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

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1000 0 1 0. 5

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

District IV 1220 S. St. Fran	ncis Dr., Sant	a Fe, NM 8750	5	1220 Sa	anta Fe	e, NM 875	505 Dr.					
			Rel	ease Notifie	cation	and Co	orrective A	ctio	n			
						OPERA'	TOR		Initia	al Report		Final Report
Name of Co	ompany: X	TO Energy	Inc			Contact: Re	x Farnsworth			anteport		mai report
Address: 38	32 Road 31	00. Aztec. N	New Mex	ico 87410		Telephone 1	No.: (505) 333-3	3100		4		
Facility Na	me: OH Ra	andell #5				Facility Typ	e: Gas Well (Ba	asin D	akota)	226	Strain P	
0.0	T. 1	1		NC				_	ADIN	20 045 0	05064	
Surface Ow	ner: Triba	11		Mineral	Jwner				APING	0.: 30-045-0	15964	
				LOCA	ATION	N OF RE	LEASE			N. A.		
Unit Letter	Section	Township	Range	Feet from the	North/	South Line	Feet from the	East/	West Line	County		
D	10	26N	11W	990	F	NL	990		FWL	San Juan		
				Latituda 36 50	65752	Longi	uda 107 0065	52	1.0			
				NAT	TIRE	OF REL	FASE.	52				
Type of Rele	ease Produc	ed Oil / Prod	uced Wate	r	URE	Volume of	Release: 32 5 BF	al.'s	Volume	Recovered (BBL's	1. 1.
Source of Re	elease: 2" D	rain Valve on	Productio	n Tank		Date and H	lour of Occurrence	ce:	Date and	Hour of Dis	covery: 1	/18/2016
						Unknown	Time: Unknown		2:56pm		-	
Was Immedi	ate Notice (Given?	Yes] No 🗌 Not R	equired	If YES, To	Whom? Cory Sn	nith (N	MOCD)			
By Whom? I	Rex Farnswo	orth (EH&S 7	Technician)	1.1.4	Date and H	Iour: 1/19/2016 @) 7:53a	m			
Was a Water	course Read	ched?] Yes 🛛	No		If YES, Vo	olume Impacting t	the Wa	tercourse.	CONS.	DIV DIS	ST. 3
If a Waterco	urse was Im	pacted, Desci	ribe Fully.	*	1					FFR 0	4 2016	
leaked onto NMOCD G is greater th BTEX	the ground duidelines f an 100 fee	d with no flu for the Reme and an arro	ids being diation o byo over	recovered. Th f Leaks, Spills a 1000 feet. This	e 2" dra and Rele set the c	in valve has eases. The si closure stand	been replaced. te was ranked a lard to 5000 ppr	The s 0 due n TPH	to an estin l, 10 ppm b	en ranked a nated depth penzene, an	ccording to grou d 50 ppi	g to the ndwater m total
Describe Arc On 1/19/20 <i>Remediatio</i> I hereby cert regulations a public health should their or the enviro	ea Affected 16, XTO w <i>in Plan</i> . Pl ify that the i ill operators or the envi operations h onment. In a	and Cleanup , vas on-site to ease see the information g are required to ronment. The nave failed to iddition, NMC	Action Tal o perform attached iven above to report an e acceptane adequately OCD accept	cen. * spill assessmen <i>Remediation Pl</i> e is true and comp nd/or file certain r ce of a C-141 repo- v investigate and r otance of a C-141	an for p blete to the release no ort by the remediate report do	ties. Results roposed ren ne best of my otifications a e NMOCD m e contaminationes not reliev	s of the spill ass nediation activit knowledge and u nd perform correc arked as "Initial F on that pose a thr e the operator of	essme ies. indersta ctive ac Report" eat to g respons	nt are outli and that purs tions for rel- does not re ground water sibility for c	ned in the a suant to NM eases which lieve the ope r, surface wa ompliance w	OCD rule may end erator of l tter, huma	es and anger liability an health other
Signature: Printed Nam	e: James Me	cDaniel	ulations.	/		Approved by	OIL CON	SERV peciali	VATION	DIVISIO	C A	5
Title: EH&S	Supervisor		2.5			Approval Dat	e:2/8/201	6	Expiration	Date:		
E-mail Addr	ess: james_1	mcdaniel@xte	oenergy.co	om		Conditions of	Approval:			Attached		
Date: 2-2-20	16	Ph	one: 505-3	33-3701	15.2	See	attaché	13		12.2.		
Attach Addi	itional Shee	ets If Necess	one: 505-3 sary	555-5701	1	WFI	020391	091	1915			1.1

