and Production		
Date Release	Discovered	12/14/15		API# (if a	applicable) 30-015-23075		
Unit Letter	Section	Township	Range	Со	unty		
Н	1	23S	30E		ddy		
			Nature and				
Crude Oil	Materia	l(s) Released (Select all	that apply and attach ca		fic justification for the volumes provided below)		
Crude Oil		Volume Released	that apply and attach call (bbls)		fic justification for the volumes provided below) Volume Recovered (bbls)		
		Volume Released Volume Released	that apply and attach call (bbls)	lculations or speci	Volume Recovered (bbls) Volume Recovered (bbls) 40		
✓ Produced	Water	Volume Released Volume Released Is the concentration	that apply and attach call (bbls) (bbls) 81 on of dissolved chl	lculations or speci	fic justification for the volumes provided below) Volume Recovered (bbls)		
	Water	Volume Released Volume Released	that apply and attach call (bbls) (bbls) 81 on of dissolved chl 10,000 mg/l?	lculations or speci	Volume Recovered (bbls) Volume Recovered (bbls) 40		
✓ Produced	Water	Volume Released Volume Released Is the concentration produced water >	that apply and attach call (bbls) I (bbls) 81 on of dissolved chl 10,000 mg/l? I (bbls)	lculations or speci	Volume Recovered (bbls) Volume Recovered (bbls) Volume Recovered (bbls) 40 Yes No		
➤ Produced □ Condensat	Water	Volume Released Volume Released Is the concentration produced water > Volume Released Volume Released	that apply and attach call (bbls) I (bbls) 81 on of dissolved chl 10,000 mg/l? I (bbls)	alculations or special	Volume Recovered (bbls) Volume Recovered (bbls) Volume Recovered (bbls) 40 Yes No Volume Recovered (bbls)		

State of New Mexico Oil Conservation Division

Incident ID	E HUSINE NAME
District RP	2RP-3464
Facility ID	
Application ID	

Was this a major release as defined by	If YES, for what reason(s) does the respectively	onsible party consider this a major release?
19.15.29.7(A) NMAC?	The release was greater than 25 bbls.	
⊠ Yes □ No		
If YES, was immediate n Yes, immediate notice was	otice given to the OCD? By whom? To was given by Amy Ruth to Mike Bratcher/ H	whom? When and by what means (phone, email, etc)? (eather Patterson (NMOCD), and Jim Amos (BLM) on 12/14/15.
	Initial R	esponse
The responsible	party must undertake the following actions immediate	ely unless they could create a safety hazard that would result in injury
☐ The source of the rela	ease has been stopped.	
☐ The impacted area ha	s been secured to protect human health and	the environment.
Released materials ha	ave been contained via the use of berms or	dikes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed ar	d managed appropriately.
has begun, please attach	a narrative of actions to date. If remedial	remediation immediately after discovery of a release. If remediation efforts have been successfully completed or if the release occurred please attach all information needed for closure evaluation.
regulations all operators are public health or the environm failed to adequately investigated	required to report and/or file certain release not nent. The acceptance of a C-141 report by the (ate and remediate contamination that pose a thre	best of my knowledge and understand that pursuant to OCD rules and ifications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have eat to groundwater, surface water, human health or the environment. In responsibility for compliance with any other federal, state, or local laws
Printed Name: Kyle	Littrell	Title: SH&E Coordinator
Signature:	Hurt	Date: 4/12/2019
email: Kyle Littrell@xtoo	energy.com	Telephone:432-221-7331
OCD Only		
Received by:		Date:

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-3464
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?	>100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ⊠ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ⊠ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ⊠ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ⊠ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ⊠ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ⊠ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	⊠ Yes □ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ⊠ No

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

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

Incident ID	A PARTICIPATION OF THE PROPERTY OF THE PARTIES.
District RP	2RP-3464
Facility ID	Buy Ke Disposed School
Application ID	

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-3464
Facility ID) in sunstitution (1954)
Application ID	

Remediation Plan

Remediation Plan Checklist: Each of the following items must be	e included in the plan.			
 Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation points Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required) 				
Deferral Requests Only: Each of the following items must be con-	nfirmed as part of any request for deforral of remediation			
	roduction equipment where remediation could cause a major facility			
Extents of contamination must be fully delineated.				
Contamination does not cause an imminent risk to human health	h, the environment, or groundwater.			
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.				
Printed Name: Kyle Littrell	Title: SH&E Coordinator			
Signature:	Date: 4/12/2019			
email: Kyle Littrell@xtoenergy.com	Telephone: (432)-221-7331			
OCD Only				
Received by:	Date:			
☐ Approved ☐ Approved with Attached Conditions of	Approval Denied Deferral Approved			
Signature:	Date:			

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 Fc, 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	NAB1904653072
District RP	2RP-5243
Facility ID	
Application ID	pAB1904652533

Release Notification

Responsible Party

Contact Nan		Energy, Inc		OGRID:	5380	
Contact Name: Kyle Littrell		Contact Telephone: (432)-221-7331				
Contact email: Kyle_Littrell@xtoenergy.com			Incident	Incident #: 2RP-5243		
Contact mail NM 88220	ling address	522 W. Mermod, S	Suite 704 Carlsbad	,		
			Location	of Release S	Source	
atitude 32.3	35540		(NAD 83 in deci	Longitude imal degrees to 5 dec	-103.827513 imal places)	
Site Name Ja	mes Ranch I	Unit #10 Battery	liver by	Site Type	Bulk Storage and Separ	ration Facility
Date Release	Discovered	01/29/19	Karala main	API# (if a	oplicable) 30-015-23075	
Unit Letter	Section	Township	Range	Coi	inty	
Н	1	23S	30E		dy	
	Material	(A) P. 1 (C) 1	Nature and	Court of Sure Vision		
☑ Crude Oil	Material	(s) Released (Select all Volume Released	that apply and attach c	Court of Sure Vision	Release c justification for the volumes Volume Recovered (b	
☑ Crude Oil		(s) Released (Select all Volume Released Volume Released	that apply and attach click (bbls) 9.8	Court of Sure Vision	c justification for the volumes	obls) 7
		Volume Released	that apply and attach c 1 (bbls) 9.8 1 (bbls) on of dissolved chi	alculations or specif	volume Recovered (b)	obls) 7
	Water	Volume Released Volume Released Is the concentrati	that apply and attach c i (bbls) 9.8 l (bbls) on of dissolved chi 10,000 mg/l?	alculations or specif	volume Recovered (b	obls) 7
Produced	Water	Volume Released Volume Released Is the concentration produced water >	that apply and attach c I (bbls) 9.8 I (bbls) on of dissolved chi 10,000 mg/l?	alculations or specif	volume Recovered (b	obls) 7 obls)
Condensa	Water te	Volume Released Is the concentrati produced water > Volume Released Volume Released	that apply and attach c I (bbls) 9.8 I (bbls) on of dissolved chi 10,000 mg/l?	alculations or specif	Volume Recovered (by Yes No	obls) 7 obls) obls) obls) Mcf)

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-5243
Facility ID	S. You said this largery estimates
Application ID	

Was this a major release as defined by	If YES, for what reason(s) of	does the responsible party consider this a major release?
19.15.29.7(A) NMAC?		
☐ Yes ⊠ No		
If YES, was immediate n	otice given to the OCD? By	whom? To whom? When and by what means (phone, email, etc)?
		Initial Response
The responsible	party must undertake the following a	nctions immediately unless they could create a safety hazard that would result in injury
☐ The source of the rele	ease has been stopped.	
☐ The impacted area ha	s been secured to protect hum	nan health and the environment.
Released materials ha	we been contained via the use	e of berms or dikes, absorbent pads, or other containment devices.
All free liquids and re	coverable materials have been	en removed and managed appropriately.
If all the actions described	d above have not been underta	aken, explain why:
Per 19.15.29.8 B. (4) NM	AC the responsible party may	y commence remediation immediately after discovery of a release. If remediation
has begun, please attach a	a narrative of actions to date.	If remedial efforts have been successfully completed or if the release occurred (a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the infor	mation given above is true and co	complete to the best of my knowledge and understand that pursuant to OCD rules and
public health or the environm	nent. The acceptance of a C-141	ain release notifications and perform corrective actions for releases which may endanger report by the OCD does not relieve the operator of liability should their operations have
failed to adequately investigated	ite and remediate contamination t	that pose a threat to groundwater, surface water, human health or the environment. In
and/or regulations.	a C-141 report does not reneve t	the operator of responsibility for compliance with any other federal, state, or local laws
Printed Name: Kyle	Littrell	Title: SH&E Coordinator
Signature.	Volunt	Date: 4/12/2019
email: Kyle Littrell@xtoe	nergy.com	Telephone:432-221-7331
OCD Only		
Received by:		Date:

State of New Mexico Oil Conservation Division

Incident ID	CANADA DE SENSO AN
District RP	2RP-5243
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.

	P
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.

Ch	aracterization 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
	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

Incident ID	
District RP	2RP-5243
Facility ID	ANATONIS AND STORES
Application ID	

I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release no public health or the environment. The acceptance of a C-141 report by the failed to adequately investigate and remediate contamination that pose a thr addition, OCD acceptance of a C-141 report does not relieve the operator o and/or regulations.	tifications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have the groundwater, surface water, human health or the environment. In
Printed Name: Kyle Littrell	Title: SH&E Coordinator
Signature: Audit	Date: 4/12/2019
email: Kyle Littrell@xtoenergy.com	Telephone: (432)-221-7331
OCD Only	
Received by:	Date:

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-5243
Facility ID	
Application ID	tale (tale ustantia)

Remediation Plan

Remediation Plan Checklist: Each of the following items must b	e included in the plan.		
 ☑ Detailed description of proposed remediation technique ☑ Scaled sitemap with GPS coordinates showing delineation point ☑ Estimated volume of material to be remediated ☑ Closure criteria is to Table 1 specifications subject to 19.15.29. ☑ Proposed schedule for remediation (note if remediation plan times) 	12(C)(4) NMAC		
Deferral Requests Only: Each of the following items must be con	nfirmed as part of any request for deferral of remediation.		
Contamination must be in areas immediately under or around predeconstruction.	roduction equipment where remediation could cause a major facility		
Extents of contamination must be fully delineated.			
Contamination does not cause an imminent risk to human health	n, the environment, or groundwater.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.			
Printed Name; Kyle Littrell	Title: SH&E Coordinator		
Signature 199 Mario	Date: 4/12/2019		
email: Kyle Littrell@xtoenergy.com	Telephone: (432)-221-7331		
OCD Only			
Received by:	Date:		
☐ Approved	Approval		
Signature:	Date:		





ANALYTICAL REPORT

January 12, 2018

XTO Energy- Delaware Division

L961536 Sample Delivery Group:

Samples Received: 01/06/2018

Project Number: 30-015-23075

Description: Confirmation Soil Samples

Site: JRU-10 (2RP-3179)

Report To: Kyle Littrell

6401 N Holiday Hill Rd

Suite 200

Midland, TX 79707

Entire Report Reviewed By:

Naphne R Richards

Daphne Richards Technical Service Representative Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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Sc: Sample Chain of Custody

24

SS1 L961536-01 Solid			Collected by Aaron Williamson	Collected date/time 01/04/18 13:41	Received date/time 01/06/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1060773	1	01/09/18 13:10	01/09/18 13:17	KDW
Wet Chemistry by Method 300.0	WG1060409	1	01/08/18 16:26	01/09/18 01:56	MAJ
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060606	500	01/08/18 08:31	01/10/18 00:07	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060457	20	01/08/18 20:22	01/10/18 02:46	ACM
			Collected by	Collected date/time	Received date/time
SS2 L961536-02 Solid			Aaron Williamson	01/04/18 13:44	01/06/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1060779	1	01/09/18 12:42	01/09/18 12:53	KDW
Wet Chemistry by Method 300.0	WG1060419	1	01/07/18 11:29	01/07/18 15:01	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060606	1	01/08/18 08:31	01/10/18 00:29	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060457	1	01/08/18 20:22	01/10/18 21:09	ACM
			Collected by	Collected date/time	Received date/time
SS3 L961536-03 Solid			Aaron Williamson	01/04/18 13:47	01/06/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1060792	1	01/09/18 09:37	01/09/18 10:58	JD
Wet Chemistry by Method 300.0	WG1060419	1	01/07/18 11:29	01/07/18 15:09	DR
	WG1060619 WG1060606	1	01/08/18 08:31	01/10/18 00:52	BMB
Volatile Organic Compounds (GC) by Method 8015/8021					
Semi-Volatile Organic Compounds (GC) by Method 8015 SS4 L961536-04 Solid	WG1060457	1	01/08/18 20:22	01/09/18 20:58	ACM
			Collected by Aaron Williamson	Collected date/time 01/04/18 13:50	Received date/time 01/06/18 08:45
	B	B.I			
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1060792	1	01/09/18 09:37	01/09/18 10:58	JD
Wet Chemistry by Method 300.0	WG1060419	10	01/07/18 11:29	01/07/18 15:18	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060606	200	01/08/18 08:31	01/10/18 01:14	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060457	1	01/08/18 20:22	01/09/18 21:12	ACM
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060457	10	01/08/18 20:22	01/10/18 02:32	ACM
			Collected by	Collected date/time	Received date/time
SS5 L961536-05 Solid			Aaron Williamson	01/04/18 13:52	01/06/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
Tatal Calida In. Matha d 2540 C 2044	WC40C0702		date/time	date/time	ID.
Total Solids by Method 2540 G-2011	WG1060792	1	01/09/18 09:37	01/09/18 10:58	JD
Wet Chemistry by Method 300.0	WG1060419	1	01/07/18 11:29	01/07/18 15:26	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060606	1	01/08/18 08:31	01/10/18 01:36	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060457	1	01/08/18 20:22	01/10/18 21:23	ACM
			Collected by	Collected date/time	Received date/time
			Aaron Williamson	01/04/18 13:55	01/06/18 08:45
SS6 L961536-06 Solid					
SS6 L961536-06 Solid Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Method	Batch WG1060792	Dilution	·	•	Analyst JD
Method Total Solids by Method 2540 G-2011			date/time	date/time	
	WG1060792	1	date/time 01/09/18 09:37	date/time 01/09/18 10:58	JD



















Semi-Volatile Organic Compounds (GC) by Method 8015

			Collected by	Collected date/time	Received date/time
SS7 L961536-07 Solid			Aaron Williamson	01/04/18 13:57	01/06/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1060773	1	01/09/18 13:10	01/09/18 13:17	KDW
Wet Chemistry by Method 300.0	WG1060419	1	01/07/18 11:29	01/07/18 15:52	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060606	1	01/08/18 08:31	01/10/18 02:20	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060457	1	01/08/18 20:22	01/09/18 21:57	ACM
			Collected by	Collected date/time	Received date/time
SS8 L961536-08 Solid			Aaron Williamson	01/04/18 13:59	01/06/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1060792	1	01/09/18 09:37	01/09/18 10:58	JD
Wet Chemistry by Method 300.0	WG1060419	1	01/07/18 11:29	01/07/18 16:17	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060606	500	01/08/18 08:31	01/10/18 02:42	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1060457	50	01/08/18 20:22	01/11/18 01:32	ACM
			Collected by	Collected date/time	Received date/time
SS9 L961536-09 Solid			Aaron Williamson	01/04/18 14:03	01/06/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1060792	1	01/09/18 09:37	01/09/18 10:58	JD
Wet Chemistry by Method 300.0	WG1060419	1	01/07/18 11:29	01/07/18 16:26	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1060606	1	01/08/18 08:31	01/10/18 03:05	BMB

WG1060457





















ACM

01/08/18 20:22

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01/10/18 21:38

Japhne R Richards

Technical Service Representative

Daphne Richards

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

















XTO Energy- Delaware Division

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Collected date/time: 01/04/18 13:41

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	92.5		1	01/09/2018 13:17	WG1060773



Wet Chemistry by Method 300.0

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Chloride	110		10.8	1	01/09/2018 01:56	WG1060409



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Volatile Organic Compounds (GC) by Method 8015/8021

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Benzene	0.281	В	0.270	500	01/10/2018 00:07	WG1060606
Toluene	10.8		2.70	500	01/10/2018 00:07	WG1060606
Ethylbenzene	2.96		0.270	500	01/10/2018 00:07	WG1060606
Total Xylene	125		0.811	500	01/10/2018 00:07	WG1060606
TPH (GC/FID) Low Fraction	3140		54.0	500	01/10/2018 00:07	WG1060606
(S) a,a,a-Trifluorotoluene(FID)	94.4		77.0-120		01/10/2018 00:07	WG1060606
(S) a,a,a-Trifluorotoluene(PID)	101		75.0-128		01/10/2018 00:07	WG1060606



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	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	4960		86.5	20	01/10/2018 02:46	WG1060457
C28-C40 Oil Range	201		86.5	20	01/10/2018 02:46	WG1060457
(S) n-Ternhenyl	0.000	17	18 0-148		01/10/2018 02:46	WG1060457

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Collected date/time: 01/04/18 13:44

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	93.8		1	01/09/2018 12:53	WG1060779



Wet Chemistry by Method 300.0

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Chloride	1010		10.7	1	01/07/2018 15:01	WG1060419



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Volatile Organic Compounds (GC) by Method 8015/8021

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg		date / time	
Benzene	ND		0.000533	1	01/10/2018 00:29	WG1060606
Toluene	ND		0.00533	1	01/10/2018 00:29	WG1060606
Ethylbenzene	ND		0.000533	1	01/10/2018 00:29	WG1060606
Total Xylene	ND		0.00160	1	01/10/2018 00:29	WG1060606
TPH (GC/FID) Low Fraction	ND		0.107	1	01/10/2018 00:29	WG1060606
(S) a,a,a-Trifluorotoluene(FID)	93.9		77.0-120		01/10/2018 00:29	WG1060606
(S) a,a,a-Trifluorotoluene(PID)	100		75.0-128		01/10/2018 00:29	WG1060606



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Serii Volulie Organie Compounds (CC) by Method CO10									
	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	<u>Batch</u>			
Analyte	mg/kg		mg/kg		date / time				
C10-C28 Diesel Range	23.6		4.27	1	01/10/2018 21:09	WG1060457			
C28-C40 Oil Range	8.10		4.27	1	01/10/2018 21:09	WG1060457			
(S) o-Terphenyl	52.5		18.0-148		01/10/2018 21:09	WG1060457			

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Collected date/time: 01/04/18 13:47

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	%			date / time	
Total Solids	92.4		1	01/09/2018 10:58	WG1060792



Wet Chemistry by Method 300.0

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Chloride	109		10.8	1	01/07/2018 15:09	WG1060419



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Volatile Organic Compounds (GC) by Method 8015/8021

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg		date / time	
Benzene	ND		0.000541	1	01/10/2018 00:52	WG1060606
Toluene	ND		0.00541	1	01/10/2018 00:52	WG1060606
Ethylbenzene	ND		0.000541	1	01/10/2018 00:52	WG1060606
Total Xylene	0.00199		0.00162	1	01/10/2018 00:52	WG1060606
TPH (GC/FID) Low Fraction	ND		0.108	1	01/10/2018 00:52	WG1060606
(S) a,a,a-Trifluorotoluene(FID)	92.3		77.0-120		01/10/2018 00:52	WG1060606
(S) a,a,a-Trifluorotoluene(PID)	98.6		75.0-128		01/10/2018 00:52	WG1060606



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	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	259		4.33	1	01/09/2018 20:58	WG1060457
C28-C40 Oil Range	43.3		4.33	1	01/09/2018 20:58	WG1060457
(S) n-Ternhenyl	67.4		18 0-148		01/09/2018 20:58	WG1060457





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Collected date/time: 01/04/18 13:50

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	%			date / time	
Total Solids	86.5		1	01/09/2018 10:58	WG1060792



Wet Chemistry by Method 300.0

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Chloride	5050		116	10	01/07/2018 15:18	WG1060419



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Volatile Organic Compounds (GC) by Method 8015/8021

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Benzene	0.268	<u>B</u>	0.116	200	01/10/2018 01:14	WG1060606
Toluene	ND		1.16	200	01/10/2018 01:14	WG1060606
Ethylbenzene	0.481		0.116	200	01/10/2018 01:14	WG1060606
Total Xylene	10.1		0.347	200	01/10/2018 01:14	WG1060606
TPH (GC/FID) Low Fraction	1810		23.1	200	01/10/2018 01:14	WG1060606
(S) a,a,a-Trifluorotoluene(FID)	91.4		77.0-120		01/10/2018 01:14	WG1060606
(S) a,a,a-Trifluorotoluene(PID)	96.2		75.0-128		01/10/2018 01:14	WG1060606



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	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	3510		46.3	10	01/10/2018 02:32	WG1060457
C28-C40 Oil Range	160		4.63	1	01/09/2018 21:12	WG1060457
(S) o-Terphenyl	94.8		18.0-148		01/09/2018 21:12	WG1060457
(S) o-Terphenyl	14.9	J1	18.0-148		01/10/2018 02:32	WG1060457

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Collected date/time: 01/04/18 13:52

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	%			date / time	
Total Solids	96.0		1	01/09/2018 10:58	WG1060792



Wet Chemistry by Method 300.0

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Chloride	36.3		10.4	1	01/07/2018 15:26	WG1060419



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Volatile Organic Compounds (GC) by Method 8015/8021

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Benzene	ND		0.000521	1	01/10/2018 01:36	WG1060606
Toluene	ND		0.00521	1	01/10/2018 01:36	WG1060606
Ethylbenzene	ND		0.000521	1	01/10/2018 01:36	WG1060606
Total Xylene	0.00697		0.00156	1	01/10/2018 01:36	WG1060606
TPH (GC/FID) Low Fraction	ND		0.104	1	01/10/2018 01:36	WG1060606
(S) a,a,a-Trifluorotoluene(FID)	93.5		77.0-120		01/10/2018 01:36	WG1060606
(S) a,a,a-Trifluorotoluene(PID)	100		75.0-128		01/10/2018 01:36	WG1060606



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	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	ND		4.17	1	01/10/2018 21:23	WG1060457
C28-C40 Oil Range	4.49		4.17	1	01/10/2018 21:23	WG1060457
(S) o-Terphenyl	78.0		18.0-148		01/10/2018 21:23	WG1060457

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Collected date/time: 01/04/18 13:55

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	%			date / time	
Total Solids	93.4		1	01/09/2018 10:58	<u>WG1060792</u>

Wet Chemistry by Method 300.0

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Chloride	408		10.7	1	01/07/2018 15:35	WG1060419



Volatile Organic Compounds (GC) by Method 8015/8021

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Benzene	ND		0.000535	1	01/10/2018 01:58	WG1060606
Toluene	ND		0.00535	1	01/10/2018 01:58	WG1060606
Ethylbenzene	ND		0.000535	1	01/10/2018 01:58	WG1060606
Total Xylene	ND		0.00161	1	01/10/2018 01:58	WG1060606
TPH (GC/FID) Low Fraction	ND		0.107	1	01/10/2018 01:58	WG1060606
(S) a,a,a-Trifluorotoluene(FID)	94.1		77.0-120		01/10/2018 01:58	WG1060606
(S) a,a,a-Trifluorotoluene(PID)	100		75.0-128		01/10/2018 01:58	WG1060606



	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	ND		4.28	1	01/09/2018 21:41	WG1060457
C28-C40 Oil Range	ND		4.28	1	01/09/2018 21:41	WG1060457
(S) o-Terphenyl	63.0		18.0-148		01/09/2018 21:41	WG1060457











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Collected date/time: 01/04/18 13:57

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	96.1		1	01/09/2018 13:17	WG1060773

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Wet Chemistry by Method 300.0

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Chloride	37.8		10.4	1	01/07/2018 15:52	WG1060419



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Volatile Organic Compounds (GC) by Method 8015/8021

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Benzene	0.000857	В	0.000520	1	01/10/2018 02:20	WG1060606
Toluene	0.00873		0.00520	1	01/10/2018 02:20	WG1060606
Ethylbenzene	0.00178		0.000520	1	01/10/2018 02:20	WG1060606
Total Xylene	0.0186		0.00156	1	01/10/2018 02:20	WG1060606
TPH (GC/FID) Low Fraction	0.236	<u>B</u>	0.104	1	01/10/2018 02:20	WG1060606
(S) a,a,a-Trifluorotoluene(FID)	89.5		77.0-120		01/10/2018 02:20	WG1060606
(S) a,a,a-Trifluorotoluene(PID)	98.7		75.0-128		01/10/2018 02:20	WG1060606



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	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	19.3		4.16	1	01/09/2018 21:57	WG1060457
C28-C40 Oil Range	10.8		4.16	1	01/09/2018 21:57	WG1060457
(S) o-Terphenyl	52.1		18.0-148		01/09/2018 21:57	WG1060457

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Collected date/time: 01/04/18 13:59

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	90.2		1	01/09/2018 10:58	WG1060792

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Wet Chemistry by Method 300.0

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Chloride	879		11.1	1	01/07/2018 16:17	WG1060419