State of New Mexico Energy, Minerals and Natural Resources Department

Susana Martinez Governor

David Martin Cabinet Secretary

Tony Delfin Deputy Cabinet Secretary David R. Catanach, Division Director **Oil Conservation Division**



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.5.11

Application Type:

P&A Drilling/Casing Change Location Change

Recomplete/DHC (For hydraulic fracturing operations review EPA) Underground injection control Guidance #84)

Other: C-141 proposed remediation plan

API WELL # Well Name	Well #	Operator Name	Туре	Stat	County	Surf_Owner	UL	Sec	Twp	N/S	Rng	W/E
30-045-05964-00-00 O H Randel	005	XTO ENERGY, INC	G	A	San Juan	F	D	10	26	N	11	W

Conditions of Approval:

XTO submittal of the initial C-141 has been approved. However, XTO's submittal of the proposed corrective action plan for a passive remediation system for the O H Randel #005 has been denied due to the following condition:

- . Passive in-situ remediation is not an approved method.
- XTO must resubmit for approval a new corrective action plan within 30 days.

If you have any questions please feel free to contact me.

NMOCD Approved by Signature



O H Randel #5

API # 30-045-05964 Unit D, Section 10, Township 26N, Range 11W San Juan County, New Mexico Lat: 36.50657 Long: -107.99655

Remediation Plan

<u>Submitted By:</u> James McDaniel EH&S Supervisor XTO Energy Inc. 505-333-3701

Introduction

On January 18, 2016, a production tank release event was discovered at the O H Randel #5 well site. Approximately 27 barrels of condensate and 5.5 bbls of water were lost when a valve froze on the production tank. All fluids were contained within the bermed area with none being recovered. The site was then ranked a zero (0) pursuant to the NMOCD Guidelines for the Remediation of Leaks, Spills and Releases, setting the closure standard to 5,000 ppm total petroleum hydrocarbons (TPH), 10 ppm Benzene, and 50 ppm total BTEX. The required 24 hour notice was made to Cory Smith with the NMOCD on January 19, 2016. On January 19, 2016, an assessment of the spill area was performed using a hand auger. During the assessment, samples were collected from the spill area at the surface, and intermittently from a soil boring down (BH #1) to approximately 9.5 feet. Samples were analyzed using a photo-ionization detector (PID) for organic vapors. Samples were collected from four (4) different boreholes and analyzed using a PID; see the attached Borehole Diagram. Samples from Borehole (BH) #1 at the surface, BH #1 at 9.5' below ground surface (BGS), and from BH #3 at 2' BGS were taken to the laboratory to be analyzed for benzene and BTEX via USEPA Method 8021, and for total petroleum hydrocarbons (TPH) via USEPA Method 8015. The results of these analysis and PID results of all samples can be referenced in the attached Sample Results table.

Proposed Remediation Activity

Due to the volatile nature of the hydrocarbons present, and the sandy nature of the soil at this location, XTO believes that vent wells with passive air circulation will work well removing hydrocarbon impacts from the soil through enhanced bio-remediation. XTO proposes to install two (2) vent wells in the spill area to 10 feet below ground surface. The vent wells will be completed with slotted PVC to allow airflow into the subsurface. Air circulation will be aided by passive air circulation fans installed on the top of the vent wells. As outlined in the attached *Sample Results* table, impacts are confined to an area inside the berm, approximately 10' deep. The estimated impacted area is approximately 20' x 20' x 10' deep.

Please consider this remediation plan the proposal for remediation activities for the release at the O H Randle #5 well site. With your approval, XTO is prepared to being implementation of this remediation plan immediately.