Volatile Organic Compounds (GC) by Method 8015/8021

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Benzene	ND		0.277	500	01/10/2018 02:42	WG1060606
Toluene	15.0		2.77	500	01/10/2018 02:42	WG1060606
Ethylbenzene	3.43		0.277	500	01/10/2018 02:42	WG1060606
Total Xylene	139		0.831	500	01/10/2018 02:42	WG1060606
TPH (GC/FID) Low Fraction	3160		55.4	500	01/10/2018 02:42	WG1060606
(S) a,a,a-Trifluorotoluene(FID)	94.6		77.0-120		01/10/2018 02:42	WG1060606
(S) a,a,a-Trifluorotoluene(PID)	100		75.0-128		01/10/2018 02:42	WG1060606



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	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg	<u> </u>	mg/kg		date / time	
C10-C28 Diesel Range	8810		222	50	01/11/2018 01:32	WG1060457
C28-C40 Oil Range	ND		222	50	01/11/2018 01:32	WG1060457
(S) o-Terphenyl	0.000	<u>J7</u>	18.0-148		01/11/2018 01:32	WG1060457

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Collected date/time: 01/04/18 14:03

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	%			date / time	
Total Solids	92.8		1	01/09/2018 10:58	WG1060792



Wet Chemistry by Method 300.0

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Chloride	1050		10.8	1	01/07/2018 16:26	WG1060419



Cn

Volatile Organic Compounds (GC) by Method 8015/8021

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg		date / time	
Benzene	ND		0.000539	1	01/10/2018 03:05	WG1060606
Toluene	ND		0.00539	1	01/10/2018 03:05	WG1060606
Ethylbenzene	ND		0.000539	1	01/10/2018 03:05	WG1060606
Total Xylene	ND		0.00162	1	01/10/2018 03:05	WG1060606
TPH (GC/FID) Low Fraction	ND		0.108	1	01/10/2018 03:05	WG1060606
(S) a,a,a-Trifluorotoluene(FID)	94.0		77.0-120		01/10/2018 03:05	WG1060606
(S) a,a,a-Trifluorotoluene(PID)	100		75.0-128		01/10/2018 03:05	WG1060606



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Sc

		\ / /				
	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	ND		4.31	1	01/10/2018 21:38	WG1060457
C28-C40 Oil Range	ND		4.31	1	01/10/2018 21:38	WG1060457
(S) o-Terphenyl	71.1		18.0-148		01/10/2018 21:38	WG1060457

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Total Solids by Method 2540 G-2011

L961536-01,07

Method Blank (MB)

Total Solids

(MB) R3278455-1 01	/09/18 13:17			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.002			

L961517-04 Original Sample (OS) • Duplicate (DUP)

94.3

(OS) L961517-04 01/09/18 1	3:17 • (DUP) R3	278455-3 01/0	09/18 13:17	7		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%

0

5
Sr
J1

Laboratory Control Sample (LCS)

(LCS) R3278455-2 01/09/18 13:17

(ECS) NS270433 2	01/03/10 13.17				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85-115	

94.3





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L961536-02

Total Solids by Method 2540 G-2011

Method	Blank	(MB)
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Total Solids

(MB) R32/8447-1 01/09/18	12:53			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	%		%	%



L961532-03 Original Sample (OS) • Duplicate (DUP)

0.002

100	11001522 02	01/09/18 12:53 •		D2270447 2	01/00/10 12.52
1(1).5	11 9015.57-0.5	U1/U9/18 1/ 5.5 • 1	ロルカ	1 R.37 / 844 /3	U1/U9/18 17:53

,	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	92.1	92.1	1	0		5



⁶Qc

Laboratory Control Sample (LCS)

(LCS) R3278447-2 01/09/18 12:53

(LCS) R32/844/-2 01/09/1	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85-115	





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Total Solids by Method 2540 G-2011

L961536-03,04,05,06,08,09

Method Blank (MB)

(MB) R3278450-1	01/09/18 10:58			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0			

Ss

[†]Cn

L961536-04 Original Sample (OS) • Duplicate (DUP)

		Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte		%	%		%		%
Total Sol	ids	86.5	88.7	1	3		5



Laboratory Control Sample (LCS)

(LCS) R3278450-2	01/09/18 10:58
------------------	----------------

(LCS) R32/8450-2 01/09/1	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85-115	





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Wet Chemistry by Method 300.0

L961536-01

Method Blank (MB)

(MB) R3278237-1 01/08	3/18 17:56				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/kg		mg/kg	mg/kg	
Chloride	3.47		0.795	10.0	





L961528-09 Original Sample (OS) • Duplicate (DUP)

(OS) L961528-09 01/08/18 23:10 • (DUP) R3278237-4 01/08/18 23:19

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	229	219	1	4.39		20





L961532-09 Original Sample (OS) • Duplicate (DUP)

(OS) | 961532-09 01/09/18 01:39 . (DI IP) P3278237-7 01/09/18 01:47

(OS) L901332-09 01109/16	Original Result			DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	60.4	58.5	1	3.27		20





Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3278237-2 01/08/18 18:05 • (LCSD) R3278237-3 01/08/18 18:13

(200)	Spike Amount	•	LCSD Result		LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Chloride	200	199	200	99.4	100	90-110			0.657	20

L961532-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L961532-01 01/08/18 23:53 • (MS) P3278237-5 01/09/18 00:01 • (MSD) P3278237-6 01/09/18 00:10

(O3) L901332-01	01/00/10 23.33 • (IVIS) K	32/023/-3 01/	03/10 00.01	(IVISD) KS2762	37-0 01/03/10	3 00.10							
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%	
Chloride	500	431	1010	986	116	111	1	80-120	E		2.62	20	

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Wet Chemistry by Method 300.0

L961536-02,03,04,05,06,07,08,09

Method Blank (MB)

(MB) R327805	1 01/07/18 13:40			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloride	2.48	J	0.795	10.0



L961536-06 Original Sample (OS) • Duplicate (DUP)

(OS) L961536-06 01/07/	18 15:35 • (DUP) F	R3278057-4	01/07/18 15	:43		
	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	408	411	1	0.667		20



L961541-04 Original Sample (OS) • Duplicate (DUP)

(OS) L961541-04 01/07/18 1	7:26 • (DUP) R3	3278057-7 01	/07/18 17:3	34			
	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	mg/kg	mg/kg		%		%	
Chloride	32.9	35.8	1	8 32		20	



Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3278057-2 01/07	/18 13:48 • (LCSE	D) R3278057-:	3 01/07/18 13:5	7						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Chloride	200	200	200	99.9	100	90-110			0.085	20



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Volatile Organic Compounds (GC) by Method 8015/8021

L961536-01,02,03,04,05,06,07,08,09

Method Blank (MB)

(MB) R3278375-5 01/08/	18 16:49			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Benzene	0.000165	<u>J</u>	0.000120	0.000500
Toluene	0.000245	<u>J</u>	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0255	<u>J</u>	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	96.1			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	108			75.0-128



(LCS) R3278375-1 01/08/	18 14:57 • (LCSD) R3278375-2	01/08/18 15:19								
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
Benzene	0.0500	0.0443	0.0442	88.6	88.3	71.0-121			0.338	20	
Toluene	0.0500	0.0473	0.0470	94.5	93.9	72.0-120			0.626	20	
Ethylbenzene	0.0500	0.0463	0.0460	92.6	92.0	76.0-121			0.594	20	
Total Xylene	0.150	0.142	0.141	94.5	93.9	75.0-124			0.637	20	
(S) a,a,a-Trifluorotoluene(FID)				94.3	94.5	77.0-120					
(S) a,a,a-Trifluorotoluene(PID)				104	105	75.0-128					

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

LCS) R3278375-3 01/08/18 15:42 • (LCSD) R3278375-4 01/08/18 16:04											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
TPH (GC/FID) Low Fraction	5.50	4.87	4.74	88.5	86.2	70.0-136			2.57	20	
(S) a,a,a-Trifluorotoluene(FID)				111	111	77.0-120					
(S) a,a,a-Trifluorotoluene(PID)				122	122	75.0-128					





















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L961536-01,02,03,04,05,06,07,08,09 Semi-Volatile Organic Compounds (GC) by Method 8015

Method Blank (MB)

(MR) P3278395-1 01/09/18 19:03

(MB) K3276393-1 01/09/16 19:03												
	MB Result	MB Qualifier	MB MDL	MB RDL								
Analyte	mg/kg		mg/kg	mg/kg								
C10-C28 Diesel Range	U		1.61	4.00								
C28-C40 Oil Range	U		0.274	4.00								
(S) o-Terphenyl	54.5			18.0-148								









Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

// CS/ D3278395_2 01/09/18 19:17 . // CSD) P3278395_3 01/09/18 19:30

103) 832/8335-2 01/03/16 13.1/ • (1030) 832/8335-3 01/03/16 13.30											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
C10-C28 Diesel Range	60.0	33.4	35.5	55.7	59.2	50.0-150			6.18	20	
(S) o-Terphenyl				60.2	62.0	18.0-148					









(OS) L961541-01 01/10/18 01:49 • (MS) R3278395-4 01/10/18 02:03 • (MSD) R3278395-5 01/10/18 02:17

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
C10-C28 Diesel Range	66.6	1510	1750	1820	364	477	5	50.0-150	V	V	4.18	20
(S) o-Terphenyl					16.9	16.0		18.0-148	<u>J2</u>	<u>J2</u>		





Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

Appreviations and	2 Delimitoris
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

В	The same analyte is found in the associated blank.
Е	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
V	The sample concentration is too high to evaluate accurate spike recoveries.























ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE. * Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee 14	2006
Louisiana	Al30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

Third Party & Federal Accreditations

A2LA - ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA - ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



















Else E.		_	Billing Infor	rmation:		T	A			alysis / Conta	ainer / Preserv	ative		Chain of Custody	Page of
1-15			\	MA		Pres								W.F	SC
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roject Confirmation	. 2	Sande		City/State Collected:	N	M	-	4	hox		1- 18			Fax: 615-758-5859	market:
hone: -970-317-1867	Client Project P	, ,		Lab Project #			Method	Metho	Met					G09	536
elected by (print):	Site/Facility ID	#	-3179)	01291	8003		EPA/	100	EPA					Acctnum: XT	XTMO
allected by (signature):	Rush? (L: Same Da Next Day			Quote #	sults Needed		7	A	Se					Prelogin: TSR:	
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552	Grab	55	611	1-4-1	8 13:44	1	/	/	1					-	102
553	Grab	55	6	1-4-1	5 13:47		1/	14	1					-	-03
554	brab	55	6"	1-4-1	8 13:50		1	1	1						-64
555	Grab	55	6	1-4-1	8 13:52	1	V	14	/					-	
556	Grab	55	5	1-4-19	113:55	1	1	1	1						-07
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NFE ARL	brab	55	64	- 1-13	17:02	1	V	1	V				Tell Cs		
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W - Drinking Water T - Other	Samples retur	ned via: edExCou	rier		Tracking #	(8	27	7/1	10	1610)	_	VOA Zero	If Applical Headspace:	ole _y _
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Analytical Report 616897

for

LT Environmental, Inc.

Project Manager: Adrian Baker
JRU 10

08-MAR-19

Collected By: Client





1211 W. Florida Ave Midland TX 79701

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

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

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

Xenco-Tampa: Florida (E87429), North Carolina (483) Xenco-Lakeland: Florida (E84098)





08-MAR-19

Project Manager: Adrian Baker LT Environmental, Inc. 4600 W. 60th Avenue Arvada, CO 80003

Reference: XENCO Report No(s): 616897

JRU 10

Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 616897. 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. 616897 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Vramer

Project Assistant

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

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



Sample Cross Reference 616897



LT Environmental, Inc., Arvada, CO

JRU 10

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	03-06-19 11:50	1 - 4 ft	616897-001
SW02	S	03-06-19 11:00	1 - 4 ft	616897-002
SW03	S	03-06-19 11:10	1 - 4 ft	616897-003
SW04	S	03-06-19 11:30	1 - 4 ft	616897-004
SW05	S	03-06-19 11:30	1 - 4 ft	616897-005

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU 10

Project ID: Report Date: 08-MAR-19 Work Order Number(s): 616897 Date Received: 03/07/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3081570 BTEX by EPA 8021B

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



Certificate of Analysis Summary 616897

LT Environmental, Inc., Arvada, CO

Project Name: JRU 10

Page 9

Project Id:

Project Location:

Contact: Adrian Baker

Delaware Basin

Date Received in Lab: Thu Mar-07-19 11:36 am

Report Date: 08-MAR-19

Project Manager: Jessica Kramer

	Lab Id:	616897-0	001	616897-0	002	616897-0	003	616897-	004	616897-	005	
Analysis Requested	Field Id:	SW01		SW02	!	SW03		SW04	1	SW0	5	
mulysis Requesicu	Depth:	1-4 ft		1-4 ft		1-4 ft		1-4 ft	t	1-4 f	t	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOII	_	
	Sampled:	Mar-06-19	11:50	Mar-06-19	11:00	Mar-06-19	11:10	Mar-06-19	11:30	Mar-06-19	11:30	
BTEX by EPA 8021B	Extracted:	Mar-07-19	12:00									
	Analyzed:	Mar-08-19	02:33	Mar-08-19	02:52	Mar-08-19	03:11	Mar-08-19	03:30	Mar-08-19	03:49	
	Units/RL:	mg/kg	RL									
Benzene		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199	
Toluene		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199	
Ethylbenzene		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00199	0.00199	
m,p-Xylenes		< 0.00401	0.00401	< 0.00402	0.00402	< 0.00400	0.00400	< 0.00401	0.00401	< 0.00398	0.00398	
o-Xylene		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	0.00846	0.00199	
Total Xylenes		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	0.00846	0.00199	
Total BTEX		< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00200	0.00200	0.00846	0.00199	
Inorganic Anions by EPA 300	Extracted:	Mar-07-19	14:00									
	Analyzed:	Mar-08-19	01:35	Mar-08-19	01:46	Mar-08-19	02:18	Mar-08-19	10:39	Mar-08-19	10:50	
	Units/RL:	mg/kg	RL									
Chloride		112	4.96	200	4.99	568	4.98	1330	4.98	283	5.00	
TPH by SW8015 Mod	Extracted:	Mar-07-19	17:00									
	Analyzed:	Mar-08-19	06:44	Mar-07-19	22:54	Mar-07-19	23:14	Mar-07-19	23:34	Mar-07-19	23:53	
	Units/RL:	mg/kg	RL									
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	20.5	15.0	
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	316	15.0	
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	
Total TPH		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	337	15.0	

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

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

Jessica Kramer

Jessica Kramer Project Assistant





LT Environmental, Inc., Arvada, CO

JRU 10

Sample Id: **SW01** Matrix:

Soil

Date Received:03.07.19 11.36

Lab Sample Id: 616897-001

Date Collected: 03.06.19 11.50

Sample Depth: 1 - 4 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: CHE

Seq Number: 3081522

Result

% Moisture:

CHE Analyst:

Date Prep:

112

03.07.19 14.00

Basis:

Wet Weight

Parameter

Cas Number Chloride 16887-00-6

RL

4.96

Units **Analysis Date** 03.08.19 01.35 mg/kg

Flag

Dil 1

Analytical Method: TPH by SW8015 Mod

ARM

ARM

Date Prep:

03.07.19 17.00

% Moisture:

Basis:

Prep Method: TX1005P

Wet Weight

Seq Number: 3081581

Tech:

Analyst:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	03.08.19 06.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	03.08.19 06.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	03.08.19 06.44	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	03.08.19 06.44	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	96	%	70-135	03.08.19 06.44		
o-Terphenyl		84-15-1	96	%	70-135	03.08.19 06.44		





LT Environmental, Inc., Arvada, CO

JRU 10

Sample Id: **SW01**Lab Sample Id: 616897-001

Matrix:

Soil

Date Received:03.07.19 11.36

Date Collected: 03.06.19 11.50

Sample Depth: 1 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

% Moisture:

Tech: SCM

Analyst:

SCM SCM

Date Prep: 03.07.19 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.08.19 02.33	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.08.19 02.33	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.08.19 02.33	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	03.08.19 02.33	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.08.19 02.33	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	03.08.19 02.33	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.08.19 02.33	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	106	%	70-130	03.08.19 02.33		
1,4-Difluorobenzene		540-36-3	111	%	70-130	03.08.19 02.33		





LT Environmental, Inc., Arvada, CO

JRU 10

Soil

Sample Id: SW02

Matrix:

Date Received:03.07.19 11.36

Lab Sample Id: 616897-002

Date Collected: 03.06.19 11.00

Sample Depth: 1 - 4 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: CI

CHE

% Moisture:

Analyst: CHE

Date Prep:

03.07.19 14.00 Basis:

Wet Weight

Seq Number: 3081522

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 200
 4.99
 mg/kg
 03.08.19 01.46
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

Analyst: ARM

Date Prep: 03.07.19 17.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	03.07.19 22.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	03.07.19 22.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	03.07.19 22.54	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	03.07.19 22.54	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	98	%	70-135	03.07.19 22.54		
o-Terphenyl		84-15-1	97	%	70-135	03.07.19 22.54		





LT Environmental, Inc., Arvada, CO

JRU 10

Sample Id: SW02

Matrix:

Soil

Date Received:03.07.19 11.36

Lab Sample Id: 616897-002

Date Collected: 03.06.19 11.00

Sample Depth: 1 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: Analyst: SCM SCM

Date Prep: 03.07.19 12.00

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	03.08.19 02.52	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	03.08.19 02.52	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	03.08.19 02.52	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	03.08.19 02.52	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	03.08.19 02.52	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	03.08.19 02.52	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	03.08.19 02.52	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	111	%	70-130	03.08.19 02.52		
4-Bromofluorobenzene		460-00-4	111	%	70-130	03.08.19 02.52		





Dil

1

LT Environmental, Inc., Arvada, CO

JRU 10

Sample Id: **SW03** Matrix:

Soil

Date Received:03.07.19 11.36

Lab Sample Id: 616897-003

Date Collected: 03.06.19 11.10

Sample Depth: 1 - 4 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst:

Chloride

CHE CHE

Date Prep: 03.07.19 14.00

4.98

% Moisture:

Basis:

mg/kg

Wet Weight

Seq Number: 3081522

Parameter Cas Number Result RLUnits **Analysis Date** Flag

568

16887-00-6

03.08.19 02.18

Prep Method: TX1005P

Tech: Analyst: ARM ARM

Analytical Method: TPH by SW8015 Mod

Date Prep:

03.07.19 17.00

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	03.07.19 23.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9		mg/kg	03.07.19 23.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	03.07.19 23.14	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	03.07.19 23.14	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	100	%	70-135	03.07.19 23.14		
o-Terphenyl		84-15-1	99	%	70-135	03.07.19 23.14		





LT Environmental, Inc., Arvada, CO

JRU 10

Soil

Sample Id: **SW03**

Matrix:

Date Received:03.07.19 11.36

Date Collected: 03.06.19 11.10

Sample Depth: 1 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

% Moisture:

Tech: SCM

Analyst:

SCM

03.07.19 12.00 Date Prep:

Basis: Wet Weight

Seq Number: 3081570

Lab Sample Id: 616897-003

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.08.19 03.11	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.08.19 03.11	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.08.19 03.11	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	03.08.19 03.11	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.08.19 03.11	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	03.08.19 03.11	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.08.19 03.11	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	109	%	70-130	03.08.19 03.11		
1,4-Difluorobenzene		540-36-3	112	%	70-130	03.08.19 03.11		





LT Environmental, Inc., Arvada, CO

JRU 10

Soil

Sample Id: **SW04**

Matrix:

Date Received:03.07.19 11.36

Lab Sample Id: 616897-004

Date Collected: 03.06.19 11.30

4.98

Sample Depth: 1 - 4 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

% Moisture:

Tech: Analyst:

Chloride

CHE CHE

Date Prep:

03.07.19 14.00

Basis:

Wet Weight

Seq Number: 3081522

Parameter Cas Number

16887-00-6

Result RL

1330

Units

Analysis Date

03.08.19 10.39

Flag Dil

1

Analytical Method: TPH by SW8015 Mod

% Moisture:

mg/kg

Prep Method: TX1005P

Tech: Analyst: ARM ARM

Date Prep:

03.07.19 17.00

Basis:

Wet Weight

Seq Number: 3081581

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	03.07.19 23.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	03.07.19 23.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	03.07.19 23.34	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	03.07.19 23.34	U	1
Surrogate		Cas Number	% D	Units	Limits	Analysis Date	Flag	

111-85-3 70-135 $03.07.19\ 23.34$ 1-Chlorooctane 100 % o-Terphenyl 84-15-1 100 70-135 03.07.19 23.34





LT Environmental, Inc., Arvada, CO

JRU 10

Sample Id: SW04

Matrix:

Soil

Date Received:03.07.19 11.36

Lab Sample Id: 616897-004

Date Collected: 03.06.19 11.30

Sample Depth: 1 - 4 ft

Analytical Method: BTEX by EPA 8021B

SCM

Prep Method: SW5030B

Tech: SCM

Analyst:

Date Prep:

% Moisture: 03.07.19 12.00 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.08.19 03.30	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.08.19 03.30	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.08.19 03.30	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	03.08.19 03.30	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.08.19 03.30	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	03.08.19 03.30	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.08.19 03.30	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	112	%	70-130	03.08.19 03.30		
1,4-Difluorobenzene		540-36-3	112	%	70-130	03.08.19 03.30		





LT Environmental, Inc., Arvada, CO

JRU 10

Soil

Sample Id: **SW05**

Matrix:

Date Received:03.07.19 11.36

Lab Sample Id: 616897-005

Date Collected: 03.06.19 11.30

Sample Depth: 1 - 4 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

% Moisture:

Tech: Analyst: CHE CHE

Date Prep:

03.07.19 14.00

Basis:

Wet Weight

Seq Number: 3081522

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 03.08.19 10.50 283 5.00 mg/kg 1

Analytical Method: TPH by SW8015 Mod

ARM

ARM Analyst:

Tech:

Date Prep:

03.07.19 17.00

% Moisture:

Basis:

Prep Method: TX1005P

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	20.5	15.0		mg/kg	03.07.19 23.53		1
Diesel Range Organics (DRO)	C10C28DRO	316	15.0		mg/kg	03.07.19 23.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	03.07.19 23.53	U	1
Total TPH	PHC635	337	15.0		mg/kg	03.07.19 23.53		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	97	%	70-135	03.07.19 23.53		
o-Terphenyl		84-15-1	95	%	70-135	03.07.19 23.53		





LT Environmental, Inc., Arvada, CO

JRU 10

Sample Id: **SW05** Matrix:

Soil

Date Received:03.07.19 11.36

Lab Sample Id: 616897-005

Date Collected: 03.06.19 11.30

Sample Depth: 1 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Basis:

Wet Weight

Analyst:

SCM

03.07.19 12.00 Date Prep:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.08.19 03.49	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.08.19 03.49	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.08.19 03.49	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.08.19 03.49	U	1
o-Xylene	95-47-6	0.00846	0.00199		mg/kg	03.08.19 03.49		1
Total Xylenes	1330-20-7	0.00846	0.00199		mg/kg	03.08.19 03.49		1
Total BTEX		0.00846	0.00199		mg/kg	03.08.19 03.49		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	106	%	70-130	03.08.19 03.49		
4-Bromofluorobenzene		460-00-4	108	%	70-130	03.08.19 03.49		



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.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

^{**} Surrogate recovered outside laboratory control limit.



QC Summary 616897

LT Environmental, Inc.

JRU 10

Analytical Method: Inorganic Anions by EPA 300

3081522

7673144-1-BLK

Matrix: Solid

Prep Method: Date Prep: E300P

Seq Number:

107

03.07.19

MB Sample Id:

MR

LCS Sample Id:

7673144-1-BKS

266

LCSD Sample Id: 7673144-1-BSD %RPD RPD Limit Units

Analysis

Parameter Chloride

Spike Result Amount < 5.00

LCS LCS Result %Rec 267

LCSD LCSD %Rec Result

106

Limits

90-110

0 20

Date 03.07.19 22:55 mg/kg

Flag

Flag

Analytical Method: Inorganic Anions by EPA 300

3081522

Matrix: Soil

Prep Method: Date Prep:

E300P

Seq Number: Parent Sample Id:

616897-002

MS Sample Id: 616897-002 S

0

03.07.19

102

MSD Sample Id:

616897-002 SD

Parameter

Chloride

Parent

MS Result 454

MS %Rec 102

MSD MSD Result %Rec

Limits 90-110 %RPD RPD Limit Units

Analysis Date 03.08.19 01:56

Analytical Method: Inorganic Anions by EPA 300

Result

200

Spike

250

Amount

250

Prep Method:

E300P

mg/kg

Seq Number: Parent Sample Id: 3081522

Matrix: Soil

616899-002 S

456

Date Prep:

20

03.07.19

MSD Sample Id: 616899-002 SD

Parameter

616899-002

Parent Spike Result

MS Sample Id: MS MS Result

MSD

MSD

%RPD RPD Limit Units Limits

Analysis Flag

Chloride

Amount 250

%Rec 286 114 Result 264

%Rec 105 90-110 8 20

Prep Method:

mg/kg

Date 03.07.19 23:27 X

Analytical Method: TPH by SW8015 Mod

7673224-1-BLK

TX1005P

Seq Number: MB Sample Id: 3081581

1.54

Matrix: Solid

LCSD Sample Id:

Date Prep:

03.07.19

7673224-1-BSD

Parameter

MB Result Amount

LCS LCS Result %Rec

LCS Sample Id:

7673224-1-BKS **LCSD**

LCSD Result %Rec

Limits

%RPD RPD Limit Units

Analysis Flag

Gasoline Range Hydrocarbons (GRO) Diesel Range Organics (DRO)

< 8.00 < 8.13

MB

93

94

1000 1000

Spike

978 98 1000 100 967 970

70-135 97 70-135

20 1

mg/kg

Date 03.07.19 21:15

Surrogate

1-Chlorooctane

o-Terphenyl

MB %Rec Flag

LCS LCS %Rec Flag

126

118

97 LCSD

LCSD

%Rec

125

120

Flag

3 20 Limits

70-135

70-135

mg/kg Units

%

%

03.07.19 21:15

MS = Matrix Spike

B = Spike Added

D = MSD/LCSD % Rec

Analysis Date

03.07.19 21:15 03.07.19 21:15

MS/MSD Percent Recovery

Relative Percent Difference

LCS/LCSD Recovery

Log Difference

[D] = 100*(C-A) / B

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

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result = MS/LCS Result

= MSD/LCSD Result Final 1.000



Seq Number:

QC Summary 616897

LT Environmental, Inc.

JRU 10

Analytical Method: TPH by SW8015 Mod

3081581 Matrix: Soil Prep Method: TX1005P

03.07.19

MS Sample Id: 616897-001 S Parent Sample Id: 616897-001

Date Prep: MSD Sample Id: 616897-001 SD

Prep Method:

Parameter	Result	Amount	Result	%Rec	MSD Result	MSD %Rec	Limits	%KPD	KPD Limi	t Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	< 7.99	999	941	94	944	95	70-135	0	20	mg/kg	03.07.19 22:15	
Diesel Range Organics (DRO)	9.72	999	956	95	949	94	70-135	1	20	mg/kg	03.07.19 22:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		120		70-135	%	03.07.19 22:15
o-Terphenyl	112		110		70-135	%	03.07.19 22:15

Analytical Method: BTEX by EPA 8021B

Seq Number: 3081570 Matrix: Solid

SW5030B

03.07.19

Flag

Flag

Date Prep: LCS Sample Id: 7673226-1-BKS LCSD Sample Id: 7673226-1-BSD MB Sample Id: 7673226-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00201	0.101	0.0907	90	0.0932	93	70-130	3	35	mg/kg	03.08.19 00:41
Toluene	< 0.000458	0.101	0.0817	81	0.0847	85	70-130	4	35	mg/kg	03.08.19 00:41
Ethylbenzene	< 0.000568	0.101	0.0795	79	0.0828	83	70-130	4	35	mg/kg	03.08.19 00:41
m,p-Xylenes	< 0.00102	0.201	0.161	80	0.167	84	70-130	4	35	mg/kg	03.08.19 00:41
o-Xylene	< 0.000346	0.101	0.0800	79	0.0834	83	70-130	4	35	mg/kg	03.08.19 00:41
Surrogate	MB	MB	L		LCS	LCSD	LCSI) I	Limits	Units	Analysis

Surrogate	%Rec	Flag	%Rec	Flag	%Rec	Flag		Date
1,4-Difluorobenzene	108		105		105	70-130	%	03.08.19 00:41
4-Bromofluorobenzene	100		96		98	70-130	%	03.08.19 00:41

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B Seq Number: 3081570 Matrix: Soil Date Prep: 03.07.19 MS Sample Id: 616897-001 S MSD Sample Id: 616897-001 SD Parent Sample Id: 616897-001

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.000383	0.0994	0.0984	99	0.0991	99	70-130	1	35	mg/kg	03.08.19 01:19
Toluene	< 0.00199	0.0994	0.0869	87	0.0884	89	70-130	2	35	mg/kg	03.08.19 01:19
Ethylbenzene	< 0.000561	0.0994	0.0817	82	0.0835	84	70-130	2	35	mg/kg	03.08.19 01:19
m,p-Xylenes	< 0.00101	0.199	0.164	82	0.168	84	70-130	2	35	mg/kg	03.08.19 01:19
o-Xylene	< 0.000342	0.0994	0.0811	82	0.0833	83	70-130	3	35	mg/kg	03.08.19 01:19

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		107		70-130	%	03.08.19 01:19
4-Bromofluorobenzene	100		101		70-130	%	03.08.19 01:19

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

[D] = 100*(C-A) / BRPD = 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 SpikeB = Spike Added D = MSD/LCSD % Rec Received by: (Signature)

w

14:00

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Revised Date 051418 Rev. 2018.1



432.704.5178 Midland, TX 79705

City, State ZIP:

Reporting:Level II __evel III

□ST/UST

구 무 Other:

| Vel ∨

Company Name: ddress:

Chain of Custody

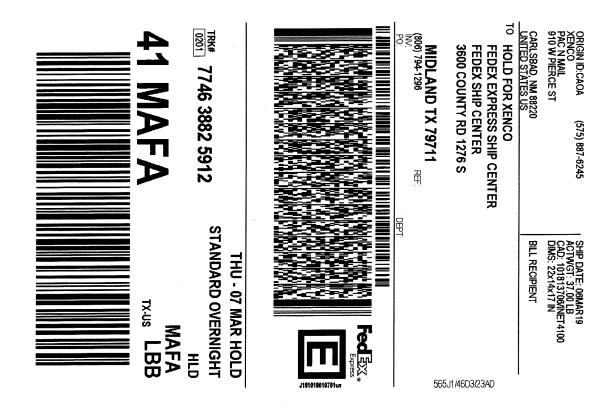
Work Order No: 101607

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334

State of Project:	Address:	3300 North A Street
Program: UST/PST PRP rownfields FC perfund	ce Company Name: 🗡 🕜	LT Environmental, Inc., Permian office
Work Order Comments	Bill to: (if different) By CC; ++Ce!	Adrian Baker
-620-2000) www.xenco.com Page / of /	Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-200	Hobbs,
-	Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296	

Phone: 432.704.5178 Email:	Email: baracalal	Ltenu.com/Abakeraltenu cara	1/Abak	e/1/2			Deliverables: EDD		ADaPT	Other:
Project Name: IRUIO 1	Turn Around			ANA	ANALYSIS REQUEST	JEST				Work Order Notes
Project Number: Routine	ine 🗆									
P.O. Number: $2RP_3/79$ Rust	Rush: 3/8/19									
Sampler's Name: Garett Green Due	Due Date: 3/8/4									
SAMPLE RECEIPT Temp Blank: Yes (No) Wet ice:	Yes No							- 'e		
The	<i>y</i> (ners						è		
Received Intact: Yes No			0.0)						<u> </u>	
Cooler Custody Seals: Yes No N/A Correction Factor:	100	15)	A 30							
Sample Custody Seals: Yes No N/A Total Containers:		PA 80	EP							lab, if received by 4:30pm
Sample identification Matrix Date Time Sampled Sampled	Depth	Numbe IPH (EI BTEX (I	hlorid							Sample Comments
0511 1019/8 5 10m5	1,-4,	ノメ	メ			-				
0011 101/2/K S 20ms	1,-4, 1	× ×	×				i e		#1.	
SW03 5 3/6/19/11/0	1,6-1	×	×							
SW04 5 3/6/19 1130	1,-4, 1	У У	X							
Sw05 > 3/6/19 1130	1,-4,	×								
		$\frac{1}{1}$		\ 						
1) 2 (11)	\setminus	2/17								
7 64 6								\Box		
. 00	13PPM Texas 11	Al Sb As Ba	ва Ве В	Cd Ca Cr (- 11	oM gM d⊂	Mo Ni K	Se Ag	SiO2 Na	Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SP	TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb	A Sb As Ba	a Be Cd	Cr Co Cu F	b Mn Mo	Mn Mo Ni Se Ag Tl U	TI U		163	631 / 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 negociated.	urchase order from cl esponsibility for any i i5 for each sample su	lient company to X losses or expenses bmitted to Xenco, I	enco, its affilis incurred by to but not analyz	ates and subcon he client if such ed. These terms	tractors. It assigns in the control of the control	tors. It assigns standard terms and condi- ses are due to circumstances beyond the c be enforced unless previously negotiated.	erms and conc as beyond the secondate	litions control d.		
Relinquished by: (Signature) Received by: (Signature)	ure)	Date/Time	е	Relinquished	ed by: (Signature)	ature)	M. Alece	eiyod by:	∕Receiγed by: (Signature)	e)Date/Time

Released to Imaging: 9/12/2024 2:10:57 PM



After printing this label:

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2. Fold the printed page along the horizontal line.

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XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 03/07/2019 11:36:00 AM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 616897

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		.2
#2 *Shipping container in good condition	1?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seals intact on shipping co	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle	es?	Yes
#6*Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?		Yes
#8 Any missing/extra samples?		No
#9 Chain of Custody signed when relinq	uished/ received?	Yes
#10 Chain of Custody agrees with samp	le labels/matrix?	Yes
#11 Container label(s) legible and intact	?	Yes
#12 Samples in proper container/ bottle	?	Yes
#13 Samples properly preserved?		Yes
#14 Sample container(s) intact?		Yes
#15 Sufficient sample amount for indicat	red test(s)?	Yes
#16 All samples received within hold tim	e?	Yes
#17 Subcontract of sample(s)?		N/A
#18 Water VOC samples have zero hea	dspace?	N/A
* Must be completed for after-hours de Analyst:	elivery of samples prior to placing in	n the refrigerator
Checklist completed by:	Brianna Teel	Date: <u>03/07/2019</u>
Checklist reviewed by:	Jessica Kramer	Date: <u>03/07/2019</u>

Analytical Report 617315

for

LT Environmental, Inc.

Project Manager: Adrian Baker
JRU-10

25-MAR-19

Collected By: Client





1211 W. Florida Ave Midland TX 79701

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

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

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

Xenco-Tampa: Florida (E87429), North Carolina (483) Xenco-Lakeland: Florida (E84098)





25-MAR-19

Project Manager: Adrian Baker LT Environmental, Inc. 4600 W. 60th Avenue Arvada, CO 80003

Reference: XENCO Report No(s): 617315

JRU-10

Project Address: ---

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 617315. 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. 617315 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Vramer

Project Assistant

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

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Sample Cross Reference 617315



LT Environmental, Inc., Arvada, CO

JRU-10

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	03-05-19 12:45	6 ft	617315-001
PH01A	S	03-07-19 10:40	25 ft	617315-002
PH02	S	03-07-19 12:05	20 ft	617315-003
PH02A	S	03-08-19 15:00	42 ft	617315-004

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: JRU-10

Project ID: --Work Order Number(s): 617315

Report Date: 25-MAR-19 Date Received: 03/12/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3081985 TPH by SW8015 Mod

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

by re-analysis.

Samples affected are: 617315-004,617315-003.

Batch: LBA-3082547 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 617315-002.

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

Batch: LBA-3082772 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 617315-004.

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



Certificate of Analysis Summary 617315

LT Environmental, Inc., Arvada, CO

Project Name: JRU-10

Page 11

Project Id: ---

Contact: Adrian Baker

Project Location: ---

Date Received in Lab: Tue Mar-12-19 12:05 pm

Report Date: 25-MAR-19

Project Manager: Kalei Stout

Lab Id:	617315-0	001	617315-0	002	617315-0	003	617315-0	004			
Field Id:	PH01		PH01A	\	PH02		PH02A	.			
Depth:	6- ft		25- ft		20- ft		42- ft				
Matrix:	SOIL		SOIL		SOIL		SOIL				
Sampled:	Mar-05-19	12:45	Mar-07-19	10:40	Mar-07-19	12:05	Mar-08-19	15:00			
Extracted:	Mar-18-19	16:00	Mar-18-19	16:00	Mar-18-19	16:00	Mar-20-19	13:30			
Analyzed:	Mar-19-19	18:06	Mar-19-19	15:15	Mar-19-19	17:28	Mar-21-19 (00:01			
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL			
	< 0.502	0.502	< 0.00200	0.00200	< 0.200	0.200	< 0.402	0.402			
	4.34	0.502	< 0.00200	0.00200	9.81	0.200	4.19	0.402			
	5.28	0.502	< 0.00200	0.00200	11.8	0.200	12.2	0.402			
	78.5	1.00	< 0.00400	0.00400	66.8	0.401	60.9	0.803			
	0.766	0.502	< 0.00200	0.00200	17.7	0.200	15.0	0.402			
	79.3	0.502	< 0.00200	0.00200	84.5	0.200	75.9	0.402			
	88.9	0.502	< 0.00200	0.00200	106	0.200	92.3	0.402			
Extracted:	Mar-13-19	08:30	Mar-13-19	08:30	Mar-13-19 (08:30	Mar-13-19 (08:30			
Analyzed:	Mar-13-19	17:28	Mar-13-19	17:34	Mar-13-19	17:41	Mar-13-19	17:47			
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL			
•	908	4.98	264	4.98	241	4.98	474	4.98			
Extracted:	Mar-12-19	14:00	Mar-12-19	14:00	Mar-12-19	14:00	Mar-12-19	14:00			
Analyzed:	Mar-13-19	01:32	Mar-13-19	02:33	Mar-13-19 (02:53	Mar-13-19 (03:13			
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL			
·	3110	15.0	<14.9	14.9	4140	14.9	3400	15.0			
	2090	15.0	35.0	14.9	3180	14.9	2720	15.0			
	17.9	15.0	<14.9	14.9	21.7	14.9	18.1	15.0			
	5220	15.0	35.0	14.9	7340	14.9	6140	15.0			
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Analyzed: Analyzed:	Field Id: PH01 Depth: 6- ft Matrix: SOIL Sampled: Mar-05-19 Extracted: Mar-18-19 Analyzed: Mar-19-19 Units/RL: mg/kg	Field Id: PH01 Depth: 6- ft Matrix: SOIL Sampled: Mar-05-19 12:45 Extracted: Mar-18-19 16:00 Analyzed: Mar-19-19 18:06 Units/RL: mg/kg RL <0.502	Field Id: PH01 PH01A Depth: 6- ft 25- ft Matrix: SOIL SOIL Sampled: Mar-05-19 12:45 Mar-07-19 Extracted: Mar-18-19 16:00 Mar-18-19 Analyzed: Mar-19-19 18:06 Mar-19-19 Units/RL: mg/kg RL mg/kg Units/RL: mg/kg RL mg/kg 4.34 0.502 <0.00200 5.28 0.502 <0.00200 78.5 1.00 <0.00400 0.766 0.502 <0.00200 88.9 0.502 <0.00200 Extracted: Mar-13-19 08:30 Mar-13-19 0 Analyzed: Mar-13-19 17:28 Mar-13-19 0 Units/RL: mg/kg RL mg/kg Extracted: Mar-12-19 14:00 Mar-12-19 Mar-13-19 01:32 Mar-13-19 01:32 <t< td=""><td>Field Id: PH01 PH01A Depth: 6- ft 25- ft Matrix: SOIL SOIL Sampled: Mar-05-19 12:45 Mar-07-19 10:40 Extracted: Mar-18-19 16:00 Mar-18-19 16:00 Analyzed: Mar-19-19 18:06 Mar-19-19 15:15 Units/RL: mg/kg RL mg/kg RL <0.502</td> 0.502 <0.00200</t<>	Field Id: PH01 PH01A Depth: 6- ft 25- ft Matrix: SOIL SOIL Sampled: Mar-05-19 12:45 Mar-07-19 10:40 Extracted: Mar-18-19 16:00 Mar-18-19 16:00 Analyzed: Mar-19-19 18:06 Mar-19-19 15:15 Units/RL: mg/kg RL mg/kg RL <0.502	Field Id: PH01 PH01A PH02 Depth: 6- ft 25- ft 20- ft Matrix: SOIL SOIL SOIL SOIL Sampled: Mar-05-19 12:45 Mar-07-19 10:40 Mar-07-19 Extracted: Mar-18-19 16:00 Mar-18-19 16:00 Mar-18-19 16:00 Mar-18-19 16:00 Mar-18-19 16:00 Mar-18-19 16:00 Mar-18-19 15:15 Mar-19-19 19:20 Mar-19-19 15:15 Mar-19-19 19:20 Mar-19-19 19:20 <0.00200 0.00200 <0.00200 0.00200 <0.00200 0.00200 <0.00200 0.00200 9.81 5.28	Field Id: PH01 PH01A PH02 Depth: 6- ft 25- ft 20- ft Matrix: SOIL SOIL SOIL Sampled: Mar-05-19 12:45 Mar-07-19 10:40 Mar-07-19 12:05 Extracted: Mar-18-19 16:00 Mar-18-19 16:00 Mar-18-19 16:00 Mar-18-19 16:00 Analyzed: Mar-19-19 18:06 Mar-19-19 15:15 Mar-19-19 17:28 Mar-19-19 17:28 Units/RL: mg/kg RL mg/kg RL mg/kg RL 4.34 0.502 <0.00200 0.00200 <0.200 0.200 5.28 0.502 <0.00200 0.00200 9.81 0.200 78.5 1.00 <0.00400 0.00200 11.8 0.200 79.3 0.502 <0.00200 0.00200 17.7 0.200 88.9 0.502 <0.00200 0.00200 17.7 0.200 Extracted: Mar-13-19 08:30 Mar-13-19 08:30 Mar-13-19 08:30 Mar-13-19 17:41 Units/RL: m	Field Id: PH01 PH01A PH02 PH02-ft Depth: 6- ft 25- ft 20- ft 42- ft Matrix: SOIL SOIL SOIL SOIL Sampled: Mar-05-19 12:45 Mar-07-19 10:40 Mar-07-19 12:05 Mar-08-19 Extracted: Mar-18-19 16:00 Mar-18-19 17:28 Mar-19-19 15:15 Mar-19-19 17:28 Mar-18-19 16:00 Mar-18-19 17:28 Mar-13-19 08:30 Mar-13-19 08:30 Mar-13-19 08:30 Mar-13-19 08:30 Mar-13-19 08:30	Field Id: PH01 PH01 PH01 PH02 PH0	Field Id: PH01 PH01 PH02 PH0	Field Id: PH01 PH01A PH02 PH02A 42- ft 42- ft <th< td=""></th<>

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

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

Jessica Vramer

Jessica Kramer Project Assistant





LT Environmental, Inc., Arvada, CO

JRU-10

Sample Id: **PH01** Matrix:

Soil

Date Received:03.12.19 12.05

Lab Sample Id: 617315-001

Date Collected: 03.05.19 12.45

Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

CHE

% Moisture:

Analyst:

CHE

Date Prep:

Basis: 03.13.19 08.30

Wet Weight

Seq Number: 3082023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	908	4.98	mg/kg	03.13.19 17.28		1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARMARM

03.12.19 14.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	3110	15.0		mg/kg	03.13.19 01.32		1
Diesel Range Organics (DRO)	C10C28DRO	2090	15.0		mg/kg	03.13.19 01.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	17.9	15.0		mg/kg	03.13.19 01.32		1
Total TPH	PHC635	5220	15.0		mg/kg	03.13.19 01.32		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	78	%	70-135	03.13.19 01.32		
o-Terphenyl		84-15-1	104	%	70-135	03.13.19 01.32		





LT Environmental, Inc., Arvada, CO

JRU-10

Soil

Sample Id: **PH01**

Matrix:

Date Received:03.12.19 12.05

Lab Sample Id: 617315-001

Date Collected: 03.05.19 12.45

Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech:

SCM

% Moisture:

SCM Analyst:

Date Prep:

03.18.19 16.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	RL		Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.502	0.502		mg/kg	03.19.19 18.06	U	250
Toluene	108-88-3	4.34	0.502		mg/kg	03.19.19 18.06		250
Ethylbenzene	100-41-4	5.28	0.502		mg/kg	03.19.19 18.06		250
m,p-Xylenes	179601-23-1	78.5	1.00		mg/kg	03.19.19 18.06		250
o-Xylene	95-47-6	0.766	0.502		mg/kg	03.19.19 18.06		250
Total Xylenes	1330-20-7	79.3	0.502		mg/kg	03.19.19 18.06		250
Total BTEX		88.9	0.502		mg/kg	03.19.19 18.06		250
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	107	%	70-130	03.19.19 18.06		
4-Bromofluorobenzene		460-00-4	135	%	70-130	03.19.19 18.06	**	





LT Environmental, Inc., Arvada, CO

JRU-10

Sample Id: PH01A Matrix: Soil Date Received:03.12.19 12.05

Lab Sample Id: 617315-002

Date Collected: 03.07.19 10.40

Sample Depth: 25 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Analysis Date

03.13.19 17.34

Tech:

CHE

% Moisture:

CHE Analyst:

Date Prep:

264

Result

03.13.19 08.30

Basis:

Units

mg/kg

70-135

Wet Weight

Seq Number: 3082023

Parameter Cas Number 16887-00-6 Chloride

4.98

RL

Dil

1

Flag

Analytical Method: TPH by SW8015 Mod

ARM

ARM Analyst:

o-Terphenyl

Seq Number: 3081985

Tech:

03.12.19 14.00 Date Prep:

% Moisture:

Basis: Wet Weight

Prep Method: TX1005P

03.13.19 02.33

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	03.13.19 02.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	35.0	14.9		mg/kg	03.13.19 02.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	03.13.19 02.33	U	1
Total TPH	PHC635	35.0	14.9		mg/kg	03.13.19 02.33		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	95	%	70-135	03.13.19 02.33		

84-15-1





LT Environmental, Inc., Arvada, CO

JRU-10

Sample Id: PH01A Matrix:

Soil

Date Received:03.12.19 12.05

Lab Sample Id: 617315-002

Date Collected: 03.07.19 10.40

Sample Depth: 25 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

% Moisture:

Tech:

Analyst:

SCMSCM

03.18.19 16.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.19.19 15.15	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.19.19 15.15	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.19.19 15.15	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	03.19.19 15.15	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.19.19 15.15	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	03.19.19 15.15	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.19.19 15.15	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	109	%	70-130	03.19.19 15.15		
4-Bromofluorobenzene		460-00-4	134	%	70-130	03.19.19 15.15	**	





LT Environmental, Inc., Arvada, CO

JRU-10

03.13.19 08.30

Sample Id: PH02

Matrix: Soil

Date Received:03.12.19 12.05

Lab Sample Id: 617315-003

Date Collected: 03.07.19 12.05

Sample Depth: 20 ft

Analytical Method: Inorganic Anions by EPA 300

CHE

Prep Method: E300P

Basis:

Tech: CHE

Date Prep:

% Moisture:

Wet Weight

Seq Number: 3082023

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 241
 4.98
 mg/kg
 03.13.19 17.41
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst:

Analyst:

ARM ARM

Date Prep: 03.12.19 14.00

Basis: W

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	4140	14.9		mg/kg	03.13.19 02.53		1
Diesel Range Organics (DRO)	C10C28DRO	3180	14.9		mg/kg	03.13.19 02.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	21.7	14.9		mg/kg	03.13.19 02.53		1
Total TPH	PHC635	7340	14.9		mg/kg	03.13.19 02.53		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	158	%	70-135	03.13.19 02.53	**	
o-Terphenyl		84-15-1	107	%	70-135	03.13.19 02.53		





LT Environmental, Inc., Arvada, CO

JRU-10

Sample Id: PH02

Matrix: Soil

Date Prep:

Date Received:03.12.19 12.05

Lab Sample Id: 617315-003

Date Collected: 03.07.19 12.05

Sample Depth: 20 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B % Moisture:

Tech: SC

Analyst:

SCM SCM

03.18.19 16.00 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.200	0.200		mg/kg	03.19.19 17.28	U	100
Toluene	108-88-3	9.81	0.200		mg/kg	03.19.19 17.28		100
Ethylbenzene	100-41-4	11.8	0.200		mg/kg	03.19.19 17.28		100
m,p-Xylenes	179601-23-1	66.8	0.401		mg/kg	03.19.19 17.28		100
o-Xylene	95-47-6	17.7	0.200		mg/kg	03.19.19 17.28		100
Total Xylenes	1330-20-7	84.5	0.200		mg/kg	03.19.19 17.28		100
Total BTEX		106	0.200		mg/kg	03.19.19 17.28		100
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	260	%	70-130	03.19.19 17.28	**	
1,4-Difluorobenzene		540-36-3	114	%	70-130	03.19.19 17.28		





LT Environmental, Inc., Arvada, CO

JRU-10

Soil

Sample Id: PH02A

Matrix:

Date Collected: 03.08.19 15.00

Date Received:03.12.19 12.05

Lab Sample Id: 617315-004

Sample Depth: 42 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE

Date Prep: 03.13.19 08.30 Basis:

Wet Weight

Seq Number: 3082023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	474	4.98	mg/kg	03.13.19 17.47		1

Analytical Method: TPH by SW8015 Mod

ARM

ARM Analyst:

o-Terphenyl

Seq Number: 3081985

Tech:

03.12.19 14.00 Date Prep:

105

% Moisture:

70-135

Basis:

03.13.19 03.13

Prep Method: TX1005P

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	3400	15.0		mg/kg	03.13.19 03.13		1
Diesel Range Organics (DRO)	C10C28DRO	2720	15.0		mg/kg	03.13.19 03.13		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	18.1	15.0		mg/kg	03.13.19 03.13		1
Total TPH	PHC635	6140	15.0		mg/kg	03.13.19 03.13		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	223	%	70-135	03.13.19 03.13	**	

84-15-1





LT Environmental, Inc., Arvada, CO

JRU-10

Soil

Sample Id: PH02A

Matrix:

Date Received:03.12.19 12.05

Lab Sample Id: 617315-004

Date Collected: 03.08.19 15.00

Sample Depth: 42 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech:

SCM

% Moisture:

Analyst: SCM

Date Prep:

03.20.19 13.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	RL		Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.402	0.402		mg/kg	03.21.19 00.01	U	200
Toluene	108-88-3	4.19	0.402		mg/kg	03.21.19 00.01		200
Ethylbenzene	100-41-4	12.2	0.402		mg/kg	03.21.19 00.01		200
m,p-Xylenes	179601-23-1	60.9	0.803		mg/kg	03.21.19 00.01		200
o-Xylene	95-47-6	15.0	0.402		mg/kg	03.21.19 00.01		200
Total Xylenes	1330-20-7	75.9	0.402		mg/kg	03.21.19 00.01		200
Total BTEX		92.3	0.402		mg/kg	03.21.19 00.01		200
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	161	%	70-130	03.21.19 00.01	**	
1,4-Difluorobenzene		540-36-3	105	%	70-130	03.21.19 00.01		



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.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

^{**} Surrogate recovered outside laboratory control limit.