James McDaniel EH&S Supervisor XTO Energy, Inc. Western Division

SAMPLE RESULTS

Sample Name	Date	PID (ppm)	Benzene (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	Total TPH (mg/kg)
STANDARDS	NA	100	10	50	NA	NA	5,000
BH-1 - Surface	1/19/2016	> 9999	68.5	2388.5	21,800	5,060	26,860
BH-1 - 24" - 30"	1/19/2016	> 9999	NS	NS	NS	NS	NS
BH-1 - 48" - 52"	1/19/2016	> 9999	NS	NS	NS	NS	NS
BH-1 - 5.5'	1/19/2016	> 9999	NS	NS	NS	NS	NS
BH-1 - 6.6'	1/19/2016	> 9999	NS	NS	NS	NS	NS
BH-1 - 8'	1/19/2016	> 9999	NS	NS	NS	NS	NS
BH-1 - 9.5'	1/19/2016	3774	< 0.0588	8.72	242	306	548
BH-2 - 2'	1/19/2016	5.4	NS	NS	NS	NS	NS
BH-2 - 4'	1/19/2016	3.0	NS	NS	NS	NS	NS
BH-2 - 6.5'	1/19/2016	0.5	NS	NS	NS	NS	NS
BH-3 - 2'	1/19/2016	506	> 0.000284	> 0.04259	> 0.567	> 4.54	> 5.107
BH-3 - 3.5'	1/19/2016	54.8	NS	NS	NS	NS	NS
BH-4 - 4'	1/19/2016	51.3	NS	NS	NS	NS	NS
BH-4 - 7.5'	1/19/2016	7.6	NS	NS	NS	NS	NS

Remediation Diagram

Well Name:FField:SSerial Number:LAPI #SSection:N

Randel O H # 5 San Juan County NM Lease # NMSF-03153, 30-045-05964 NW/NW Sec. 10 (D), T-26N, R-11W





Drainage



Borehole Diagram



Gate

O Borehole Locations

Spill Area



ANALYTICAL REPORT

January 27, 2016



XTO Energy - San Juan Division

Sample Delivery Group: Samples Received: Project Number: Description: Site: Report To:

L812910 01/20/2016 30-045-05964 Spill OH RANDELL #5 **Rex Farnsworth** 382 County Road 3100 Aztec, NM 87410

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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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

FARRF-011916-1039 SURFACE L812910-01 Solid			Collected by Rex Farnsworth	Collected date/time 01/19/16 10:39	Received date/time 01/20/16 14:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG843655	40	01/21/16 00:54	01/21/16 20:33	KLM
Total Solids by Method 2540 G-2011	WG843814	1	01/21/16 11:26	01/21/16 11:35	MEL
Volatile Organic Compounds (GC) by Method 8015/8021	WG844651	5000	01/25/16 23:00	01/26/16 14:21	BMB
Wet Chemistry by Method 9056A	WG843398	1	01/21/16 01:25	01/21/16 17:55	CM
FARRF-011916-1146 16FT5IN DG@2IN L812910-02	Solid		Collected by Rex Farnsworth	Collected date/time 01/19/16 11:46	Received date/time 01/20/16 14:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG843655	1	01/21/16 00:54	01/21/16 15:27	DMG
Total Solids by Method 2540 G-2011	WG843814	1	01/21/16 11:26	01/21/16 11:35	MEL
Volatile Organic Compounds (GC) by Method 8015/8021	WG843564	5	01/20/16 16:32	01/21/16 11:32	JHH
Wet Chemistry by Method 9056A	WG843398	1	01/21/16 01:25	01/21/16 18:18	СМ
FARRF-011916-246 BV@9FT4IN L812910-03 Solid	1		Collected by Rex Farnsworth	Collected date/time 01/19/16 02:46	Received date/time 01/20/16 14:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG843655	1	01/21/16 00:54	01/21/16 13:44	DMG
Total Solids by Method 2540 G-2011	WG843814	1	01/21/16 11:26	01/21/16 11:35	MEL
Volatile Organic Compounds (GC) by Method 8015/8021	WG843564	100	01/20/16 16:32	01/21/16 21:55	HHL
Wet Chemistry by Method 9056A	WG843398	1	01/21/16 01:25	01/21/16 18:41	CM

Cp ²Tc ³Ss ⁴Cn ⁵Sr ⁶Qc ⁷Gl ⁸Al

Sc

-

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. 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.

Dapline R Richards

Daphne Richards Technical Service Representative

DATE/TIME: 01/27/16 14:37

PAGE: 4 of 15 FARRF-011916-1039 SURFACE Collected date/time: 01/19/16 10:39

SAMPLE RESULTS - 01 L812910

⁵Sr

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Cp
Analyte	%			date / time		2
Total Solids	83.3		1	01/21/2016 11:35	WG843814	² Tc

Wet Chemistry by Method 9056A

Wet Chemistry	by Method 9056A						³ Ss
	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg		date / time		⁴ Cn
Chloride	144		12.0	1	01/21/2016 17:55	WG843398	

Volatile Organic Compounds (GC) by Method 8015/8021

1.6	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch	6
Analyte	mg/kg		mg/kg		date / time		Qc
Benzene	68.5		3.00	5000	01/26/2016 14:21	WG844651	
Toluene	625		30.0	5000	01/26/2016 14:21	WG844651	7 GI
Ethylbenzene	155		3.00	5000	01/26/2016 14:21	WG844651	0
Total Xylene	1540		9.00	5000	01/26/2016 14:21	WG844651	3
TPH (GC/FID) Low Fraction	21800		600	5000	01/26/2016 14:21	WG844651	AI
(S) a,a,a-Trifluorotoluene(FID)	97.5		59.0-128		01/26/2016 14:21	WG844651	ST.
(S) a,a,a-Trifluorotoluene(PID)	103		54.0-144		01/26/2016 14:21	WG844651	Sc

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

The Rive Televine	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch	1.2.5
Analyte	mg/kg		mg/kg		date / time		
TPH (GC/FID) High Fraction	5060		192	40	01/21/2016 20:33	WG843655	
(S) o-Terphenyl	71.6	<u>J7</u>	50.0-150		01/21/2016 20:33	WG843655	

SAMPLE RESULTS - 02

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	%			date / time		
Total Solids	88.1		1	01/21/2016 11:35	WG843814	² Tc

Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg		date / time		
Chloride	23.8		11.3	1	01/21/2016 18:18	WG843398	

Volatile Organic Compounds (GC) by Method 8015/8021

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg		date / time		
Chloride	23.8		11.3	1	01/21/2016 18:18	WG843398	
Volatilo Organic Comp	ounds (CC) k	Mathad	0015/0021				
volatile Organic Comp	Jourius (GC) L	by Methou	0015/0021				
	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg		date / time		
Benzene	ND		0.00284	5	01/21/2016 11:32	WG843564	
Toluene	ND		0.0284	5	01/21/2016 11:32	WG843564	
Ethylbenzene	ND		0.00284	5	01/21/2016 11:32	WG843564	
Total Xylene	ND		0.00851	5	01/21/2016 11:32	WG843564	
TPH (GC/FID) Low Fraction	ND		0.567	5	01/21/2016 11:32	WG843564	
(S) a,a,a-Trifluorotoluene(FID)	96.0		59.0-128		01/21/2016 11:32	WG843564	
(S) a,a,a-Trifluorotoluene(PID)	101		54.0-144		01/21/2016 11:32	WG843564	

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

A START SALES	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch	2. Small
Analyte	mg/kg		mg/kg		date / time		
TPH (GC/FID) High Fraction	ND	4	4.54	1	01/21/2016 15:27	WG843655	
(S) o-Terphenyl	67.4		50.0-150		01/21/2016 15:27	WG843655	

FARRF-011916-246 BV@9FT4IN Collected date/time: 01/19/16 02:46

SAMPLE RESULTS - 03

Ss

Cn

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Cp
Analyte	%			date / time		
Total Solids	85.0		1	01/21/2016 11:35	WG843814	Tc

Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Chloride	118		11.8	1	01/21/2016 18:41	WG843398

Volatile Organic Compounds (GC) by Method 8015/8021

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch	G
Analyte	mg/kg		mg/kg		date / time		°Qc
Benzene	ND		0.0588	100	01/21/2016 21:55	WG843564	_
Toluene	ND		0.588	100	01/21/2016 21:55	WG843564	7
Ethylbenzene	1.40		0.0588	100	01/21/2016 21:55	WG843564	G
Total Xylene	7.32		0.176	100	01/21/2016 21:55	WG843564	E
TPH (GC/FID) Low Fraction	242		11.8	100	01/21/2016 21:55	WG843564	AI
(S) a,a,a-Trifluorotoluene(FID)	97.5		59.0-128		01/21/2016 21:55	WG843564	
(S) a,a,a-Trifluorotoluene(PID)	102		54.0-144		01/21/2016 21:55	WG843564	⁹ Sc