QC Summary 617315

LT Environmental, Inc.

JRU-10

Analytical Method: Inorganic Anions by EPA 300

3082023

7673457-1-BLK

Matrix: Solid

Prep Method: Date Prep: E300P

Seq Number:

5

03.13.19

MB Sample Id: MR LCS LCS

LCS Sample Id: 7673457-1-BKS LCSD Sample Id: 7673457-1-BSD

Analysis Flag

Parameter

Spike Result Amount

Result %Rec LCSD LCSD %Rec Result

Limits

%RPD RPD Limit Units 20

Date 03.13.19 14:57

Chloride

1.10 250

270 108 257

103 90-110

mg/kg

Analytical Method: Inorganic Anions by EPA 300

3082023

Matrix: Soil

Prep Method: Date Prep:

E300P

Seq Number: Parent Sample Id:

617103-014

MS Sample Id: 617103-014 S MSD Sample Id: 617103-014 SD

03.13.19

Analysis

Parameter

Parent

MS Result MS

MSD %Rec

Limits

%RPD RPD Limit Units

Chloride

Result Amount 4.33 252

Result

Result

104

105

16.0

%Rec 272 106

Result 271

MSD

106 90-110

0 20 mg/kg

Date 03.13.19 16:48 Flag

Analytical Method: Inorganic Anions by EPA 300

Prep Method:

E300P

Seq Number: Parent Sample Id: 3082023

Matrix: Soil

250

Spike

Date Prep:

03.13.19

617402-001

MS Sample Id: 617402-001 S

Limits

MSD Sample Id: 617402-001 SD

Parameter

Seq Number:

1-Chlorooctane

o-Terphenyl

Chloride

Parent

MS Spike Result Amount

274

MS %Rec 103

MSD MSD Result %Rec 281

90-110 106

3 20

%RPD RPD Limit Units

Analysis Flag Date 03.13.19 15:17

Analytical Method: TPH by SW8015 Mod

3081985

Matrix: Solid

TX1005P

Prep Method:

mg/kg

7673483-1-BKS LCS Sample Id: MB Sample Id: 7673483-1-BLK %RPD RPD Limit Units MB Spike LCS LCS LCSD Limits **LCSD Parameter**

Date Prep: LCSD Sample Id:

20

03.12.19

7673483-1-BSD

Analysis

Date

03.12.19 21:12 03.12.19 21:12

MS = Matrix Spike

B = Spike Added

D = MSD/LCSD % Rec

Gasoline Range Hydrocarbons (GRO)

< 8.00

1000 1000

Amount

Result %Rec 1080 108

123

111

Result %Rec 1020

70-135 102

119

106

70-135

70-135

6

mg/kg

mg/kg

Units

%

%

Analysis Flag Date

70-135 5 20 Diesel Range Organics (DRO) 1090 109 1040 104 < 8.13 LCS LCSD MB MB LCS LCSD Limits **Surrogate** %Rec Flag %Rec Flag Flag %Rec

03.12.19 21:12 03.12.19 21:12

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

Log Difference

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

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

= MS/LCS Result = MSD/LCSD Result

Final 1.000

Page 15 of 20



Seq Number:

Parent Sample Id:

MB Sample Id:

QC Summary 617315

LT Environmental, Inc.

JRU-10

Analytical Method: TPH by SW8015 Mod

617310-001

3081985 Matrix: Soil

MS Sample Id: 617310-001 S

Prep Method: TX1005P

Date Prep: 03.12.19

MSD Sample Id: 617310-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD 1	RPD Limi	t Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	< 7.99	999	1040	104	1030	103	70-135	1	20	mg/kg	03.12.19 22:12	
Diesel Range Organics (DRO)	<8.12	999	1070	107	1070	107	70-135	0	20	mg/kg	03.12.19 22:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	125		124		70-135	%	03.12.19 22:12
o-Terphenyl	100		95		70-135	%	03.12.19 22:12

Analytical Method: BTEX by EPA 8021B

7673824-1-BLK

Seq Number: 3082547 Matrix: Solid LCS Sample Id: 7673824-1-BKS Prep Method: Date Prep: 03.18.19

LCSD Sample Id: 7673824-1-BSD

SW5030B

Flag

Flag

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date
Benzene	< 0.000386	0.100	0.107	107	0.103	104	70-130	4	35	mg/kg	03.19.19 06:12
Toluene	< 0.000457	0.100	0.113	113	0.110	111	70-130	3	35	mg/kg	03.19.19 06:12
Ethylbenzene	< 0.000567	0.100	0.104	104	0.101	102	70-130	3	35	mg/kg	03.19.19 06:12
m,p-Xylenes	< 0.00102	0.201	0.200	100	0.194	97	70-130	3	35	mg/kg	03.19.19 06:12
o-Xylene	< 0.000346	0.100	0.102	102	0.100	101	70-130	2	35	mg/kg	03.19.19 06:12
Surrogata	MB	MB	L	CS 1	LCS	LCSI	LCS	D L	imits	Units	Analysis

Surrogate	%Rec	Flag	%Rec	Flag	%Rec	Flag	Limits	Cints	Date
1,4-Difluorobenzene	106		100		102		70-130	%	03.19.19 06:12
4-Bromofluorobenzene	108		104		106		70-130	%	03.19.19 06:12

Analytical Method: BTEX by EPA 8021B

SW5030B Prep Method: Seq Number: 3082772 Matrix: Solid Date Prep: 03.20.19 LCS Sample Id: 7673968-1-BKS LCSD Sample Id: 7673968-1-BSD MB Sample Id: 7673968-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.113	113	0.117	117	70-130	3	35	mg/kg	03.20.19 14:50
Toluene	< 0.00200	0.100	0.114	114	0.118	118	70-130	3	35	mg/kg	03.20.19 14:50
Ethylbenzene	< 0.000565	0.100	0.101	101	0.103	103	70-130	2	35	mg/kg	03.20.19 14:50
m,p-Xylenes	< 0.00101	0.200	0.198	99	0.203	101	70-130	2	35	mg/kg	03.20.19 14:50
o-Xylene	< 0.00200	0.100	0.0992	99	0.102	102	70-130	3	35	mg/kg	03.20.19 14:50

Surrogate	%Rec	Flag	%Rec	Flag	%Rec	Flag	Limits	Cints	Date
1,4-Difluorobenzene	117		108		109		70-130	%	03.20.19 14:50
4-Bromofluorobenzene	114		105		108		70-130	%	03.20.19 14:50

TCS

TCC

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

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

MR

MR

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result

C = MS/LCS Result E = MSD/LCSD Result

LCSD

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

Analysis

I imite

Unite

Flag



Seq Number:

QC Summary 617315

LT Environmental, Inc.

JRU-10

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B 3082547 Matrix: Soil Date Prep: 03.18.19

MS Sample Id: 617912-001 S MSD Sample Id: 617912-001 SD Parent Sample Id: 617912-001

r arem sampre rai	01/912 001			1								
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.000383	0.0996	0.0641	64	0.0686	68	70-130	7	35	mg/kg	03.19.19 06:50	X
Toluene	< 0.000454	0.0996	0.0751	75	0.0785	78	70-130	4	35	mg/kg	03.19.19 06:50	
Ethylbenzene	< 0.000563	0.0996	0.0920	92	0.0942	93	70-130	2	35	mg/kg	03.19.19 06:50	
m,p-Xylenes	< 0.00101	0.199	0.179	90	0.182	90	70-130	2	35	mg/kg	03.19.19 06:50	
o-Xylene	< 0.000343	0.0996	0.0886	89	0.0898	89	70-130	1	35	mg/kg	03.19.19 06:50	
Surrogate				IS Rec	MS Flag	MSD %Red			Limits	Units	Analysis Date	
1,4-Difluorobenzene			1	01		102		7	0-130	%	03.19.19 06:50	
4-Bromofluorobenzene			1	10		111		7	0-130	%	03.19.19 06:50	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B Seq Number: 3082772 Matrix: Soil Date Prep: 03.20.19 MS Sample Id: 618088-010 S MSD Sample Id: 618088-010 SD Parent Sample Id: 618088-010

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	nit Units	Analysis Date	I
Benzene	< 0.00199	0.0994	0.104	105	0.107	107	70-130	3	35	mg/kg	03.20.19 15:32	
Toluene	0.000601	0.0994	0.107	107	0.109	108	70-130	2	35	mg/kg	03.20.19 15:32	
Ethylbenzene	< 0.000561	0.0994	0.0960	97	0.0944	94	70-130	2	35	mg/kg	03.20.19 15:32	
m,p-Xylenes	< 0.00101	0.199	0.189	95	0.186	93	70-130	2	35	mg/kg	03.20.19 15:32	
o-Xylene	0.000391	0.0994	0.0955	96	0.0931	93	70-130	3	35	mg/kg	03.20.19 15:32	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		110		70-130	%	03.20.19 15:32
4-Bromofluorobenzene	113		111		70-130	%	03.20.19 15:32

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

[D] = 100*(C-A) / BRPD = 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

Phone: 43	City, State ZIP: Mi	Address: 33	Company Name: LT	Project Manager: Ac	- Chamman		X	
432 704 5178	Midland, TX 79705	3300 North A Street	LT Environmental, Inc., Permian office	Adrian Baker	Hobbs,NM (
T	City, State ZIP:	Address:	Company Name:	Bill to: (if different)	575-392-7550) Phoenix,AZ (480	Midland, TX (432-704-5440) EL	louston,TX (281) 240-4200 Dal	,
	Carlsbad NM	Ŋ	XTO-Enersy	Ryle Cittel	Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)	Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296	Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334	
Deliverables: EDD \\ \D\D\DT \\ \D\D\DT \\ \D\\D\D\D\\D\\D\\D\\D\\D\\D\\D\\D\\D	Reporting:Level III	State of Project:	Program: UST/PST □\RP □rownfields f□C {□perfund	Work Order Comments	313-620-2000) <u>www.xenco.com</u> Page	-	34	THOIR Older INC.
	Jvel IV □		perfund		of	-	,	1

³ hone: 432.704.5178	Email:			Deliverables: EDD ADaPT	Other:
oroject Name: JRU - io	Turn Around		ANALYSIS REQUEST	18	Work Order Notes
Project Number:	Routine 🗹				
2.0. Number: 2RP _3464 2RP-	2RP-3179 Rush:				
Sampler's Name: Garrette G Robert	→ M. Due Date:				
SAMPLE RECEIPT Temp Blank: Yes,	Wet Ice: (Yes) No				
Temperature (°C): $()$ 30- $($	Thermometer/ID	ners			
Received Intact: Yes) No	(8)		00.0)		
Cooler Custody Seals: Yes Op N/A	Correction Factor: 401	115)	A 30		
NIA	Total Containers:	PA 80	≱ (EP		lab, if received by 4:30pm
Sample Identification Matrix Date	ate Time Depth	PH (EI	hlorid		Sample Comments
PHO1 S 03/05/19	5/19 1245 E	×	\dashv		discrete
PHO1A 1 03/07/19	07/19 1040 25	/ ×	×		
PH02 03/07/19	07/19 1205 20'	×	×		
PHO2A 03/08/19	68/19 1500 42'	× ×	X		4
		V			
		1 All All			
			7		***************************************
Total 200.7 / 6010 200.8 / 6020:	~	13PPM Texas 11 Al Sb As Ba	3a Be B Cd Ca Cr Co Cu Fe Pb	Ph Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn	TI Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	d CLP / SPLP 6010: 8F	CRA Sb As Ba	ICLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag		1631 / 245.1 / 7470 / 7471 : Hg
lotice: 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 if 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.	es constitutes a valid purchase order fro shall not assume any responsibility for roject and a charge of \$5 for each sampl	om client company to X any losses or expenses e submitted to Xenco, I	enco, its affiliates and subcontractors. It assigns: incurred by the client if such losses are due to ciu ut not analyzed. These terms will be enforced unlu	standard terms and conditions rcumstances beyond the control ess previously negotiated.	
Relinquished by: (Signature) Rece	Received by: (Signature)	Date/Time	e Refinquished by: (Signature)	re) Receiyed by: (Signature)	_ე ∫ Date/Time
Rulest Miller Wille	KJay	Philladla	Well my View		212119
			6		- IAVO
					Revised Date 051418 Rev. 2018.1



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XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 03/12/2019 12:05:00 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Work Order #: 617315

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		.2
#2 *Shipping container in good condition	?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seals intact on shipping cor	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle		N/A
#6*Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?		Yes
#8 Any missing/extra samples?		No
#9 Chain of Custody signed when relinge	uished/ received?	Yes
#10 Chain of Custody agrees with sample		Yes
#11 Container label(s) legible and intact		Yes
#12 Samples in proper container/ bottle?		Yes
#13 Samples properly preserved?		Yes
#14 Sample container(s) intact?		Yes
#15 Sufficient sample amount for indicat	ed test(s)?	Yes
#16 All samples received within hold time	e?	Yes
#17 Subcontract of sample(s)?		N/A
#18 Water VOC samples have zero head	dspace?	N/A
* Must be completed for after-hours de Analyst:	livery of samples prior to placing ir PH Device/Lot#:	n the refrigerator
Checklist completed by: Checklist reviewed by:	Brianna Teel Jessica Warmer Jessica Kramer	Date: 03/12/2019 Date: 03/12/2019

Analytical Report 620474

for

LT Environmental, Inc.

Project Manager: Adrian Baker JRU 10 TB 2RP-3179,2RP-3464, 2RP-5243 10-APR-19

Collected By: Client





1211 W. Florida Ave Midland TX 79701

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

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

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

Xenco-Lakeland: Florida (E84098)





10-APR-19

Project Manager: Adrian Baker LT Environmental, Inc. 4600 W. 60th Avenue Arvada, CO 80003

Reference: XENCO Report No(s): 620474

JRU 10 TB

Project Address: Delaware Basin

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620474. 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. 620474 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kalei Stout

Midland Laboratory Director

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



Sample Cross Reference 620474



LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH01F	S	04-03-19 10:10	35 ft	620474-001
BH010	S	04-04-19 11:00	80 ft	620474-002
BH02B	S	04-04-19 14:30	15 ft	620474-003
BH020	S	04-05-19 08:30	80 ft	620474-004
BH03	S	04-05-19 09:00	5 ft	620474-005
ВН03А	S	04-05-19 09:10	10 ft	620474-006
BH04D	S	04-05-19 10:15	25 ft	620474-007
BH04I	S	04-05-19 11:45	50 ft	620474-008
BH04C	S	04-05-19 12:45	20 ft	620474-009
BH05E	S	04-05-19 13:00	30 ft	620474-010
BH06	S	04-05-19 13:15	5 ft	620474-011
BH06E	S	04-05-19 13:55	30 ft	620474-012

CASE NARRATIVE

10-APR-19

Report Date:

Client Name: LT Environmental, Inc.

Project Name: JRU 10 TB

Project ID: 2RP-3179,2RP-3464, 2RF

Work Order Number(s): 620474 Date Received: 04/09/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3085165 Inorganic Anions by EPA 300

Lab Sample ID 620474-011 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: 620474-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012.

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

Batch: LBA-3085184 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030. Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 620474-001,620474-005,620474-004,620474-003.



Certificate of Analysis Summary 620474

LT Environmental, Inc., Arvada, CO

Project Name: JRU 10 TB

Page Page

Project Id:

2RP-3179,2RP-3464, 2RP-5243

Contact:
Project Location:

Adrian Baker Delaware Basin **Date Received in Lab:** Tue Apr-09-19 12:09 pm

Report Date: 10-APR-19

Project Manager: Kalei Stout

	Lab Id:	620474-0	001	620474-	002	620474-0	003	620474-	004	620474-	005	620474-	006
A sa mlusia Do mu anta d	Field Id:	BH01F	7	BH01	С	BH021	3	BH02	0	BH03		BH03.	A
Analysis Requested	Depth:	35- ft		80- ft		15- ft		80- ft		5- ft		10- ft	t
	Matrix:	SOIL		SOIL	,	SOIL	,	SOIL		SOIL	.	SOIL	_
	Sampled:	Apr-03-19	10:10	Apr-04-19	11:00	Apr-04-19	14:30	Apr-05-19	08:30	Apr-05-19	09:00	Apr-05-19	09:10
BTEX by EPA 8021B	Extracted:	Apr-09-19	13:30	Apr-09-19	13:30	Apr-09-19 13:30		Apr-09-19 13:30		Apr-09-19 13:30		Apr-09-19	13:30
	Analyzed:	Apr-10-19	10:21	Apr-10-19	10:02	Apr-10-19	11:35	Apr-10-19	11:54	Apr-10-19	12:13	Apr-10-19	12:32
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.499	0.499	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200
Toluene		9.90	0.499	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200
Ethylbenzene		11.6	0.499	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200
m,p-Xylenes		56.5	0.998	< 0.00399	0.00399	< 0.00400	0.00400	< 0.00400	0.00400	< 0.00402	0.00402	< 0.00401	0.00401
o-Xylene		15.1	0.499	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200
Total Xylenes		71.6	0.499	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200
Total BTEX		93.1	0.499	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200
Inorganic Anions by EPA 300	Extracted:	Apr-10-19 (09:15	Apr-10-19 09:15		Apr-10-19 09:15		Apr-10-19 09:15		Apr-10-19 09:15		Apr-10-19	09:15
SUB: T104704219-19-19	Analyzed:	Apr-10-19	10:23	Apr-10-19	10:50	Apr-10-19 10:57		Apr-10-19 11:04		Apr-10-19 11:11		Apr-10-19 11:18	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2090 D	125	<25.0	25.0	69.9	25.0	<25.0	25.0	1000	125	833	250
TPH by SW8015 Mod	Extracted:	Apr-09-19	17:00	Apr-09-19	17:00	Apr-09-19 17:00		Apr-09-19 17:00		Apr-09-19 17:00		Apr-09-19 17	
	Analyzed:	Apr-10-19 (05:57	Apr-10-19	00:35	Apr-10-19	01:31	Apr-10-19 01:50		Apr-10-19	02:09	Apr-10-19	02:28
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		6030	74.7	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0
Diesel Range Organics (DRO)		3500	74.7	<15.0	15.0	<15.0	15.0	50.9	15.0	<14.9	14.9	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<74.7	74.7	<15.0	15.0	<15.0	15.0	16.8	15.0	<14.9	14.9	<15.0	15.0
Total TPH		9530	74.7	<15.0	15.0	<15.0	15.0	67.7	15.0	<14.9	14.9	<15.0	15.0
Total GRO-DRO		9530	74.7	<15.0	15.0	<15.0	15.0	50.9	15.0	<14.9	14.9	<15.0	15.0

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

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

Laen Stort

Kalei Stout Midland Laboratory Director



Certificate of Analysis Summary 620474

LT Environmental, Inc., Arvada, CO

Project Name: JRU 10 TB

SAGRATOR

Project Id:

Project Location:

2RP-3179,2RP-3464, 2RP-5243

Delaware Basin

Contact: Adrian Baker

Date Received in Lab: Tue Apr-09-19 12:09 pm

Report Date: 10-APR-19

Project Manager: Kalei Stout

	Lab Id:	620474-0	620474-007		008	620474-0	009	620474-	010	620474-0	011	620474-0	012
Arrabasia Dogradad	Field Id:	BH04I	D	BH04	I	BH040	2	BH05	Ε	BH06	;	BH061	Ε
Analysis Requested	Depth:	25- ft		50- ft		20- ft		30- ft		5- ft		30- ft	
	Matrix:	SOIL	,	SOIL	,	SOIL		SOIL	,	SOIL	,	SOIL	
	Sampled:	Apr-05-19	10:15	Apr-05-19	11:45	Apr-05-19	12:45	Apr-05-19	13:00	Apr-05-19	13:15	Apr-05-19	13:55
BTEX by EPA 8021B	Extracted:	Apr-09-19	13:30	Apr-09-19	13:30	Apr-09-19	13:30	Apr-09-19	13:30	Apr-09-19	13:30	Apr-09-19	13:30
	Analyzed:	Apr-10-19	12:51	Apr-10-19	13:10	Apr-10-19	13:29	Apr-10-19	13:49	Apr-10-19	14:08	Apr-10-19	14:27
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene	·	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Toluene		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Ethylbenzene		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
m,p-Xylenes		< 0.00402	0.00402	< 0.00398	0.00398	< 0.00398	0.00398	< 0.00398	0.00398	< 0.00400	0.00400	< 0.00399	0.00399
o-Xylene		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Total Xylenes		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Total BTEX		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Inorganic Anions by EPA 300	Extracted:	Apr-10-19	09:15	Apr-10-19	09:15	Apr-10-19	09:15	Apr-10-19	09:15	Apr-10-19	09:15	Apr-10-19	09:15
SUB: T104704219-19-19	Analyzed:	Apr-10-19	11:25	Apr-10-19	11:32	Apr-10-19	11:39	Apr-10-19	11:53	Apr-10-19	12:00	Apr-10-19	12:27
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		90.6	50.0	93.8	25.0	240	25.0	81.2	25.0	385	25.0	101	25.0
TPH by SW8015 Mod	Extracted:	Apr-09-19	17:00	Apr-09-19	17:00	Apr-09-19 17:00		Apr-09-19 17:00		Apr-09-19 17:00		0 Apr-09-19 1	
	Analyzed:	Apr-10-19	02:46	Apr-10-19	03:05	Apr-10-19	03:24	Apr-10-19 03:43		Apr-10-19	04:02	Apr-10-19	04:21
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	26.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	26.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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

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

<15.0

15.0

Laen Stort

<15.0

15.0

<15.0

15.0

26.0

15.0

<15.0

15.0

<15.0

15.0

Total GRO-DRO





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: **BH01F**Lab Sample Id: 620474-001

Matrix:

Date Received:04.09.19 12.09

Matrix: Soil
Date Collected: 04.03.19 10.10

Sample Depth: 35 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P % Moisture:

Tech: RNL

Analyst:

RNL

Date Prep: 04.10.19 09.15

Basis:

Wet Weight

Seq Number: 3085165

.13

SUB: T104704219-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2090	125	mg/kg	04.10.19 10.30	D	

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep:

04.09.19 17.00

Basis: We

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	6030	74.7		mg/kg	04.10.19 05.57		5
Diesel Range Organics (DRO)	C10C28DRO	3500	74.7		mg/kg	04.10.19 05.57		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<74.7	74.7		mg/kg	04.10.19 05.57	U	5
Total TPH	PHC635	9530	74.7		mg/kg	04.10.19 05.57		5
Total GRO-DRO	PHC628	9530	74.7		mg/kg	04.10.19 05.57		5
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	115	%	70-135	04.10.19 05.57		
o-Terphenyl		84-15-1	103	%	70-135	04.10.19 05.57		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH01F

Matrix: Soil

Date Prep:

Date Received:04.09.19 12.09

Lab Sample Id: 620474-001

Date Collected: 04.03.19 10.10

Sample Depth: 35 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech:

Analyst:

SCM SCM % Moisture:

04.09.19 13.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.499	0.499		mg/kg	04.10.19 10.21	U	250
Toluene	108-88-3	9.90	0.499		mg/kg	04.10.19 10.21		250
Ethylbenzene	100-41-4	11.6	0.499		mg/kg	04.10.19 10.21		250
m,p-Xylenes	179601-23-1	56.5	0.998		mg/kg	04.10.19 10.21		250
o-Xylene	95-47-6	15.1	0.499		mg/kg	04.10.19 10.21		250
Total Xylenes	1330-20-7	71.6	0.499		mg/kg	04.10.19 10.21		250
Total BTEX		93.1	0.499		mg/kg	04.10.19 10.21		250
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	109	%	70-130	04.10.19 10.21		
4-Bromofluorobenzene		460-00-4	138	%	70-130	04.10.19 10.21	**	