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch	The second second
Analyte	mg/kg		mg/kg		date / time		
TPH (GC/FID) High Fraction	306		4.70	1	01/21/2016 13:44	WG843655	
(S) o-Terphenyl	80.4		50.0-150		01/21/2016 13:44	WG843655	

WG843814

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

GI

A

Sc

Total Solids by Method 2540 G-2011

Method Blank (MB)

Method Blank (MB)				1 Cm
(MB) 01/21/16 11:35			Take (
	MB Result MB Qualif	ier MB RDL		2
Analyte	%	%		Tc
Total Solids	0.000800			
				³ Ss

L812910-01 Original Sample (OS) • Duplicate (DUP)

L812910-01 Origin	al Sample (OS) • [al Sample (OS) • Duplicate (DUP)									
(OS) 01/21/16 11:35 • (DUF	9) 01/21/16 11:35	1. 1 E	100	26.35		The state of the s		Cn			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits					
Analyte	%	%		%		%		Sr			
Total Solids	83.3	84.4	1	1.29	United Schemen and Station	5					

Laboratory Control Sample (LCS)

(LCS) 01/21/16 11:35					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

ACCOUNT:	PROJECT:	SDG:	DATE/TIME:	PAGE:
XTO Energy - San Juan Division	30-045-05964	L812910	01/27/16 14:37	8 of 15

WG843398	
Wet Chemistry by Method 9056/	A

QUALITY CONTROL SUMMARY

⁴Cn

Sr

Sc

Method Blank (MB)

(MB) 01/21/16 05:27	CONTRACTOR OF STREET		Ср
	MB Result MB Qu	alifier MB RDL	
Analyte	mg/kg	mg/kg	Tc
Chloride	ND	10.0	
			³ Ss

L811815-01 Original Sample (OS) • Duplicate (DUP)

(OS) 01/21/16 09:31 · (DUP) 01/21/1	6 09:54	1.0.0	1.00		10 million - 10			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits		
Analyte	mg/kg	mg/kg		%		%		
Chloride	73.0	73.4	1	1		15		

L812774-05 Original Sample (OS) • Duplicate (DUP)

(OS) 01/21/16 15-14 . (D	UP) 01/21/16 15:37						Na a	⁷ GI
(00) 012010 10111 (0	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits		
Analyte	mg/kg	mg/kg		%		%		S AI
Chloride	32.9	33.6	1	2	1.00	15		

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

	Coike Amount	LCC Decult	LCCD Decult	LCC Dee		Dee Limite	100 0 1000		000	DDD Line	
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LUSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualmer	RPD	RPD LIMITS	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
Chloride	200	214	217	107	108	80-120			1	15	

L811815-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 01/21/16 10:16 • (MS) 01/21/16 10:39 • (MSD) 01/21/16 11:02

	Spike Amou	int 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	57.7	501	503	89	89	1	80-120		19. I.	0	15

	The second statement of the se			
ACCOUNT:	PROJECT:	SDG:	DATE/TIME:	PAGE:
XTO Energy - San Juan Division	30-045-05964	L812910	01/27/16 14:37	9 of 15

WG843564 Volatile Organic Compounds (GC) by Method 8015/8021

QUALITY CONTROL SUMMARY

L812910-02,03

Cp.