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH010

Matrix:

Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-002

Date Collected: 04.04.19 11.00

Sample Depth: 80 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: I

RNL RNL

-4- D---- 04 10 10

% Moisture: Basis:

Wet Weight

Seq Number: 3085165

Analyst:

Date Prep:

04.10.19 09.15

SUB: T104704219-19-19

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 <25.0 25.0 04.10.19 10.50 U mg/kg 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep:

04.09.19 17.00

Basis: We

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.10.19 00.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.10.19 00.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.10.19 00.35	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.10.19 00.35	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	04.10.19 00.35	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	94	%	70-135	04.10.19 00.35		
o-Terphenyl		84-15-1	95	%	70-135	04.10.19 00.35		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

04.09.19 13.30

Sample Id: BH010

Matrix: Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-002

Date Collected: 04.04.19 11.00

Sample Depth: 80 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

Analyst:

SCM Date Prep:

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	04.10.19 10.02	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	04.10.19 10.02	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	04.10.19 10.02	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	04.10.19 10.02	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	04.10.19 10.02	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	04.10.19 10.02	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	04.10.19 10.02	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	118	%	70-130	04.10.19 10.02		
1,4-Difluorobenzene		540-36-3	103	%	70-130	04.10.19 10.02		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH02B Lab Sample Id: 620474-003

Soil

Date Received:04.09.19 12.09

Date Collected: 04.04.19 14.30

Sample Depth: 15 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: RNL

Analyst:

RNL

Date Prep:

Matrix:

% Moisture: Basis:

Wet Weight

Seq Number: 3085165

04.10.19 09.15

SUB: T104704219-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	69.9	25.0	mg/kg	04.10.19 10.57		1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:

ARM

ARM Analyst: Seq Number: 3085150

04.09.19 17.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.10.19 01.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.10.19 01.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.10.19 01.31	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.10.19 01.31	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	04.10.19 01.31	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1 (1-1		111 05 2	0.4	0/	70 125	04 10 10 01 21		

1-Chlorooctane 111-85-3 04.10.19 01.31 70-135 o-Terphenyl 84-15-1 93 70-135 04.10.19 01.31





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH02B

Matrix:

Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-003

Date Collected: 04.04.19 14.30

Sample Depth: 15 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

% Moisture:

Tech:

Analyst:

SCM SCM

Date Prep: 04.09.19 13.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	04.10.19 11.35	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	04.10.19 11.35	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	04.10.19 11.35	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	04.10.19 11.35	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	04.10.19 11.35	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	04.10.19 11.35	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	04.10.19 11.35	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	135	%	70-130	04.10.19 11.35	**	
1,4-Difluorobenzene		540-36-3	99	%	70-130	04.10.19 11.35		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH020

Matrix:

Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-004

Date Collected: 04.05.19 08.30

Sample Depth: 80 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

% Moisture:

Tech: Analyst: RNL RNL

nte Prep: 04.10.19 09.15

Basis:

Wet Weight

Seq Number: 3085165

Date Prep:

04.10.19 09.13

SUB: T104704219-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	04.10.19 11.04	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 04.09.19 17.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.10.19 01.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	50.9	15.0		mg/kg	04.10.19 01.50		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	16.8	15.0		mg/kg	04.10.19 01.50		1
Total TPH	PHC635	67.7	15.0		mg/kg	04.10.19 01.50		1
Total GRO-DRO	PHC628	50.9	15.0		mg/kg	04.10.19 01.50		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	92	%	70-135	04.10.19 01.50		
o-Terphenyl		84-15-1	86	%	70-135	04.10.19 01.50		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH020

Matrix:

Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-004

Date Collected: 04.05.19 08.30

Sample Depth: 80 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: Analyst: SCM SCM

Date Prep: 04.09.19 13.30

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	04.10.19 11.54	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	04.10.19 11.54	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	04.10.19 11.54	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	04.10.19 11.54	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	04.10.19 11.54	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	04.10.19 11.54	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	04.10.19 11.54	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	105	%	70-130	04.10.19 11.54		
4-Bromofluorobenzene		460-00-4	152	%	70-130	04.10.19 11.54	**	





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH03

Matrix:

Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-005

Date Collected: 04.05.19 09.00

Sample Depth: 5 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: RNL RNL

Date Prep: 04.10.19 09.15

Basis:

Wet Weight

Seq Number: 3085165

SUB: T104704219-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1000	125	mg/kg	04.10.19 11.11		

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:
Analyst:

ARM ARM

Date Prep: 04.09.19 17.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	04.10.19 02.09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9		mg/kg	04.10.19 02.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	04.10.19 02.09	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	04.10.19 02.09	U	1
Total GRO-DRO	PHC628	<14.9	14.9		mg/kg	04.10.19 02.09	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	95	%	70-135	04.10.19 02.09		
o-Terphenyl		84-15-1	95	%	70-135	04.10.19 02.09		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH03

Matrix: Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-005

Date Collected: 04.05.19 09.00

Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: Analyst: SCM SCM

Date Prep: 04.09.19 13.30

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	04.10.19 12.13	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	04.10.19 12.13	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	04.10.19 12.13	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	04.10.19 12.13	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	04.10.19 12.13	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	04.10.19 12.13	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	04.10.19 12.13	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	137	%	70-130	04.10.19 12.13	**	
1,4-Difluorobenzene		540-36-3	101	%	70-130	04.10.19 12.13		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH03A Matrix: Soil Date Received:04.09.19 12.09

Lab Sample Id: 620474-006

Date Collected: 04.05.19 09.10

Sample Depth: 10 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

% Moisture:

Tech: RNL

Analyst:

RNL

04.10.19 09.15 Date Prep:

Basis:

Wet Weight

Seq Number: 3085165

SUB: T104704219-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	833	250	mg/kg	04.10.19 11.18		10

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARMARM

04.09.19 17.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.10.19 02.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.10.19 02.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.10.19 02.28	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.10.19 02.28	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	04.10.19 02.28	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	95	%	70-135	04.10.19 02.28		
o-Terphenyl		84-15-1	95	%	70-135	04.10.19 02.28		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH03A

Matrix:

Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-006

Date Collected: 04.05.19 09.10

Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

SCM SCM

Date Prep:

04.09.19 13.30

Basis:

% Moisture:

Wet Weight

Seq Number: 3085184

Tech:

Analyst:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	04.10.19 12.32	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	04.10.19 12.32	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	04.10.19 12.32	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	04.10.19 12.32	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	04.10.19 12.32	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	04.10.19 12.32	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	04.10.19 12.32	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	121	%	70-130	04.10.19 12.32		
1,4-Difluorobenzene		540-36-3	105	%	70-130	04.10.19 12.32		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH04D

Matrix: Soil Date Received:04.09.19 12.09

Lab Sample Id: 620474-007

Date Collected: 04.05.19 10.15

Sample Depth: 25 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P % Moisture:

Basis:

Tech:

RNL RNL

Date Prep:

Wet Weight

Analyst: Seq Number: 3085165

04.10.19 09.15

SUB: T104704219-19-19

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 04.10.19 11.25 2 90.6 50.0 mg/kg

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

ARM Analyst:

04.09.19 17.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.10.19 02.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.10.19 02.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.10.19 02.46	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.10.19 02.46	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	04.10.19 02.46	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	93	%	70-135	04.10.19 02.46		
o-Terphenyl		84-15-1	93	%	70-135	04.10.19 02.46		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH04D Matrix:

Date Received:04.09.19 12.09

Lab Sample Id: 620474-007

Soil Date Collected: 04.05.19 10.15

Sample Depth: 25 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: Analyst: SCMSCM

Date Prep: 04.09.19 13.30 % Moisture: Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	04.10.19 12.51	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	04.10.19 12.51	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	04.10.19 12.51	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	04.10.19 12.51	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	04.10.19 12.51	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	04.10.19 12.51	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	04.10.19 12.51	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	106	%	70-130	04.10.19 12.51		
4-Bromofluorobenzene		460-00-4	118	%	70-130	04.10.19 12.51		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Soil

Sample Id: BH04I Matrix:

Date Received:04.09.19 12.09

Lab Sample Id: 620474-008

Date Collected: 04.05.19 11.45

Sample Depth: 50 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech:

RNL

Date Prep:

% Moisture: Basis:

Wet Weight

Analyst: Seq Number: 3085165

RNL

04.10.19 09.15

SUB: T104704219-19-19

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 25.0 04.10.19 11.32 93.8 mg/kg 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

04.09.19 17.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.10.19 03.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	26.0	15.0		mg/kg	04.10.19 03.05		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.10.19 03.05	U	1
Total TPH	PHC635	26.0	15.0		mg/kg	04.10.19 03.05		1
Total GRO-DRO	PHC628	26.0	15.0		mg/kg	04.10.19 03.05		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	94	%	70-135	04.10.19 03.05		
o-Terphenyl		84-15-1	90	%	70-135	04.10.19 03.05		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH04I Lab Sample Id: 620474-008

Soil

Matrix:

Date Received:04.09.19 12.09

Date Collected: 04.05.19 11.45

Sample Depth: 50 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

% Moisture:

Tech: SCM

SCM Analyst:

Date Prep:

04.09.19 13.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	04.10.19 13.10	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	04.10.19 13.10	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	04.10.19 13.10	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	04.10.19 13.10	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	04.10.19 13.10	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	04.10.19 13.10	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	04.10.19 13.10	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	116	%	70-130	04.10.19 13.10		
1,4-Difluorobenzene		540-36-3	106	%	70-130	04.10.19 13.10		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH04C Matrix:

Date Prep:

Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-009

Date Collected: 04.05.19 12.45

Sample Depth: 20 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: Analyst: RNL

% Moisture:

Seq Number: 3085165

RNL

04.10.19 09.15

Basis: Wet Weight SUB: T104704219-19-19

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 25.0 240 mg/kg 04.10.19 11.39 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

04.09.19 17.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.10.19 03.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.10.19 03.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.10.19 03.24	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.10.19 03.24	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	04.10.19 03.24	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	94	%	70-135	04.10.19 03.24		
o-Terphenyl		84-15-1	94	%	70-135	04.10.19 03.24		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH04C

Matrix: Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-009

Date Collected: 04.05.19 12.45

Sample Depth: 20 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B % Moisture:

Tech: Analyst: SCM SCM

Date Prep:

04.09.19 13.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	04.10.19 13.29	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	04.10.19 13.29	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	04.10.19 13.29	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	04.10.19 13.29	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	04.10.19 13.29	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	04.10.19 13.29	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	04.10.19 13.29	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	113	%	70-130	04.10.19 13.29		
1,4-Difluorobenzene		540-36-3	108	%	70-130	04.10.19 13.29		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Soil

Sample Id: BH05E

Matrix:

Date Received:04.09.19 12.09

Lab Sample Id: 620474-010

Date Collected: 04.05.19 13.00

Sample Depth: 30 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: RN

Analyst:

RNL RNL

Date Prep: 04.10.19 09.15

% Moisture: Basis:

Wet Weight

Seq Number: 3085165

SUB: T104704219-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	81.2	25.0	mg/kg	04.10.19 11.53		1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 04.09.19 17.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.10.19 03.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.10.19 03.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.10.19 03.43	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.10.19 03.43	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	04.10.19 03.43	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	94	%	70-135	04.10.19 03.43		
o-Terphenyl		84-15-1	94	%	70-135	04.10.19 03.43		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Soil

Sample Id: **BH05E**

Matrix:

Date Received:04.09.19 12.09

Lab Sample Id: 620474-010

Date Collected: 04.05.19 13.00

Sample Depth: 30 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech:

Analyst:

SCM SCM

Date Prep: 04.09.19 13.30

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	04.10.19 13.49	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	04.10.19 13.49	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	04.10.19 13.49	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	04.10.19 13.49	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	04.10.19 13.49	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	04.10.19 13.49	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	04.10.19 13.49	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	105	%	70-130	04.10.19 13.49		
4-Bromofluorobenzene		460-00-4	122	%	70-130	04.10.19 13.49		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH06

Seq Number: 3085165

Matrix:

Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-011

Date Collected: 04.05.19 13.15

Sample Depth: 5 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P % Moisture:

Basis:

Tech:
Analyst:

RNL RNL

Date Prep:

04.10.19 09.15

Wet Weight

SUB: T104704219-19-19

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 385
 25.0
 mg/kg
 04.10.19 12.00
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

Analyst: ARM

Date Prep: 04.09.19 17.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.10.19 04.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.10.19 04.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.10.19 04.02	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.10.19 04.02	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	04.10.19 04.02	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	105	%	70-135	04.10.19 04.02		
o-Terphenyl		84-15-1	104	%	70-135	04.10.19 04.02		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: BH06

Matrix:

Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-011

Date Collected: 04.05.19 13.15

Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

Analyst:

SCM

Date Prep: 04.09.19 13.30

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	04.10.19 14.08	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	04.10.19 14.08	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	04.10.19 14.08	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	04.10.19 14.08	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	04.10.19 14.08	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	04.10.19 14.08	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	04.10.19 14.08	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	116	%	70-130	04.10.19 14.08		
1.4-Difluorobenzene		540-36-3	107	%	70-130	04 10 19 14 08		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: **BH06E**

Matrix:

Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-012

Date Collected: 04.05.19 13.55

Sample Depth: 30 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P % Moisture:

Basis:

Tech: Analyst: RNL

Wet Weight

Seq Number: 3085165

RNL

Date Prep: 04.10.19 09.15

SUB: T104704219-19-19

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 101
 25.0
 mg/kg
 04.10.19 12.27
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 04.09.19 17.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.10.19 04.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.10.19 04.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.10.19 04.21	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.10.19 04.21	U	1
Total GRO-DRO	PHC628	<15.0	15.0		mg/kg	04.10.19 04.21	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	94	%	70-135	04.10.19 04.21		
o-Terphenyl		84-15-1	93	%	70-135	04.10.19 04.21		





LT Environmental, Inc., Arvada, CO

JRU 10 TB

Sample Id: **BH06E**

Matrix: Soil

Date Received:04.09.19 12.09

Lab Sample Id: 620474-012

Date Collected: 04.05.19 13.55

Sample Depth: 30 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SC

Analyst:

SCM SCM

Date Prep: 04.09.19 13.30

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	04.10.19 14.27	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	04.10.19 14.27	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	04.10.19 14.27	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	04.10.19 14.27	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	04.10.19 14.27	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	04.10.19 14.27	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	04.10.19 14.27	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	134	%	70-130	04.10.19 14.27	**	
1,4-Difluorobenzene		540-36-3	103	%	70-130	04.10.19 14.27		



Flagging Criteria



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- 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.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

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

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

- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

^{**} Surrogate recovered outside laboratory control limit.

Flag

X

Flag



Seq Number:

QC Summary 620474

LT Environmental, Inc.

JRU 10 TB

Analytical Method: Inorganic Anions by EPA 300

3085165 Matrix: Solid

LCS Sample Id: 7675410-1-BKS MB Sample Id: 7675410-1-BLK

MR

Result

Date Prep: 04.10.19

Prep Method:

LCSD Sample Id: 7675410-1-BSD

E300P

Spike Limits %RPD RPD Limit Units LCSD LCSD Analysis Flag **Parameter** Result Amount Result %Rec Date %Rec Result

04.10.19 10:09 Chloride <25.0 250 257 103 255 102 90-110 20 mg/kg

LCS

LCS

Result

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3085165

620474-001

Matrix: Soil

MS Sample Id: 620474-001 S

E300P Prep Method: Date Prep:

04.10.19

MSD Sample Id: 620474-001 SD

Parent Sample Id: Spike MS MS %RPD RPD Limit Units Parent **MSD MSD** Limits Analysis **Parameter**

Amount %Rec Result %Rec Chloride 1580 250 2310 292 2310 292 80-120 0 20 mg/kg 04.10.19 10:37

Analytical Method: Inorganic Anions by EPA 300

Seq Number:

3085165

Matrix: Soil

Prep Method:

E300P

Date Prep:

04.10.19

Date

MS Sample Id: 620474-011 S MSD Sample Id: 620474-011 SD Parent Sample Id: 620474-011

MS MS %RPD RPD Limit Units Parent Spike **MSD MSD** Limits Analysis Flag **Parameter** Result %Rec Date Result Amount Result %Rec 04.10.19 12:13 Chloride 385 250 702 127 701 126 80-120 0 20 X mg/kg

Analytical Method: TPH by SW8015 Mod

Seq Number: 3085150 Matrix: Solid

Prep Method:

TX1005P

04.09.19

Date Prep: LCSD Sample Id: LCS Sample Id: 7675424-1-BKS 7675424-1-BSD MB Sample Id: 7675424-1-BLK

LCS %RPD RPD Limit Units MB Spike LCS LCSD Limits Analysis LCSD **Parameter** Result %Rec Date Result Amount Result %Rec 04.09.19 20:31 Gasoline Range Hydrocarbons (GRO) 1170 70-135 20 < 8.00 1000 117 1100 6 110 mg/kg 04.09.19 20:31 109 70-135 8 20 Diesel Range Organics (DRO) 1000 1180 118 1090 < 8.13 mg/kg

LCS LCS LCSD MB MB LCSD Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 1-Chlorooctane 105 133 117 70-135 % 04.09.19 20:31 04.09.19 20:31 o-Terphenyl 107 125 109 70-135 %

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

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

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

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

Flag



Seq Number:

QC Summary 620474

LT Environmental, Inc.

JRU 10 TB

Analytical Method: TPH by SW8015 Mod

3085150 Matrix: Soil

MS Sample Id: 620421-001 S Parent Sample Id: 620421-001

TX1005P Prep Method:

Date Prep: 04.09.19 MSD Sample Id: 620421-001 SD

Spike MS MS Limits %RPD RPD Limit Units Parent **MSD MSD** Analysis Flag **Parameter** Result Amount Result Date %Rec %Rec Result Gasoline Range Hydrocarbons (GRO) 04.09.19 21:28 < 8.00 1000 1020 102 1040 104 70-135 2 20 mg/kg 2 20 04.09.19 21:28 Diesel Range Organics (DRO) < 8.13 1000 1000 100 1020 102 70-135 mg/kg

MS MS **MSD MSD** Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag Date 1-Chlorooctane 108 113 70-135 % 04.09.19 21:28 o-Terphenyl 97 98 70-135 % 04.09.19 21:28

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B Seq Number: 3085184 Matrix: Solid Date Prep: 04.09.19

LCS Sample Id: 7675459-1-BKS LCSD Sample Id: 7675459-1-BSD 7675459-1-BLK MB Sample Id:

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.0765	77	0.0731	74	70-130	5	35	mg/kg	04.09.19 23:18
Toluene	< 0.00200	0.100	0.0782	78	0.0751	76	70-130	4	35	mg/kg	04.09.19 23:18
Ethylbenzene	< 0.00200	0.100	0.0787	79	0.0755	76	70-130	4	35	mg/kg	04.09.19 23:18
m,p-Xylenes	< 0.00400	0.200	0.157	79	0.151	76	70-130	4	35	mg/kg	04.09.19 23:18
o-Xylene	< 0.00200	0.100	0.0817	82	0.0793	80	70-130	3	35	mg/kg	04.09.19 23:18

Surrogate	%Rec	Flag	%Rec	Flag	%Rec	Flag	Limits	Units	Date
1,4-Difluorobenzene	106		99		99		70-130	%	04.09.19 23:18
4-Bromofluorobenzene	107		102		102		70-130	%	04.09.19 23:18

Analytical Method: BTEX by EPA 8021B

Seq Number: 3085184 Matrix: Soil Date Prep: 04.09.19 MS Sample Id: 620421-001 S MSD Sample Id: 620421-001 SD Parent Sample Id: 620421-001

MS %RPD RPD Limit Units Parent Spike MS MSD MSD Limits Analysis Flag **Parameter** Result Amount Result %Rec %Rec Date Result 04.09.19 23:56 < 0.00202 0.06480.0491 Benzene 0.101 64 49 70-130 28 35 mg/kg X Toluene < 0.00202 0.101 0.0620 61 0.0588 59 70-130 5 35 mg/kg 04.09.19 23:56 X mg/kg 04.09.19 23:56 Ethylbenzene < 0.00202 0.101 0.0568 56 0.0559 56 70-130 2 35 X 35 04.09.19 23:56 X 0.00112 0.202 0.120 59 0.123 70-130 2.

0.0703

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		92		70-130	%	04.09.19 23:56
4-Bromofluorobenzene	106		120		70-130	%	04.09.19 23:56

67

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

m,p-Xylenes

o-Xylene

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

0.101

< 0.00202

0.0680

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result

62

71

70-130

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

04.09.19 23:56

X

Prep Method:

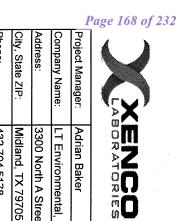
35

3

SW5030B

mg/kg

mg/kg



Chain of Custody

X	XMZCO Houst	Cn,TX (281) 240-4200 Dand TX (432-704-5440) E	Chain of Custody Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334 Midland, TX (432-704-5440) EL Paso TX (915)585-3443 Lubbock TX (806)794-1296	Work Order No: DOUN
		and,TX (432-704-5440) E 92-7550) Phoenix,AZ (48	Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296 Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)	-620-2000) www.xenco.com Page of 2
Manager:	Adrian Baker	Bill to: (if different)	Kyle Littrell	
y Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy	Program: UST/PST □PRP □Brownfields □RC □uperfund □
	3300 North A Street	Address:	3104 E Green Street	State of Project:
te ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220	Reporting:Level II
	432.704.5178 Ema	Email: bbelill@ltenv.com		Deliverables: EDD ☐ ADaPT ☐ Other:

<i>y</i>	л	ω 1	1 20 Cm	Relinquished by: (Signature)		of service. Xenco will be liable only for of Xenco. A minimum charge of \$75.00	Notice: Signature of this document and	Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010 200	2 Cotta	U S 2-450	Thorse Services	SES SES	ア で あ 表	3403	8H020	8H02B	8Hp10	3 10 H8	Sample Identification	Sample Custody Seals: Yes	_	Received Intact:	Temperature (°C):	SAMPLE RECEIPT	Sampler's Name: Benjamin Belill	P.O. Number:	Project Number: 288-3179	Project Name: JRU	Phone: 432.704.5178
			Com Me or	re) Received by: (Signature)	<u> </u>	r the cost of samples and shall not at will be applied to each project and a	relinquishment of samples constitu		200.8 / 6020: 8RC						-	1/5/cg (I PUMP	1 10/5/4 5	Matrix Sampled S	No N/A	N/A	Yes No		Temp Blank: Yes (No)	Belill		288-3	るな	178
			2 mln	r. (Signature)		ssume any responsibility for any i charge of \$5 for each sample su	tes a valid purchase order from c	TCLP / SPLP 6010: 8RCRA	8RCRA 13PPM Texas 11	1 06 1 008	'	†	10:15 28'	06:10	15,000 5,	08.70	H:30 15'	1:00 80'	0,10 38,	Time Depth	Total Containers:	Correction Factor:	8	Thermometer ID	Wet Ice: Yes No	Due Date:4/9/14	Rush: 24 hr	Routine	Turn Around	Email: bbelill@ltenv.com
C	B	4	4-5-190 1650 2 WM IM	Date/Time Refinqy/shed/by		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.	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	Sb As Ba Be Cd Cr Co Cu Pb	Al Sb As Ba Be B Cd Ca Cr Co Cu		×	X	べ。	X .	X	X	× .	1	X X X	TPH (E	PA 8	015)	021)						ANALYSIS	<u>om</u>
			WAY WAY	y: (Signature) Received by: (Signature)		ses are due to circumstances beyond the control be enforced unless previously negotiated.	rs. It assigns standard terms and conditions	Mn Mo Ni Se Ag Tl U	u Fe Pb Mg Mn Mo Ni K Se Ag																				IS REQUEST	Deliverables: EDD
			D'A'D	(Signature) Date/Time				1631 / 245.1 / 7470 / 7471 : Hg	SiO2 Na Sr Tl Sn U V Zn											Sample Comments	lab, if received by 4:30pm	TAT starts the day recevied by the				,			Work Order Notes	ADaPT Other:



Chain of Custody

Work Order No:

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

						,	
	Hobbs,NM (575	-392-7550) Phoenix,AZ (4	Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)		<u>o.com</u> Paç	www.xenco.com Page of	
Project Manager: Adrian Baker	Adrian Baker	Bill to: (if different)	Kyle Littrell		Work Order Comments	its	
Company Name:	LT Environmental, Inc., Permian office	Company Name: XTO Energy	XTO Energy	Program: UST/PST PRP Brownfields RC Superfund	Brownfields	RC uperfund	긥
Address:	3300 North A Street	Address:	3104 E Green Street	State of Project:	,	[
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220	Reporting:Level II	□st/ust [RRP □ bvel IV □	
Phone:	432.704.5178 En	Email: bbelill@ltenv.com	<u>n</u>	Deliverables: EDD	ADaPT 🗌	Other:	

Revised Date 051418 Rev. 2018.1							
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<u></u>		May by July	45-198 16:50 2	M	[m] 101 m	The state of the s	1 Band
\Date/Time	(Relinquighed by: (Signature)	Date/Time	by: (Signature)	Redeived by: (S	y: (Signature)	Relinquished by: (Signature)
ping:	ances beyond the control sviously negotiated.	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.	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 lo 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 w	e any responsibility for any ge of \$5 for each sample s	samples and shall not assum led to each project and a char	e liable only for the cost of : harge of \$75.00 will be appl	of service. Xenco will be of Xenco. A minimum of
9/	rd terms and conditions	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	lient company to Xenco, its af	valid purchase order from	ent of samples constitutes a	s document and relinquishm	Notice: Signature of this
1631 / 245.1 / 7470 / 7471 : Hg		Cd Cr Co Cu Pb Mn Mo Ni Se /	Sb As Ba Be	TCLP / SPLP 6010: 8RCRA		Circle Method(s) and Metal(s) to be analyzed	Circle Method
Sr Tl Sn U V Zn	Mn Mo Ni K Se Ag SiO2 Na	Cd Ca Cr Co Cu Fe Pb Mg	Al Sb As Ba Be B	13PPM Texas 11	: 8RCRA	6010 200.8 / 6020:	Total 200.7 / 6010
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			1 X X	30,	S 14/8/19 1385	S 29048	
			XXX	315 5	1/5/19	-	
Sample Comments			TPH BTE)	Depth	1x Sampled S		Sample Identification
lab, il received by 4:50pm		-	(EPA				
TAT starts the day recevied by the			801! A 0=		N/A Total Containers:	Yes No	Sample Custody Seals:
			5) B021				Cooler Chiefody So
				Thermometer ID	Thermo	42	Temperature (°C):
				Wet Ice: Yes No	Yes No	EIPT Temp Blank:	SAMPLE RECEIPT
				Due Date: المرادة		Benjamin Belill	Sampler's Name:
******				Rush: 24 h			P.O. Number:
				Routine 🗌	3164, 781-5247 Routine	2Rp-3179;2RP-3164,	Project Number:
Work Order Notes		ANALYSIS REQUEST		Turn Around	7	0000	Project Name:



After printing this label:

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

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

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



Page 1 of 1

IOS Number 126219

Date/Time: 04/09/19 13:03

Created by: Brianna Teel

Please send report to: Kalei Stout

Lab# From: Midland

Delivery Priority:

Address: 1211 W. Florida Ave

Lab# To: Lubbock

Air Bill No.: FED 774927932079

E-Mail: kalei.stout@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
620474-001	S	BH01F	04/03/19 10:10	E300	Inorganic Anions by EPA 300	04/10/19	05/01/19	KLS	CL	
620474-002	S	BH010	04/04/19 11:00	E300	Inorganic Anions by EPA 300	04/10/19	05/02/19	KLS	CL	
620474-003	S	ВН02В	04/04/19 14:30	E300	Inorganic Anions by EPA 300	04/10/19	05/02/19	KLS	CL	
620474-004	S	BH020	04/05/19 08:30	E300	Inorganic Anions by EPA 300	04/10/19	05/03/19	KLS	CL	
620474-005	S	BH03	04/05/19 09:00	E300	Inorganic Anions by EPA 300	04/10/19	05/03/19	KLS	CL	
620474-006	S	ВН03А	04/05/19 09:10	E300	Inorganic Anions by EPA 300	04/10/19	05/03/19	KLS	CL	
620474-007	S	BH04D	04/05/19 10:15	E300	Inorganic Anions by EPA 300	04/10/19	05/03/19	KLS	CL	
620474-008	S	BH04I	04/05/19 11:45	E300	Inorganic Anions by EPA 300	04/10/19	05/03/19	KLS	CL	
620474-009	S	ВН04С	04/05/19 12:45	E300	Inorganic Anions by EPA 300	04/10/19	05/03/19	KLS	CL	
620474-010	S	вно5Е	04/05/19 13:00	E300	Inorganic Anions by EPA 300	04/10/19	05/03/19	KLS	CL	
620474-011	S	BH06	04/05/19 13:15	E300	Inorganic Anions by EPA 300	04/10/19	05/03/19	KLS	CL	
620474-012	S	ВН06Е	04/05/19 13:55	E300	Inorganic Anions by EPA 300	04/10/19	05/03/19	KLS	CL	

Inter Office Shipment or Sample Comments:

Relinquished By:

Brianna Teel

Date Relinquished: <u>04/09/2019</u>

Received By:

Ashley Derstine

Date Received: <u>04/10/2019 09:15</u>

Cooler Temperature: 2.7

XENCO Laboratories

Page 172 of 232

Inter Office Report- Sample Receipt Checklist



Sent To: Lubbock IOS #: 126219

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used: R3

Sent By:	Brianna Teel	Date Sent:	04/09/2019 01:03 PM
Received By:	Ashley Derstine	Date Received:	04/10/2019 09:15 AM

Gent by.	Dilatilla Teel	Date Sent. 04/	09/2019 01:03 1 W		
Received By	: Ashley Derstine	Date Received: 04/	10/2019 09:15 AM		
		Sample Receip	t Checklist		Comments
#1 *Tempe	rature of cooler(s)?		2	2.7	
#2 *Shippir	ng container in good condition	on?	Y	es	
#3 *Sample	es received with appropriate	temperature?	Y	es	
#4 *Custod	y Seals intact on shipping o	ontainer/ cooler?	Y	es	
#5 *Custod	y Seals Signed and dated f	or Containers/coolers	Y	es	
#6 *IOS pre	esent?		Y	es	
#7 Any mis	sing/extra samples?		ŀ	No	
#8 IOS agre	ees with sample label(s)/ma	atrix?	Y	es	
#9 Sample	matrix/ properties agree with	th IOS?	Y	es	
#10 Sample	es in proper container/ bottl	e?	Y	es	
#11 Sample	es properly preserved?		Y	es	
#12 Sample	e container(s) intact?		Y	es	
#13 Sufficie	ent sample amount for indic	ated test(s)?	Y	es	
#14 All sam	nples received within hold ti	me?	Y	es	
* Must be co	ompleted for after-hours dance:	elivery of samples pr	ior to placing in the r	efrigerator	
Corrective A	ction Taken:				
		Nonconforman	ce Documentation		
Contact:		Contacted by :		Date:	
	Checklist reviewed by:	Ashley Dersti		04/10/2019	

Released to Imaging: 9/12/2024 2:10:57 PM



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 04/09/2019 12:09:00 PM

Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient

Comments

Work Order #: 620474

Temperature Measuring device used: R8

#1 *Temperature of cooler(s)?		.4
#2 *Shipping container in good condition	?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seals intact on shipping cor	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle	es?	N/A
#6*Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?		Yes
#8 Any missing/extra samples?		No
#9 Chain of Custody signed when relinqu	uished/ received?	Yes
#10 Chain of Custody agrees with sample	e labels/matrix?	Yes
#11 Container label(s) legible and intact	?	Yes
#12 Samples in proper container/ bottle?	,	Yes
#13 Samples properly preserved?		Yes
#14 Sample container(s) intact?		Yes
#15 Sufficient sample amount for indicat	ed test(s)?	Yes
#16 All samples received within hold time	e?	Yes
#17 Subcontract of sample(s)?		N/A
#18 Water VOC samples have zero head	dspace?	N/A
* Must be completed for after-hours de	livery of samples prior to placing in	the refrigerator
Analyst:	PH Device/Lot#:	
Checklist completed by:	Brianna Teel	Date: 04/09/2019
Checklist reviewed by:	Kalei Stout	Date: 04/09/2019

Sample Receipt Checklist

LT Environ	LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation						ation	Identifier: PHOI Project Name: SRUIO	Date: 3/5/19 - 3/7/ RP Number: 3/7/
Lat/Long: Field Screening:								Logged By: 60	Method: 1 H Total Depth: 20
Commen					TPH	1 CHL	-		
Moisture	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/F	
0		1705	N	en i	à .	6'		caliche/sand - bight br	no
0		aon	N	2	*	81		caliche/sand, light	
0		920	N	3	4	10'		caliche/sand, fan,	
0		1550	N	4	3	ווי		sandy Sgravel, Red, n lorge 2-4cm rocks	
0		1530	2	5	×	14'	-	sandy w/graveli Re	d, Noplasticity
D		1570		6	8	16'		sandy w/gravel, Re	Jino plasticit
P		1544		7	À	18		Sandy Clay w/grave	
0	2105	1530		8	¥	20		sandy clay wigrar low plasticity	
D		1440		9	8	122		elay, dark red low	
D		580		10	×	74		Clay, dark red, med	
0		484	1	11	No	25		clay, darkred/bri	onn, medplast.
					N	1			
					10	#			

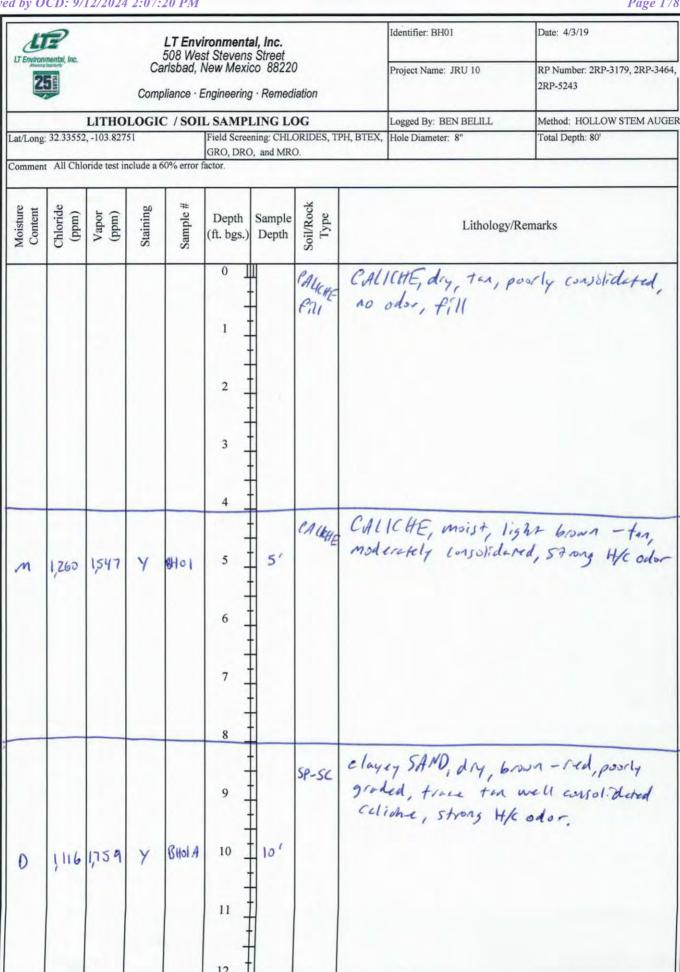
LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation								Identifier: Ptf 07 Project Name:	Date: 3/7/2019 RP Number:
								JRU10	3179
	1	LITHOI	OGIC			LING LO	Logged By: G7 G1	Method: TH	
at/Long:					Field Scree	ning: 1CHL	Hole Diameter:	Total Depth:	
omment	ts:								
Moisture	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithol	ogy/Remarks
D		(683)	N	1	0	6		Tan/brown, low caliche/finegraine	plasticity.
D		1570	N	2	1	8			Isome grave 1/5 a moy loan
0		1614	N	3	2	10		Sandyloam w/grave Noplasticity	
D		1560	N	4	7	12		Darkred/brawn, Noplasticity	
D		1487	N	5	4	14		Dark red/brown	, clay wisome sand
D		M80	И	6	7	16		noblosticity	and w/ some clay/somes
D		1460	N	7	4	18		park red/brown	n sandy clay, someg
D		1820		8	1	10			andy clay, noplasficit
0		1484		a	8	122			med plasficity
0		1590		03	9	74			, med plasficity
D		1690		11	10	26		Parkled, clay,	medplasticity
0		1880		12	M	128		Darkred clay	, med plastic; ty
0		1510		13	1/2	30		Darkred clayer	ned plasticity

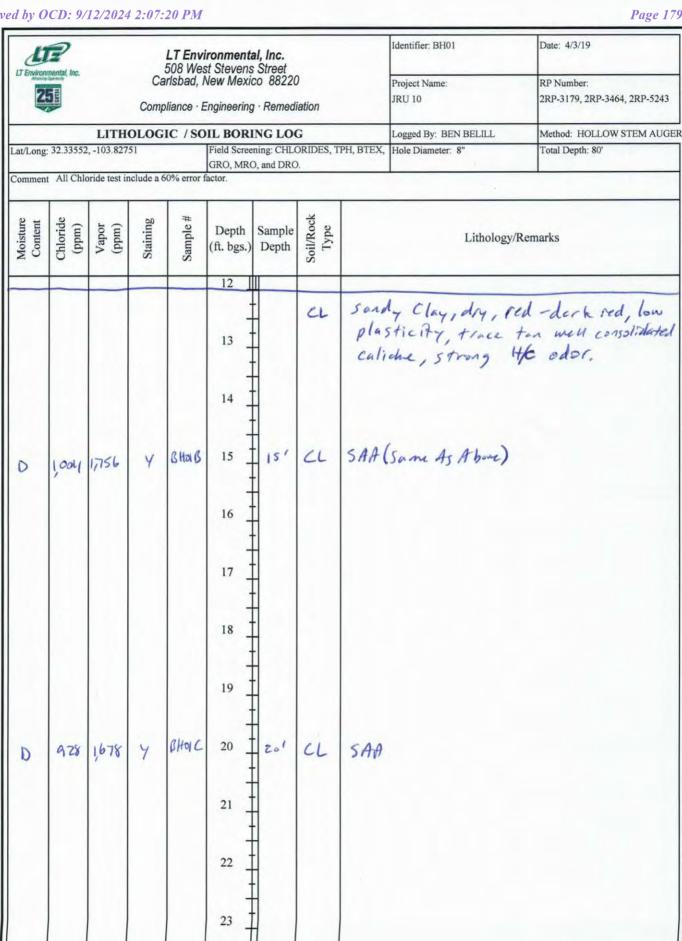
Released to Imaging: 19/12/2024 2:10:57 PM 37

Parkred Clay, m

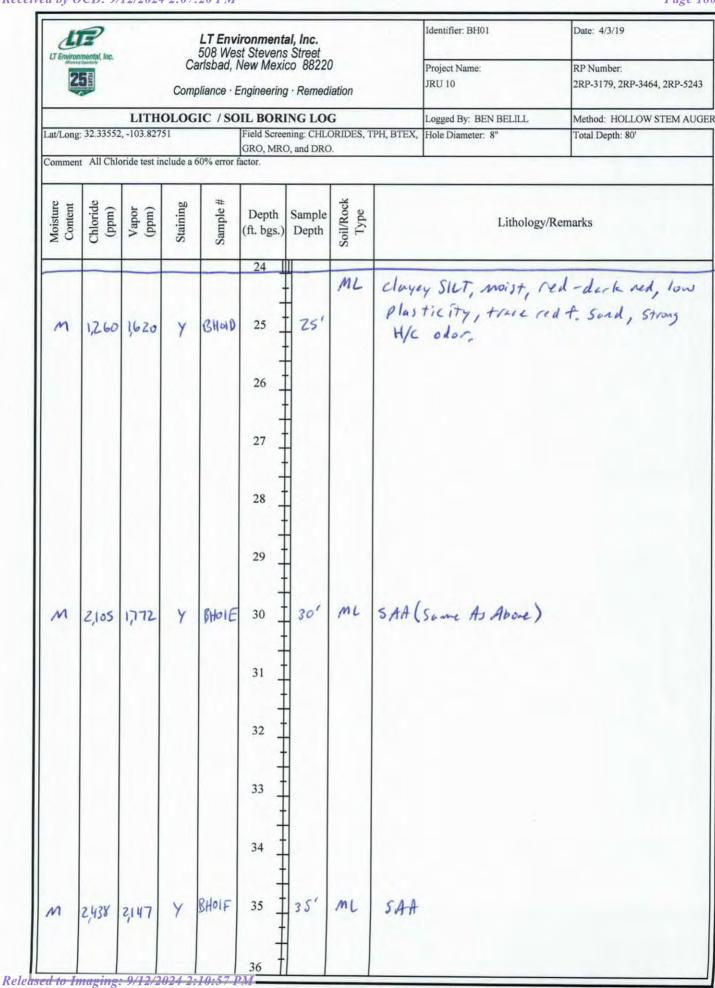
	LI Environ			Ca	508 We rlsbad,	rironment st Steven New Mex Engineerin	s Street ico 8822		Identifier: PH02 Date: 03/08/19
	Lat/Long:		LITHO	LOGIC	/ SOI	L SAMP		OG	Logged By: Method: Pot No C Hole Diameter: 2564 Total Depth:
	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
9930	dny	381	2168	N		0]	35′	5	Clay Red PG odor
)950	dny	390	2008	N		2 . 3	37'	5	Clay Red PG ador
1030	dry	380	1974	N		4	38'	4	Clay Red PG
320	dry	29,0	1631	N		5	110'	5	Clay Red PG odor
1646	dry	yest	1865	2		6	41	5	Clay Red PG oder
1420	gia	550	1736	N		7	41.5	5	Clay Red PG odor
1500	gen	380	1841	7		8	42	5	Clay Red PG odor
						9 -			
						10			
						11	+		
						12			

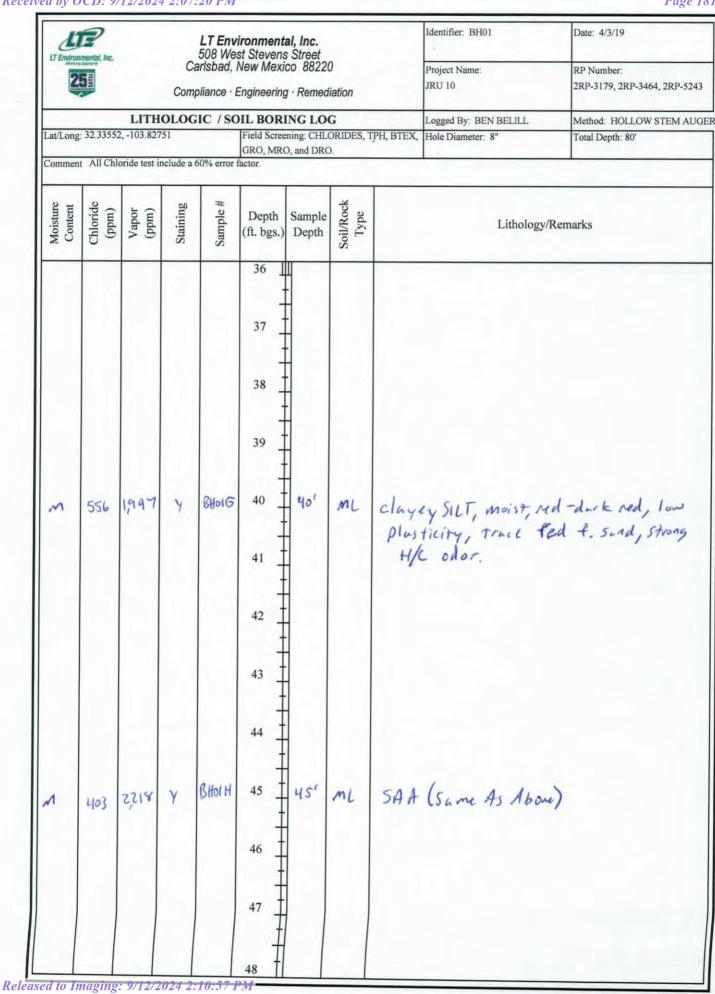
Released to Imaging: 9/12





Released to Imaging: 9/12/2024 2:10:57 PM







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

Compliance · Engineering · Remediation

Identifier: BH01 Date: 4/3/19

Project Name: RP Number:

JRU 10 2RP-3179, 2RP-3464, 2RP-5243

LITHOLOGIC / SOIL BORING LOG

Lat/Long: 32.33552, -103.82751 | Field Screening: CHLOR

Field Screening: CHLORIDES, TPH, BTEX, Hole Diameter: 8" GRO, MRO, and DRO.

Logged By: BEN BELILL

Method: HOLLOW STEM AUGER Total Depth: 80'

Comment All Chloride test include a 60% error factor.

M 403 1701 Y SHOLT 50 50' ML clayer SICT, moist, red-dark replasticity, trace red f. Sand, 5 H/C odor.	
M 403 1,701 Y BHOIT 50 50' ML clayer SILT, moist, red-dark replasticity, trace real f. Sand, 5 H/K odor.	
M 403 1,701 Y BHOIT 50 50' ML clayer SILT, moist, red-dark replasticity, trace red f. sand, s 152 53	
plasticity, trace red f. sand, s tyc odor.	
51	d, low
51	trong
53 7	
54	
me SILT, moist, red-dark red, low	
M 665 844.5 Y BHOIJ 55 SS'. Plasticity, trace red clay, on	oderare
56	
57 🖠	
59 ‡	
M 320 1205 Y BHOIK 60 60' ML SAA (Same As Above)	

LT Environmental, Inc.
25

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

Project Name: JRU 10

Date: 4/3/19

RP Number:

Compliance · Engineering · Remediation

Identifier: BH01

2RP-3179, 2RP-3464, 2RP-5243

LITHOLOGIC / SOIL BORING LOG Lat/Long: 32.33552, -103.82751

Logged By: BEN BELILL

Method: HOLLOW STEM AUGER

Released to Imaging: 9/12/2024 2:10:57 PM

Field Screening: CHLORIDES, TPH, BTEX, Hole Diameter: 8" GRO, MRO, and DRO.

Total Depth: 80'

Comment All Chloride test include a 60% error factor.

66 Plusticity, trace red clay, moderate H/C odor. 68 Sandy SILT, dry, light brown = red, Jaw plustity some light brown	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)		Soil/Rock Type	Lithology/Remarks
Sandy SILT, dry, light bown = red, 10w plasticity, some light bown well consolidated caliche, low H/c odor.	M	320	625	γ	BHOLL	61 62 63 64 65 66 67 68	65'	ML	SILT, moist, red-dark red, low plusticity, trace red clay, moderate H/C odor.
	O «	<112	135,5	N	BHOIM	70	70'	ML	low plasticity, some light brown well consolidated caliche, low H/C

LT Environ	mental, Inc.		0	LT Env	ironment st Stevens New Mexi	al, Inc.	1		Identifier: BH01	Date: 4/3/19
2	58				vew Mexi Engineering				Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464, 2RP-5243
				IC / SO	IL BOR				Logged By: BEN BELILL	Method: HOLLOW STEM AUGI
Lat/Long	32.33552	2, -103.827	51		Field Scree GRO, MRO			PH, BTEX,	Hole Diameter: 8"	Total Depth: 80'
Commen	All Chlo	oride test in	iclude a	60% error i		o, and Dicc	,			
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology	/Remarks
					72]	_				
					73					
					74					
0	556	282,5	Y	BHOIN	75	75'	CL	silt	sticity, low	ed-brown, low H/c odor.
					76	-				
					77					
					78	-				
					79			pla	y Clay, dry, ru sticity, trace	d-brown, low red fm. sand, no
0	4112	48.0	N	BHOIO	80	80'	CL			
					81				TE0.5 @ 80'	
					82					
					83					
					84					

eu by (UCD: 9	12/202	4 2:07	.20 PM						Page 10
LT Envir	Pronmental, Inc.			508 We	vironmen est Stever	s Street			Identifier: BH02	Date: 4/4/19
	25				New Mex				Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464
4	73		Con	npliance ·	Engineerin	g · Remed	diation			2RP-5243
T at/T on	ng: 32.3353			IC / SO	L SAMP				Logged By: BEN BELILL	Method: HOLLOW STEM AUGE
					GRO, DR	O, and MR		IPH, BTEX,	Hole Diameter: 8"	Total Depth: 80'
Comme	ent All Ch	loride test	include a	1 60% error	factor.					132
Moisture	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Litholog	y/Remarks
					2		SP			-light brown, ed, true 10575, no
D	<112	7.8	~	SH102	5	5'	CALICHE	CAL	ICHE, dry, light some	t brown - tan, poorly brown on. sund, no
D	275	3, [N	BHZA	9 10 11 11 12		ML	Sand	y SILT, dry, loolastic, no odu	ight brown - red,

LT Environmental, Inc.			508 Wes arlsbad, l	ironment st Stevens New Mexi Engineering	Street co 8822			Identifier: BH02 Project Name: JRU 10		Date: 4/4/19 RP Number: 2RP-3179, 2RP-3464, 2RP-524
Lat/Long: 32.3353	6, -103.827	751		GRO, MR	ening: CHL	РН, ВТЕХ,	Logged By: BEN Hole Diameter: 8		Method: HOLLOW STEM AUG Total Depth: 80'	
Moisture Content Chloride (ppm)			Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type			Lithology/Re	emarks
D 158	3.1	N	BH026	13	20'			ly SILT, plastic or. (Sume As		d-light brown, red clay, no

LT Enviror	mental, Inc.			508 Wes	ironment st Stevens	Street	^		Identifier: BH02	Date: 4/4/19
2	5			Carlsbad, l Inpliance · E					Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464, 2RP-5242
		LITE	IOLOG	GIC / SO	IL BOR	ING LO	G		Logged By: BEN BELILL	Method: HOLLOW STEM AUG
t/Long	g: 32.3353				Field Scree	ning: CHL	ORIDES, T	TPH, BTEX,	Hole Diameter: 8"	Total Depth: 80'
ommen	nt All Chl	oride test	include a	60% error f	GRO, MRO), and DRC).			
Moisture	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Litholog	gy/Remarks
					24					
					-		ML	Clayer	, SICT, dry, red	-brown, low
0	C112	2.6	N	BHOZD	25	25'		Plas	, SICT, dry, red ticity, no HI	kodor.
					_	1		1	Rotary Besins	
					26	Rotary		HIV!	Totary Desins	
					_	25'-80'				
					27					
					1					
					28	1				
					1	1				
					29					
					1					
D	4112	1.0	N	BHOZE	30	30'	ML	SAA(Same As Above)
					1					
					31					
					1					
					32					
					1					
					33					
					1					
					34					
					1					
0	1112	1.3	N	BH02F	35	35'	ML	SAA		
					+					
					36					



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

Compliance · Engineering · Remediation

Identifier: BH02 Date: 4/4/19

Project Name: RP Number: JRU 10

2RP-3179, 2RP-3464, 2RP-5243

Method: HOLLOW STEM AUGER

LITHOLOGIC / SOIL BORING LOG

Lat/Long: 32.33536, -103.82751

Field Screening: CHLORIDES, TPH, BTEX, Hole Diameter: 8" GRO, MRO, and DRO.