TC

Ss

Cn

Sr

Method Blank (MB)

(S) a,a,a-Trifluorotoluene(FID)

(S) a,a,a-Trifluorotoluene(PID)

(MB) 01/21/16 07:29 **MB** Result **MB** Qualifier MB RDL Analyte mg/kg mg/kg Benzene ND 0.000500 Toluene ND 0.00500 Ethylbenzene ND 0.000500 Total Xylene ND 0.00150 TPH (GC/FID) Low Fraction ND 0.100

59.0-128

54.0-144

97.4

102

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

(LCS) 01/21/16 05:23 · (LCSD) 0	01/21/16 05:49										-
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	GI
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
Benzene	0.0500	0.0429	0.0423	85.8	84.7	70.0-130			1.32	20	3
Toluene	0.0500	0.0444	0.0433	88.8	86.7	70.0-130			2.38	20	AI
Ethylbenzene	0.0500	0.0473	0.0466	94.5	93.3	70.0-130			1.32	20	
Total Xylene	0.150	0.145	0.142	96.3	94.6	70.0-130		Nu Strager	1.84	20	Sc
(S) a,a,a-Trifluorotoluene(FID)				96.8	97.4	59.0-128					
(S) a,a,a-Trifluorotoluene(PID)				101	102	54.0-144					

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

(LCS) 01/21/16 06:39 · (LCSD) 0	1/21/16 08:47									
	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	6.35	5.82	116	106	63.5-137			8.85	20
(S) a,a,a-Trifluorotoluene(FID)				106	106	59.0-128				
(S) a,a,a-Trifluorotoluene(PID)				109	109	54.0-144				

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WG844651

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Ss

Cn

Sr

Volatile Organic Compounds (GC) by Method 8015/8021

Method Blank (MB)

(MB) 01/26/16 13:27				
	MB Result	MB Qualifier	MB RDL	
Analyte	mg/kg		mg/kg	
Benzene	ND	S. F. Kersy	0.000500	
Toluene	ND		0.00500	
Ethylbenzene	ND		0.000500	
Total Xylene	ND		0.00150	
TPH (GC/FID) Low Fraction	ND	1.	0.100	
(S) a,a,a-Trifluorotoluene(FID)	98.3		59.0-128	
(S) a,a,a-Trifluorotoluene(PID)	104		54.0-144	

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

(LCS) 01/26/16 11:21 • (LCSD) 01/	/26/16 11:46										
Analite	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	⁷ GI
Analyte	mg/kg	шу/ку	mg/kg	70	76	70			%	%	
Benzene	0.0500	0.0467	0.0489	93.5	97.9	70.0-130			4.59	20	3
Toluene	0.0500	0.0471	0.0488	94.2	97.5	70.0-130			3.52	20	AI AI
Ethylbenzene	0.0500	0.0485	0.0507	97.1	101	70.0-130		1. 20194	4.38	20	
Total Xylene	0.150	0.148	0.154	98.8	103	70.0-130			3.95	20	Sc
(S) a, a, a-Trifluorotoluene(FID)				97.7	98.1	59.0-128					
(S) a,a,a-Trifluorotoluene(PID)				103	103	54.0-144					1 martin an

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

(LCS) 01/26/16 12:11 · (LCSD) 01/	26/16 12:36									
	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	6.24	6.30	113	115	63.5-137			0.990	20
(S) a,a,a-Trifluorotoluene(FID)				107	107	59.0-128				
(S) a,a,a-Trifluorotoluene(PID)				110	110	54.0-144				

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QUALITY CONTROL SUMMARY

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Tc

Ss

Cn

Sr

Qc

GI

AL

Sc

Method Blank (MR)

Method Blank (MB)			
(MB) 01/21/16 09:38		No. 2010 Participation	
	MB Result MB	Qualifier MB RDL	
Analyte	mg/kg	mg/kg	
TPH (GC/FID) High Fraction	ND	4.00	
(S) o-Terphenyl	87.0	50.0-150	

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

(LCS) 01/21/16 09:49 · (LCSD) 0	1/21/16 10:00								1000	and the second
	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) High Fraction	60.0	47.9	49.2	79.8	81.9	50.0-150			2.68	20
(S) o-Terphenyl				89.5	91.2	50.0-150	Contraction Contraction			

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GLOSSARY OF TERMS

Abbreviations ar	nd Definitions
SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
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.
(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.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.
Qualifier	Description

Surrogate recovery cannot be used for control limit evaluation due to dilution.



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ACCREDITATIONS & LOCATIONS

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
Conneticut	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
lowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky 1	90010	South Dakota	n/a
Kentucky ²	16	Tennessee 14	2006
Louisiana	AI30792	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		

A2LA - ISO 17025	1461.01	AIHA	100789	
A2LA - ISO 170255	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 ^{nh} 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.



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