Logged By: BEN BELILL

Total Depth: 80'

Comment All Chloride test include a 60% error factor

Moisture	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					36]			
0	<112	0.9	N	BHOZG	40 41 42 42	40'	ML	Clayey SILT, dry, red-brown, low plasticity, no odor.
D	Luz	0.6	N	BHOZ H	43	45'	mL	SAA (Same As Abone)
					46 47			

Name of Street,	mental, Inc.			508 Wes arlsbad, I	ironment st Stevens New Mexi	s Street co 88220			Identifier: BH02 Project Name: JRU 10	Date: 4/4/19 RP Number: 2RP-3179, 2RP-3464, 2RP-5243
		LITH		a been to	IL BOR				Lagrand Day DEN DELILI	Method: HOLLOW STEM AUG
.at/Long	32,33536			JIC / 30				PH, BTEX,	Logged By: BEN BELILL Hole Diameter: 8"	Total Depth: 80'
Commen	t All Chle	oride test i	nclude a	60% error f		O, and DRC).			
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology	//Remarks
					48					
					49					
D	2112	0.4	N	BHOZI	50	50'	ML	Clays	ey SILT, dry, red string, no od	l-brown, low
					51	-		712	string, no or	
					52					
					53	-				
		_			54	-				
D	2112	1.7	N	BHOZJ	55	55'	ML	51L7 +12	dry, red-1	ight brown, nonplastic
					56					
					57					
					58					
					59					
0	KIIZ	1,8	N	BHOZK	60	60'	ML	5AA (Sime As Above)	



Lat/Long: 32.33536, -103.82751

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

Compliance · Engineering · Remediation

Identifier: BH02	Date: 4/4/1

 Project Name:
 RP Number:

 JRU 10
 2RP-3179. 2

2RP-3179, 2RP-3464, 2RP-5243

LITHOLOGIC / SOIL BORING LOG

Field Screening: CHLORIDES, TPH, BTEX, Hole Diameter: 8"
GRO, MRO, and DRO.

Method: HOLLOW STEM AUGER Total Depth: 80°

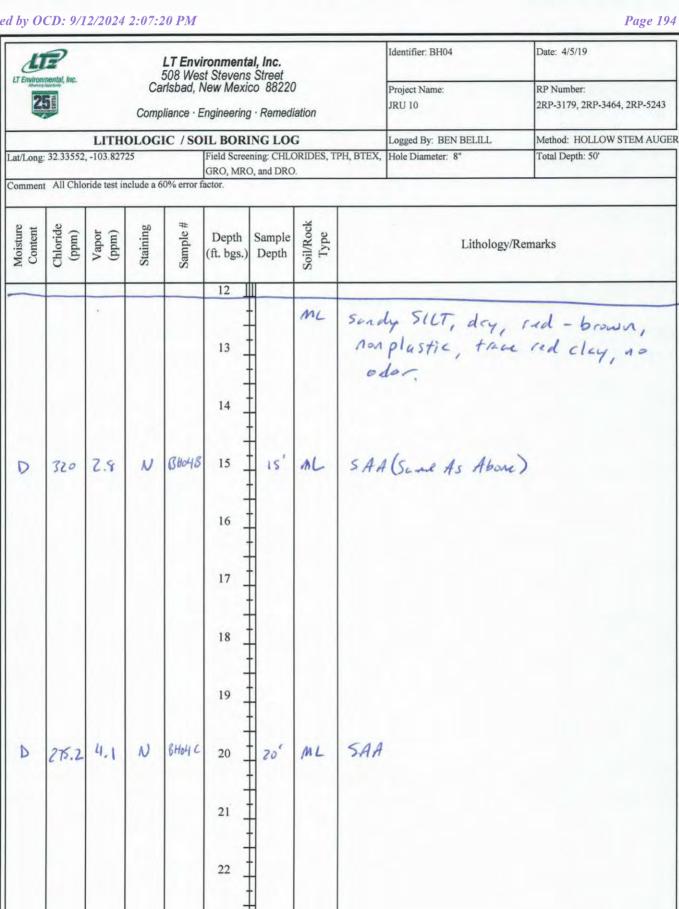
Comment All Chloride test include a 60% error factor.

Moisture	Chloride	Vapor	(ppm)	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
0	CIIZ	1.0	. ~	BHOZL	60 61 62 63 64 65 66 67 68 69	65'	ML	SICT, dry, red-lisht brown, nonplastic, tace red clay, no odor
	<112	0,2	N	Blinem	70	10° A	nL	Clayey SILT, dry, red-brown, low plasticity, trace m, sed sand, no odor.

LT Environ	inental, Inc.		C	LT Envi 508 Wes arlsbad, I	ironment st Stevens Vew Mexi	al, Inc. s Street co 8822	0		Identifier: BH02 Project Name:	Date: 4/5/19 RP Number:
2	5				ngineering				JRU 10	2RP-3179, 2RP-3464, 2RP-5243
				SIC / SO	IL BOR				Logged By: BEN BELILL	Method: HOLLOW STEM AUGE
	; 32.33536			60% error t	GRO, MR	ening: CHL		PH, BTEX,	Hole Diameter: 8"	Total Depth: 80'
Jommen	I All Clik	T True test in	T T	1	actor.					
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology	y/Remarks
					72					
					73					
					74 _		CL	sil	ty CLAY, dry, astraity, trace	red-brown, low brown m. sand, no
D	<111Z	0.2	N	BHOZN	75	75'	CL	0	dor.	
					76	-				
					77					
					78					
					79					
D	(11Z	0.2	N	BHOZO	80	80'	CL	SAA	(Same As Above)	
					81			1	(Same As Above) - E.O.B. @ 80'	
					82					
					83					
		9/12/2			84					

LT Environ	mental, Inc.			508 We	ironment st Stevens	Street	•		Identifier: BH03	Date: 4/5/19
2	51				New Mexi Engineering				Project Name: JRU 10	RP Number: 2RP-3179, 2RP-346 2RP-5243
				C / SOI	L SAMP	LING L	OG		Logged By: BEN BELILL	Method: HOLLOW STEM AUG
Lat/Long	32.33552	2, -103.827	32		Field Scree			H, BTEX,	Hole Diameter: 8"	Total Depth: 10'
Commen	t All Chlo	oride test i	nclude a	60% error		, and whe	0.			
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology	/Remarks
					0 1					-light brown, poorly ts, no edos nt brown - ten, d, some brown dor.
D	1260	1.0	N	BH03	5 - 6 - 7 - 8	5'				
D	723.2	70	N	Bhai A	9	10"			ly SILT, dry, plastic, no or	light bown-red,
	164.6	8, 6	10	g.sz.	11		ML		(E.O.B. Q10	
					12					

LT Environ	P mental, Inc.		0	508 Wes	ironment	Street	n	Identifier: BH04	Date: 4/5/19
2	56				New Mexi Engineering			Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464 2RP-5243
Lat/Long		LITHO 2, -103.827		C / SOI	Field Scree	ning: CHL	ORIDES, TPH, BTI	Logged By: BEN BELILL EX, Hole Diameter: 8"	Method: HOLLOW STEM AUGI Total Depth: 50'
Commen	t All Chlo	oride test in	nclude a	60% error i		o, and wire	O		
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithold	ogy/Remarks
					0 1		SP SA	AND, dry, bour	trace roots, so odor
D	<112	2.0	~	Вно 🕊	5 _ 6 _ 7 _ 8	5	CAYCHE PO	ALICHE, dry, orly consolidate. Sand, no a	light boun -ten, red, some brown dor.
D	198,4	7.8	N	SHD4A	9	lo'	Sa no ML	ndy SILT, dry,	light brown - red,



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23

24

Atlantin	mental, Inc.			508 Wes arlsbad, I	ironment st Stevens New Mexi	s Street co 88220			Identifier: BH04 Project Name: JRU 10	Date: 4/5/19 RP Number: 2RP-3179, 2RP-3464, 2RP-5243
		LITH			IL BOR			1	Logged By: BEN BELILL	Method: HOLLOW STEM AUGE
Lat/Long	32.33552				Field Scree	- 50 / 50 / 50 / 50 / 50 / 50 / 50 / 50	ORIDES, TPI	I, BTEX,		Total Depth: 50'
Commen	t All Chlo	oride test i	nclude a	60% error f		O, and DRC).			
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Litholog	gy/Remarks
					24					
D	499.2	3.6	N	BHOID	25	Air Rotary 25'-56	ML	plas Air	ey SILT, dry tizity, no od Rotary Begins	red-brown, low
					27					
					28					
					29		ML	clay pla:	ey SILT, mois stirity, no od	t, red-brown, low
M	1103	1.8	N	BHOLE	30	30				
					31					
					32					
					33					
					34					
M	276.2	1.4	N	BHOUF	35	35'	ML	SAA	Same As Abon	v)
		9/12/2			36	-				

Released to Imaging: 9/12/2024

LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation LITHOLOGIC / SOIL BORING LOG Lat/Long: 32.33552, -103.82725 Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO. Comment All Chloride test include a 60% error factor. Depth (ft. bgs.) Depth Sample Ogy Inc. Ogy	Date: 4/5/19 RP Number: 2RP-3179, 2RP-3464, 2RP-5243 ELILL Method: HOLLOW STEM AUGE Total Depth: 50' ithology/Remarks
Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation LITHOLOGIC / SOIL BORING LOG Lat/Long: 32.33552, -103.82725 Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO. Comment All Chloride test include a 60% error factor. Depth (ft. bgs.) Depth Sample Oph Oph	2RP-3179, 2RP-3464, 2RP-5243 ELILL Method: HOLLOW STEM AUGE Total Depth: 50'
LITHOLOGIC / SOIL BORING LOG Logged By: BEN BE Lat/Long: 32.33552, -103.82725 Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO. Comment All Chloride test include a 60% error factor. Depth (ft. bgs.) Ben	ELILL Method: HOLLOW STEM AUGEI Total Depth: 50'
Aut/Long: 32.33552, -103.82725 Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO. Comment All Chloride test include a 60% error factor. Depth (ft. bgs.) Depth Sample Depth Sample Depth D	Total Depth: 50'
GRO, MRO, and DRO. Comment All Chloride test include a 60% error factor. Sample Sample (ft. bgs.) Depth Depth Open Depth Sample Open Depth Depth Open De	
Moisture Content Content Content Content Content Content Content Content Sample Beat Approx Type Type Type Type Type Type Type Type	ithology/Remarks
36	ithology/Remarks
37 🖠	
38 1	
39	
M KINZ Z.7 N BHOYG 40 40" ML Clayey SILT,	noist red-brown, law
plasticity, no	noist, red-brown, low odor.
41 1	
42 1	
43 🗍	
clayey SILT, a	dry, red - brown, low
D (112 4.7 N BHOWH 45 45' ML Plasticity, to	race brown m. sand,
46	
47 🖠	

LT Environ	mental, Inc.		C	LT Envi	ironment st Stevens Vew Mexi	al, Inc.)		Identifier: BH04	Date: 4/5/19
2	51				Engineering				Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464, 2RP-5243
	22.22552			SIC / SO	IL BOR			II Darriy	Logged By: BEN BELILL	Method: HOLLOW STEM AUG
		2, -103.827		60% error i	GRO, MR	O, and DRC		H, BIEX,	Hole Diameter: 8"	Total Depth: 50'
Commen	All Clik	I	icidde a	T	I					
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	,	Lithology	/Remarks
					48]					
					49			1	SUT la M	1-bown low
D	4112	13.7	N	BHOUI	50	50'	ML	plas	ticity, trace broader.	own m. sand,
						-		no		
					51	-			(F.O.B. @ 50)'
					-					
					52					
					53	-				
					-					
					54					
					55					
					56					
					-					
					57					
					-					
					58					
					59					
					1					
		9/12/2	9242	10.57 D	60					

di	2				ronment				Identifier: BH05	Date: 4/5/19
LT Environ	emental, Inc.	508 West Stevens Street Carlsbad, New Mexico 88220 Compliance · Engineering · Remediation							Project Name: JRU 10	RP Number: 2RP-3179, 2RP-346
-			Comp	oliance · E	ngineering	· Remed	iation			2RP-5243
				C / SOI	L SAMPI	555			Logged By: BEN BELILL	Method: HOLLOW STEM AUG
.at/Long	; 32.33566	, -103.827	50		Field Scree GRO, DRO			PH, BTEX,	Hole Diameter: 8"	Total Depth: 30'
Commen	t All Chlo	oride test in	iclude a	60% error i	actor.					
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology	/Remarks
					0 1	-	CALKHE Fill	CALI	CHE, dry lish	t brown, unconsolidered,
					2	-	SP	SAN	10, dry, brown - led, trace root	light brown, poorly
					3					
M	<112	1,7	N	BH05	4	5'	CALICHE	Mod brow	ICHE, moist, lerately consolid	light brown -tan, lated, some light a odor.
					6 -					
					8					
					9	-	CACICHE		(che, moist, ton consolidated, to odor.	- lisht brown, modester
M	<111Z	1.8	N	BH05A	10	10'				
					11					
					12					

by O	CD: 9/1	2/2024	2:07:	20 PM						Page 19
<u>t</u>	P mastel inc				ronment t Stevens				Identifier: BH05	Date: 4/5/19
Anartis SMERT	mental, Inc.		Ca	arlsbad, N	lew Mexi	co 88220)		Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464, 2RP-5243
•	4		Com	pliance · E	ngineering	g · Remedi	iation		JRU 10	2RF-3179, 2RF-3404, 2RF-3243
			CONT. INC.	IC /SO		ING LO			Logged By: BEN BELILL	Method: HOLLOW STEM AUGE
t/Long	; 32.33566	, -103.827	50			ening: CHLO O, and DRO		H, BTEX,	Hole Diameter: 8"	Total Depth: 30'
ommen	t All Chlo	oride test in	nclude a	60% error f	actor.					
Moisture	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology	r/Remarks
					12					
					13					
					-		SP	Sill	ty SAND, red	- brown, moist,
					14			POD	My graded,	144., no odo-
m	275	2,9	N	BHOSB	15	15'	50			
			,-							
					-	#				
					16	H				
					-	H				
					17	H				
					18					
							ML	clas	jey SILT, dry,	ud-brown,
					19			101	plastic, no a	odor,
0	320	1.2	N	BHOSC	20		ML			
-	,	1.6	10	1111000	20 -	70'	W.L			
					-	H				
					21	Ħ				
						1				
					22					
						+				
					23					
					25 _	H				

LT Environ	Pinental, Inc.		0	LT Env	ironment st Stevens Vew Mexi	tal, Inc.	0		Identifier: BH05	Date: 4/5/19
2	5				ngineerin				Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464, 2RP-5243
		LITH			IL BOR				Logged By: BEN BELILL	Method: HOLLOW STEM AUG
		5, -103.827			GRO, MR	ening: CHL		ł, BTEX,	Hole Diameter: 8"	Total Depth: 30'
Comment	t All Chlo	oride test i	nclude a	60% error f	actor.					
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology	//Remarks
					24			¥.		
D	4112	1,9	N	BHOSD	25	25'	ML	Clay.	ey SILT, day, aplastic, no	red - brown, odor.
					26	-				
					27	-				
					28					
					29					
0	(112	7.9	N	BH05E	30	30'	ML	SAA	(Some As Above)
					31				(Same As Above)	
					32					
					33					
					34					
					35					
T. T		9/12/26	2242.	10.57 0	36					

d	T?				ironment				Identifier: BH06	Date: 4/5/19
ET Enviro.	56			arlsbad,	st Steven New Mexi Engineerin	ico 8822		Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464 2RP-5243	
		LITHO	DLOG	IC / SOI	L SAMP	LING L	0G		Logged By: BEN BELILL	Method: HOLLOW STEM AUGE
	g: 32.33554			60% error	GRO, DRO	ening: CHL O, and MR		РН, ВТЕХ,	Hole Diameter: 8"	Total Depth: 30'
				#			<u>~</u>			
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Lithology	//Remarks
					0]		CAUCHE	CALI	CHE, dry, light ca brown f.	+ brown, unconsolidated, sond, no odor, fill.
					2	-	SP	SAN	D, dry, brown	-light boun,
					3			od	or.	, , , , , ,
					4 _		CALICHE	(21	ICHE, day, lightsolidated, true. Send, no or	sht brown, poorly is light brown dor.
D	556.8	2.0	N	BH 06	-	5'				
					6 _					
					8					
					9		ML	Sunda	plasticity, as	t brown -red,
D	358	1.9	N	BHOGA	10	10'	ML			
					11					
					12					

LT Environmental, Inc.		508 W	vironment est Steven , New Mex	s Street ico 8822		Identifier: BH06 Project Name: JRU 10	Date: 4/5/19 RP Number: 2RP-3179, 2RP-3464, 2RP-5243
	LITHE		- Contraction	21 11111111111111	TOTAL COLUMN TO THE COLUMN TO		
Lat/Long: 32.3355		DLOGIC / S			ORIDES, TPH, BTEX,	Logged By: BEN BELILL Hole Diameter: 8"	Method: HOLLOW STEM AUG Total Depth: 30'
Comment All Chi	oride test inc	clude a 60% erro		O, and DRO	0.		
Moisture Content Chloride (ppm)	Vapor (ppm)	Staining Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Litholog	gy/Remarks
			12				
D 320	3.9	N BHOL	13	us'		(Same As Above)	ed-brown, poorly odor.
) 454.4	2.5	N BHOGG	18	20'	sili Poi	ty SAND, dry, only graded, to	light boun-red,

Released to Imaging: 9/12/2024 2:10:57 PM

Identifier: BH06 Date: 4/5/19 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 Project Name: RP Number: JRU 10 2RP-3179, 2RP-3464, 2RP-5243 Compliance · Engineering · Remediation LITHOLOGIC / SOIL BORING LOG Logged By: BEN BELILL Method: HOLLOW STEM AUGER Lat/Long: 32.33554, -103.82771 Field Screening: CHLORIDES, TPH, BTEX, Hole Diameter: 8" Total Depth: 30' GRO, MRO, and DRO. Comment All Chloride test include a 60% error factor. Staining Sample Depth Lithology/Remarks (ft. bgs.) Depth 24 SP Silty SAND, dry, light boun -red, poorly 75' 275.2 4.7 BHO6D 25 0 graded, f.-m., no odor. 26 27 28 29 SAA (SAME AS Above) SP BHOGE 130 236,8 5,2 D 30 31 32 33 34 35



View of the open excavation.

Project: 012918003	XTO Energy, Inc. James Ranch Unit #10 Battery	LTZ
April 9, 2019	Photographic Log	Advancing Opportunity



View of the open excavation.

Project: 012918003	XTO Energy, Inc. James Ranch Unit #10 Battery	LIE
April 9, 2019	Photographic Log	Advancing Opportunity

Bratcher, Mike, EMNRD

From: Hamlet, Robert, EMNRD

Sent: Wednesday, April 24, 2019 9:22 AM

To: Adrian Baker

Cc: Ashley Ager; Littrell, Kyle; Bratcher, Mike, EMNRD; Venegas, Victoria, EMNRD; caweaver@blm.gov;

jamos@blm.gov; Billings, Bradford, EMNRD; 'jamos@blm.gov'; McKinney, Deborah

Subject: RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Adrian,

I'm glad that you removed the tank battery. The depth of contamination on this site is significant. A couple of things need to be addressed. First, the OCD needs soil samples taken on the boreholes at 5 ft increments to a depth the organics are under the limit. We need a clearer picture of the whole interval, not just at 20 and 42 ft. Essentially, the site hasn't been fully delineated if the bottom sample is still "hot". Second, the depth of the contamination on this site might require close inspection of the tanks to verify their durability.

Please let me know if you have any questions.

Thanks,

Robert J Hamlet
State of New Mexico
Energy, Minerals, and Natural Resources
Oil Conservation Division
811 S. First St., Artesia NM 88210
(575) 840-5963
Robert.Hamlet@state.nm.us

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

From: Adrian Baker <abaker@ltenv.com> Sent: Friday, April 12, 2019 3:25 PM

To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>;

Venegas, Victoria, EMNRD < Victoria. Venegas@state.nm.us>; caweaver@blm.gov; jamos@blm.gov

Cc: Ashley Ager <aager@ltenv.com>; Littrell, Kyle <Kyle_Littrell@xtoenergy.com> **Subject:** [EXT] Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Importance: High

All,

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Thank you





Adrian Baker
Project Geologist/Office Manager
432.894.5641 *cell*432.704.5178 *direct*3300 N "A" Street, Building 1, Unit 103, Midland, TX 79705
www.ltenv.com



Think before you print. <u>Click for our email disclosure</u>.

Bratcher, Mike, EMNRD

From: Weaver, Crystal <caweaver@blm.gov>

Sent: Friday, April 26, 2019 1:45 PM **To:** adrian_baker@xtoenergy.com

Cc: Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; Venegas, Victoria, EMNRD; jamos@blm.gov; Ashley

Ager; Littrell, Kyle

Subject: [EXT] Re: [EXTERNAL] Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Hello all,

BLM concurs with OCD that prior to any further authorizations that additional delineation and more concise intervals of data would be required.

Why was delineation stopped at PH02A at a depth of 42' when lab results showed 92.3mg/kg for total BTEX and 6140mg/kg for total TPH? The work plan documents LTE's site characterization assessment and states that due to site specific factors a full delineation of the most stringent level is required for this project (documented as referencing OCD's Table 1 from their spill rule under the category of <50 feet ground water).

Also I cross checked the depth to ground water data myself. For this area it was found that while the work plan did mention depth to groundwater data for well C-2492-POD2 being depth to water (dtw) of 125 ft bgs, however, the work plan failed to mention well C-2492 which is closer to the spill site (but not very far from C-2492-POD2) had recorded depth to water at 85 ft bgs and the difference in elevation of surface from the location of the spill and the location of that well is something approx. to 10ft. according to what Google Earth states (accuracy on elevation is debatable). Installation of triangulated placement of monitoring wells may need to be considered here if for no other reason then to at least rule out the possibility that groundwater impact occurred.

BLM interpreted that the review of this work plan was urgent due to the tank battery currently being removed. However, BLM also interprets that since the tank battery has been removed that XTO should take advantage of the opportunity to further investigate the area both vertically and horizontally where the tanks once were since it can be derived from the data that residual fluid loss over time may have likely been a concern here regarding how much contaminants are present at the depths shown. Replacement of the battery in this same exact spot on the pad will most likely not be something that BLM would authorize anytime soon. Therefore, relocation of this battery appears to be appropriate to discuss if there is urgency to put things back into production currently while the battery's original location receives further attention.

In addition regarding further investigation concerns, BLM would like to request that more representative investigation efforts regarding delineation and sampling be made around the area demarked by the black X (on the provided site map) that indicates the approx. origination of the other two points of release for the older releases. SS1 showed high TPH 8300mg/kg and total BTEX 139mg/kg at the 0.5' increment and then no data around that area was further provided.

Finally, although delineation is still not complete, currently as things stand, the remediation solution prescribed for this release does not seem adequate in regards to being the most effective for mitigating this site. Additional or alternate proposed efforts will need to be provided.

If further questions or concerns are needing to be addressed with the BLM please contact myself or Jim Amos.

Thank you,

Crystal Weaver

Environmental Protection Specialist

BLM - Carlsbad, NM Desk: 575-234-5943 Cell: 575-200-0426

caweaver@blm.gov

BLM Carlsbad Field Office 620 E. Greene Street Carlsbad NM 88220

"3 percent of the water on this planet is considered freshwater. Of that 3 percent only 1 percent is considered accessible, meaning the majority of the remaining 2 percent is trapped in glaciers or snowfields." - National Geographic

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On Fri, Apr 12, 2019 at 3:27 PM Adrian Baker <abaker@ltenv.com> wrote:

All,

Attached is a Work Plan for a recent release and two historical releases at JRU 10/2RP-3179, 2RP-3464, and 2RP-5243. XTO removed the tank battery and needs to replace the tanks as soon as possible for production purposes. Can you please review as quickly as possible?

Thank you





Adrian Baker

Project Geologist/Office Manager

432.894.5641 cell

432.704.5178 direct

3300 N "A" Street, Building 1, Unit 103, Midland, TX 79705

www.ltenv.com





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Bratcher, Mike, EMNRD

From: Ashley Ager <aager@ltenv.com>
Sent: Friday, April 26, 2019 3:00 PM

To: Hamlet, Robert, EMNRD; Baker, Adrian

Cc: Littrell, Kyle; Bratcher, Mike, EMNRD; Venegas, Victoria, EMNRD; caweaver@blm.gov;

jamos@blm.gov; Billings, Bradford, EMNRD; 'jamos@blm.gov'; McKinney, Deborah

Subject: [EXT] RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

All,

I've pulled both Crystal's and Robert's responses into one email so that we could address each comment in one effort. Please see the text in blue below. Although I attempted to respond to each comment, would it be prudent to set up a meeting to work through the issues given the number of comments and concern expressed by the regulators? We'd like to better understand the expectations. Discussing potential options for moving forward is probably easier than emailing back and forth. Would NMOCD and BLM be available for a meeting in the next two weeks?

Thank You, Ashley

Ashley Ager Vice President of Regional Offices

(970) 385-1096 office (970) 946-1093 mobile

From: Weaver, Crystal <caweaver@blm.gov>

Sent: Friday, April 26, 2019 1:45 PM **To:** adrian baker@xtoenergy.com

Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; jamos@blm.gov; Ashley Ager <aager@ltenv.com>; Littrell,

Kyle <Kyle_Littrell@xtoenergy.com>

Subject: Re: [EXTERNAL] Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

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BLM concurs with OCD that prior to any further authorizations that additional delineation and more concise intervals of data would be required.

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PH02 is not the vertical delineation point. PH02 was advanced with a track hoe to the maximum depth possible with the available equipment on site. When total depth of the impacted soil could not be identified, LTE had to abandon the pothole and utilize a drill rig to go deeper. BH01 was drilled with a hollow stem auger rig and is the vertical delineation point in the center of the impacted area. It was drilled to 80 feet bgs, sampled and field screened every 5 feet, and 2 samples were submitted for laboratory analysis – the soil with the highest field screening result at 35 feet bgs and the bottom of the borehole at 80 feet bgs. The sample collected at 80 feet bgs was clean and represents vertical delineation at the Site.

receives further attention.

Also I cross checked the depth to ground water data myself. For this area it was found that while the work plan did mention depth to groundwater data for well C-2492-POD2 being depth to water (dtw) of 125 ft bgs, however, the work plan failed to mention well C-2492 which is closer to the spill site (but not very far from C-2492-POD2) had recorded depth to water at 85 ft bgs and the difference in elevation of surface from the location of the spill and the location of that well is something approx. to 10ft. according to what Google Earth states (accuracy on elevation is debatable). Installation of triangulated placement of monitoring wells may need to be considered here if for no other reason then to at least rule out the possibility that groundwater impact occurred.

BH01 was drilled to 80 feet bgs on site and no saturated sediments representative of the presence of groundwater was

BLM interpreted that the review of this work plan was urgent due to the tank battery currently being removed. However, BLM also interprets that since the tank battery has been removed that XTO should take advantage of the opportunity to further investigate the area both vertically and horizontally where the tanks once were since it can be derived from the data that residual fluid loss over time may have likely been a concern here regarding how much contaminants are present at the depths shown. Replacement of the battery in this same exact spot on the pad will most likely not be something that BLM would authorize anytime soon. Therefore, relocation of this battery appears to be appropriate to discuss if there is urgency to put things back into production currently while the battery's original location

LTE and XTO believe vertical and lateral delineation has been achieved with boreholes BH01 – BH06.

encountered. The borehole was left open for more than 24 hours and no groundwater filled in.

In addition regarding further investigation concerns, BLM would like to request that more representative investigation efforts regarding delineation and sampling be made around the area demarked by the black X (on the provided site map) that indicates the approx. origination of the other two points of release for the older releases. SS1 showed high TPH 8300mg/kg and total BTEX 139mg/kg at the 0.5' increment and then no data around that area was further provided.

All soil represented by soil sample SS1 has been excavated. Soil within the black dashed line has been removed to 4 feet bgs. Subsurface samples near the black X include PH01 at 6' bgs approximately 20 feet to the southwest, BH01, BH05, and BH06 approximately 30 feet to the southeast, northeast, and west respectively. Samples were collected every 5 feet in each of those boreholes for field screening and two samples from each were submitted for laboratory analysis. In addition, excavation sidewall samples nearest the black X, SW02 and SW04, were collected after removing the top four feet of soil and laboratory analytical results of those samples were clean.

Finally, although delineation is still not complete, currently as things stand, the remediation solution prescribed for this release does not seem adequate in regards to being the most effective for mitigating this site. Additional or alternate proposed efforts will need to be provided.

Soil impact extends from approximately 4 feet to 75 feet bgs. The depth of impacted soil makes excavation/removal impractical due to the benching and shoring that would be required. Disturbance of unaffected areas would be significant and would result in additional environmental impact. The affected soil is characterized by both elevated hydrocarbons and chloride. While the hydrocarbons can be addressed in situ, the chloride cannot. Based on the depth of the impact, presence of elevated chloride, and documentation of clean soil above groundwater, LTE proposed capping the remaining impact and leaving it in place. If that plan is not acceptable, would BLM consider *in situ* measures that only address hydrocarbon concentrations and not chloride, or does BLM expect excavation of the soil to the depths identified?

If further questions or concerns are needing to be addressed with the BLM please contact myself or Jim Amos.

Thank you,

Crystal Weaver

Environmental Protection Specialist

BLM - Carlsbad, NM Desk: 575-234-5943 Cell: 575-200-0426 caweaver@blm.gov

BLM Carlsbad Field Office 620 E. Greene Street Carlsbad NM 88220

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From: Hamlet, Robert, EMNRD < Robert. Hamlet@state.nm.us>

Sent: Wednesday, April 24, 2019 9:22 AM **To:** Adrian Baker abaker@ltenv.com

Cc: Ashley Ager <aager@ltenv.com>; Littrell, Kyle <Kyle_Littrell@xtoenergy.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; caweaver@blm.gov; jamos@blm.gov; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; 'jamos@blm.gov' <jamos@blm.gov>; McKinney, Deborah <dmckinne@blm.gov>

Trickinine y, beboran vaniekinine @ bini.gov

Subject: RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Adrian,

I'm glad that you removed the tank battery. The depth of contamination on this site is significant. A couple of things need to be addressed. First, the OCD needs soil samples taken on the boreholes at 5 ft increments to a depth the organics are under the limit. We need a clearer picture of the whole interval, not just at 20 and 42 ft. Essentially, the site hasn't been fully delineated if the bottom sample is still "hot". Second, the depth of the contamination on this site might require close inspection of the tanks to verify their durability.

We agree that data from the potholes did not delineate the impacted soil, so we utilized a drill rig to delineate. BH01, drilled at the center of the release footprint, documented vertical delineation with a clean sample obtained from 80 feet bgs. A borehole log for BH01 is included in the report and field screening with the laboratory analytical data indicate the soil is impacted from just below 4' bgs to approximately 75' bgs. All boreholes (BH01 through BH06) were sampled every 5 feet, described, and field screened. We conducted laboratory analysis on the samples collected from the intervals with the highest field screening result and from the bottom of each borehole. Lateral delineation was achieved with boreholes BH02 through BH06. The initial potholing data is only presented to document all work conducted on site and to supplement borehole data within the impacted area.

Regarding the comment about tank inspection, are you asking that we provide construction information about the new tanks that will be set above the impacted area?

XTO intends to replace the problematic water tank and all other tanks will be integrity tested prior to reinstallation.

Please let me know if you have any questions.

Thanks,

Robert J Hamlet
State of New Mexico
Energy, Minerals, and Natural Resources
Oil Conservation Division
811 S. First St., Artesia NM 88210
(575) 840-5963
Robert.Hamlet@state.nm.us

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From: Adrian Baker abaker@ltenv.com Sent: Friday, April 12, 2019 3:25 PM

To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>;

Venegas, Victoria, EMNRD < Victoria.Venegas@state.nm.us; caweaver@blm.gov; jamos@blm.gov; ja

Cc: Ashley Ager <aager@ltenv.com>; Littrell, Kyle <<u>Kyle_Littrell@xtoenergy.com</u>> Subject: [EXT] Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Importance: High

All,

Attached is a Work Plan for a recent release and two historical releases at JRU 10/2RP-3179, 2RP-3464, and 2RP-5243. XTO removed the tank battery and needs to replace the tanks as soon as possible for production purposes. Can you please review as quickly as possible?

Thank you





Adrian Baker

Project Geologist/Office Manager

432.894.5641 *cell*

432.704.5178 direct

3300 N "A" Street, Building 1, Unit 103, Midland, TX 79705

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Bratcher, Mike, EMNRD

From: Weaver, Crystal <caweaver@blm.gov>
Sent: Sunday, April 28, 2019 9:47 AM

To: Ashley Ager (aager@ltenv.com)

Cc: Hamlet, Robert, EMNRD; adrian_baker@xtoenergy.com; Littrell, Kyle; Bratcher, Mike, EMNRD;

Venegas, Victoria, EMNRD; Billings, Bradford, EMNRD; jamos@blm.gov; McKinney, Deborah

Subject: [EXT] Re: [EXTERNAL] RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Attachments: image004.png; image003.png; image005.jpg; image001.png; image002.png

Hello all,

A meeting would be fine. This week is pretty busy at the BLM internally, with a lot of required safety training going on this week. Perhaps the week after would be best for us.

However, I will say BLM understands that depth was pursued at the 80' reach but it wasn't in the same areas where the impact was showing. For example the 42' impact was next to the tank farthest on the end yet the 80' was pursued in an area next to the tank in the middle and again 80' was pursued at a point along the perimeter. Why not where the 42' area had revealed high numbers? Also same with the question about SS1. BLM sees that 4ft. depth was pursued for excavation for that whole area demarked by the black dashing but no bottom hole samples are shown aside from around the perimeter of that area. That is the questions we have about this. If the tank on the east end leaked ever for an extended period of time we would never be certain regarding potential ground water impact for that area cause the contamination trail was not concluded on in that area. If XTO has an explanation for why further delineation didn't happen in that area we would be welcome to hearing it.

I hope that helped paint the picture of what we are seeing. I understand that being the folks that did the work you know what you know but us being the folks that review it, we can only get what we can from the info there.

If XTO and LTE still require a meeting to further discuss this as stated BLM is able and willing hopefully next week May 6-10.

Thank you,

On Fri, Apr 26, 2019, 3:00 PM Ashley Ager <aager@ltenv.com> wrote:

ΑII,

I've pulled both Crystal's and Robert's responses into one email so that we could address each comment in one effort. Please see the text in blue below. Although I attempted to respond to each comment, would it be prudent to set up a meeting to work through the issues given the number of comments and concern expressed by the regulators? We'd like to better understand the expectations. Discussing potential options for moving forward is probably easier than emailing back and forth. Would NMOCD and BLM be available for a meeting in the next two weeks?

ce	eived by OCD: 9/12/2024 2:07:20 PM	Page 218
	Thank You,	
	Ashley	
	Ashley Ager	
	Vice President of Regional Offices	
	(970) 385-1096 office	
	(970) 946-1093 mobile	
	From: Weaver, Crystal < caweaver@blm.gov >	
	Sent: Friday, April 26, 2019 1:45 PM To: adrian baker@xtoenergy.com	
	Cc: Bratcher, Mike, EMNRD < <u>mike.bratcher@state.nm.us</u> >; Hamlet, Robert, EMNRD < <u>Robert.Hamlet@state.</u>	nm.us>:
	Venegas, Victoria, EMNRD < <u>Victoria.Venegas@state.nm.us</u> >; <u>jamos@blm.gov</u> ; Ashley Ager < <u>aager@ltenv.cor</u>	
	Kyle < Kyle Littrell@xtoenergy.com >	
	Subject: Re: [EXTERNAL] Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243	
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If further questions or concerns are needing to be addressed with the BLM please contact myself or Jim Amos.

Thank you,

Crystal Weaver

Environmental Protection Specialist

BLM - Carlsbad, NM

Desk: 575-234-5943

Cell: 575-200-0426

caweaver@blm.gov

BLM Carlsbad Field Office

620 E. Greene Street

Carlsbad NM 88220

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From: Hamlet, Robert, EMNRD < Robert. Hamlet@state.nm.us>

Sent: Wednesday, April 24, 2019 9:22 AM **To:** Adrian Baker abaker@ltenv.com

Cc: Ashley Ager aager@ltenv.com; Littrell, Kyle < Kyle Littrell@xtoenergy.com; Bratcher, Mike, EMNRD < mike.bratcher@state.nm.us; Venegas, Victoria, EMNRD < Victoria.Venegas@state.nm.us; caweaver@blm.gov; jamos@blm.gov' jamos@blm.gov' jamos@blm.gov' jamos@blm.gov' jamos@blm.gov' jamos@blm.gov' <a href="mailto:jamos@blm

McKinney, Deborah < dmckinne@blm.gov>

Subject: RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Adrian,

I'm glad that you removed the tank battery. The depth of contamination on this site is significant. A couple of things need to be addressed. First, the OCD needs soil samples taken on the boreholes at 5 ft increments to a depth the organics are under the limit. We need a clearer picture of the whole interval, not just at 20 and 42 ft. Essentially, the site hasn't been fully delineated if the bottom sample is still "hot". Second, the depth of the contamination on this site might require close inspection of the tanks to verify their durability.

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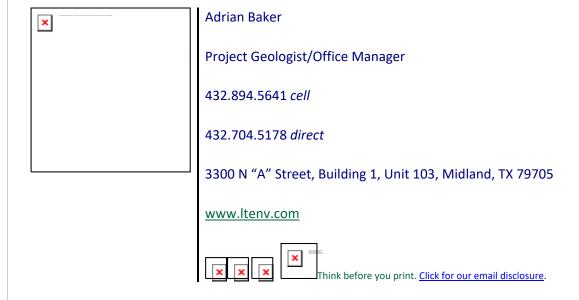
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XTO intends to replace the problematic water tank and all other tanks will be integrity tested prior to reinstallation.

Please let me know if you have any questions.
Thanks,
Robert J Hamlet
State of New Mexico
Energy, Minerals, and Natural Resources
Oil Conservation Division
811 S. First St., Artesia NM 88210
(575) 840-5963
Robert.Hamlet@state.nm.us
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From: Adrian Baker Sent: Friday, April 12, 2019 3:25 PM To: Bratcher, Mike, EMNRD mike.bratcher@state.nm.us; Hamlet, Robert, EMNRD Robert.Hamlet@state.nm.us;
Venegas, Victoria, EMNRD < Victoria. Venegas@state.nm.us>; caweaver@blm.gov; jamos@blm.gov Cc: Ashley Ager < ager@lteny.com>: Littrell, Kyle < Kyle, Littrell@ytoenergy.com>
Venegas, Victoria, EMNRD < Victoria. Venegas@state.nm.us >; caweaver@blm.gov; jamos@blm.gov Cc: Ashley Ager < aager@ltenv.com >; Littrell, Kyle < Kyle_Littrell@xtoenergy.com > Subject: [EXT] Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243 Importance: High
Cc: Ashley Ager aager@ltenv.com ; Littrell, Kyle <kyle a="" littrell@xtoenergy.com<=""> Subject: [EXT] Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243 Importance: High</kyle>
Cc: Ashley Ager aager@ltenv.com ; Littrell, Kyle < Kyle Littrell@xtoenergy.com > Subject: [EXT] Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Attached is a Work Plan for a recent release and two historical releases at JRU 10/2RP-3179, 2RP-3464, and 2RP-5243. XTO removed the tank battery and needs to replace the tanks as soon as possible for production purposes. Can you please review as quickly as possible?

Thank you



Bratcher, Mike, EMNRD

From: Bratcher, Mike, EMNRD

Sent: Monday, April 29, 2019 8:23 AM

To: Ashley Ager (aager@ltenv.com); caweaver@blm.gov

Cc: Hamlet, Robert, EMNRD; adrian_baker@xtoenergy.com; Littrell, Kyle; Venegas, Victoria, EMNRD;

Billings, Bradford, EMNRD; jamos@blm.gov; McKinney, Deborah

Subject: RE: [EXT] Re: [EXTERNAL] RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Good Morning,

A meeting to discuss this site may be appropriate at some point, however, it may be problematic to get it scheduled. I will attempt to provide an outline of what minimally, OCD is going to require at this site. If BLM is in agreement, this may allow XTO to have some idea of a path forward, and continue the work and/or scheduling as required.

- Actual depth to groundwater will need to be established, by installation of a monitor well. I would suggest
 completing it in a manner that will allow for potential long term monitoring. There may some data available that
 establishes gradient. If not, this will need to be established by the installation of other water well borings as
 necessary to establish gradient. The completed water well needs to be installed down gradient, and in very close
 proximity to the impacted battery site.
- A more complete delineation of impact needs to be performed. OCD would request a minimum of two borings be installed in the battery area, in what would be the more highly impacted areas. Samples are to be obtained at five feet intervals throughout the delineation. The purpose is to have a more precise idea of the levels and volume of hydrocarbon impact that exist. Sampling for chloride will be required as well.
- Based on data already obtained, a four feet excavation and liner installation will not be an acceptable remedial
 proposal for this site. A deeper excavation will likely be required, along with a proposed method for mitigating
 the deeper impact that may not be practicable to excavate. Of particular concern, is the lighter end
 hydrocarbons that have been determined to exist at significant depths.
- I would expect this to potentially be a long term project, so if XTO needs to return the well to production, the battery will need to be rebuilt in a different area of the well pad. Allow for potential deep excavations and monitoring at the impacted site when deciding on position of a new battery, if that is what XTO chooses to do. BLM will need to be consulted if additional surface disturbance is required.

If you have any questions or concerns, please let me know, but hopefully this will allow work to continue on this project. Please coordinate with OCD and BLM moving forward. If XTO still believes a meeting is required prior to moving forward, please advise and we will attempt to accommodate as soon as possible.

Thank you,

Mike Bratcher NMOCD District 2 811 South First Street Artesia, NM 88210 575~748~1283 Ext 108

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Weaver, Crystal <caweaver@blm.gov>

Sent: Sunday, April 28, 2019 9:47 AM

To: Ashley Ager (aager@ltenv.com) <aager@ltenv.com>

Cc: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; adrian_baker@xtoenergy.com; Littrell, Kyle <Kyle_Littrell@xtoenergy.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; jamos@blm.gov; McKinney, Deborah <dmckinne@blm.gov>

Subject: [EXT] Re: [EXTERNAL] RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

Hello all,

A meeting would be fine. This week is pretty busy at the BLM internally, with a lot of required safety training going on this week. Perhaps the week after would be best for us.

However, I will say BLM understands that depth was pursued at the 80' reach but it wasn't in the same areas where the impact was showing. For example the 42' impact was next to the tank farthest on the end yet the 80' was pursued in an area next to the tank in the middle and again 80' was pursued at a point along the perimeter. Why not where the 42' area had revealed high numbers? Also same with the question about SS1. BLM sees that 4ft. depth was pursued for excavation for that whole area demarked by the black dashing but no bottom hole samples are shown aside from around the perimeter of that area. That is the questions we have about this. If the tank on the east end leaked ever for an extended period of time we would never be certain regarding potential ground water impact for that area cause the contamination trail was not concluded on in that area. If XTO has an explanation for why further delineation didn't happen in that area we would be welcome to hearing it.

I hope that helped paint the picture of what we are seeing. I understand that being the folks that did the work you know what you know but us being the folks that review it, we can only get what we can from the info there.

If XTO and LTE still require a meeting to further discuss this as stated BLM is able and willing hopefully next week May 6-10.

Thank you,

On Fri, Apr 26, 2019, 3:00 PM Ashley Ager <aager@ltenv.com> wrote:

All,

I've pulled both Crystal's and Robert's responses into one email so that we could address each comment in one effort. Please see the text in blue below. Although I attempted to respond to each comment, would it be prudent to set up a meeting to work through the issues given the number of comments and concern expressed by the regulators? We'd like to better understand the expectations. Discussing potential options for moving forward is probably easier than emailing back and forth. Would NMOCD and BLM be available for a meeting in the next two weeks?

C	erved by OCD: 9/12/2024 2:0/:20 PM	Page 226
	Thank You,	
	Ashley	
	Ashley Ager	
	Vice President of Regional Offices	
	(970) 385-1096 office	
	(970) 946-1093 mobile	
	From: Weaver, Crystal < caweaver@blm.gov>	
	Sent: Friday, April 26, 2019 1:45 PM	
	To: adrian baker@xtoenergy.com	
	Cc: Bratcher, Mike, EMNRD < mike.bratcher@state.nm.us >; Hamlet, Robert, EMNRD < Robert.Hamlet@state.r	
	Venegas, Victoria, EMNRD < Victoria. Venegas@state.nm.us >; jamos@blm.gov; Ashley Ager < aager@ltenv.cor	<u>n</u> >; Littreii,
	Kyle < Kyle < Kyle Littrell@xtoenergy.com Subject: Re: [EXTERNAL] Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243	
	Subject. No. [Extension] organic work hair sho to zor -3173, zhr -3404, and zhr -3243	

Hello all,

BLM concurs with OCD that prior to any further authorizations that additional delineation and more concise intervals of data would be required.

Why was delineation stopped at PH02A at a depth of 42' when lab results showed 92.3mg/kg for total BTEX and 6140mg/kg for total TPH? The work plan documents LTE's site characterization assessment and states that due to site specific factors a full delineation of the most stringent level is required for this project (documented as referencing OCD's Table 1 from their spill rule under the category of <50 feet ground water).

PH02 is not the vertical delineation point. PH02 was advanced with a track hoe to the maximum depth possible with the available equipment on site. When total depth of the impacted soil could not be identified, LTE had to abandon the pothole and utilize a drill rig to go deeper. BH01 was drilled with a hollow stem auger rig and is the vertical delineation point in the center of the impacted area. It was drilled to 80 feet bgs, sampled and field screened every 5 feet, and 2 samples were submitted for laboratory analysis - the soil with the highest field screening result at 35 feet bgs and the bottom of the borehole at 80 feet bgs. The sample collected at 80 feet bgs was clean and represents vertical delineation at the Site.

Also I cross checked the depth to ground water data myself. For this area it was found that while the work plan did mention depth to groundwater data for well C-2492-POD2 being depth to water (dtw) of 125 ft bgs, however, the work plan failed to mention well C-2492 which is closer to the spill site (but not very far from C-2492-POD2) had recorded depth to water at 85 ft bgs and the difference in elevation of surface from the location of the spill and the location of that well is something approx. to 10ft. according to what Google Earth states (accuracy on elevation is debatable). Installation of triangulated placement of monitoring wells may need to be considered here if for no other reason then to at least rule out the possibility that groundwater impact occurred.

BH01 was drilled to 80 feet bgs on site and no saturated sediments representative of the presence of groundwater was encountered. The borehole was left open for more than 24 hours and no groundwater filled in.

BLM interpreted that the review of this work plan was urgent due to the tank battery currently being removed. However, BLM also interprets that since the tank battery has been removed that XTO should take advantage of the opportunity to further investigate the area both vertically and horizontally where the tanks once were since it can be derived from the data that residual fluid loss over time may have likely been a concern here regarding how much contaminants are present at the depths shown. Replacement of the battery in this same exact spot on the pad will most likely not be something that BLM would authorize anytime soon. Therefore, relocation of this battery appears to be appropriate to discuss if there is urgency to put things back into production currently while the battery's original location receives further attention.

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Subject: RE: Urgent - Work Plan - JRU 10/2RP-3179, 2RP-3464, and 2RP-5243

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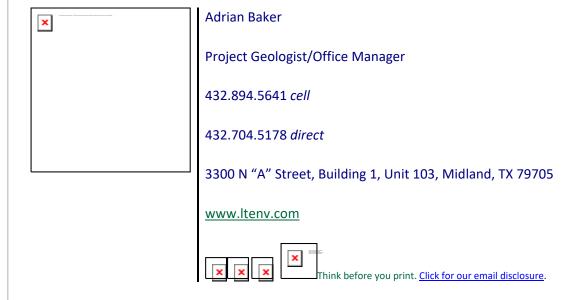
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Importance: High
All
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District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II 811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III 1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 S. St Francis Dr. **Santa Fe, NM 87505**

CONDITIONS

Action 383224

CONDITIONS

Operator:	OGRID:
BOPCO, L.P.	260737
6401 Holiday Hill Rd	Action Number:
Midland, TX 79707	383224
	Action Type:
	[IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
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