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DELINEATION WORKPLAN

COG – CITATION X FED COM #001H (Leak Date: 12/6/17)

RP # 1RP-4890 API # 30-025-39960

This delineation workplan and remediation proposal addresses the release associated with RP # 1RP-4890.

The following information includes:

- 1. Scaled digital site map with spill area demarcated and leak point identified along with sample point locations and areas of remediation at appropriate depths.
- 2. GPS information for sample points and sample methodology
- 3. Depth to groundwater information (i.e., pdf of OSE search results and/or copy of Chevron groundwater trend map).
- 4. Laboratory analysis results summary table and original laboratory analysis reports
- 5. A copy of the initial C-141
- 6. Potentially other pertinent information as necessary for site specific purposes.

Based on the information included in this package and the NMOCD guidelines, the following remediation is proposed:

COG will excavate the spill area as depicted on the following site diagram. The entire leak area (pink shade on diagram) will be excavated to a depth of 4 feet then an impermeable liner will be installed in the excavation and backfilled.

The entire site will then be backfilled with clean soil and revegetated (if warranted) to the standards of the appropriate regulatory agency or private surface owner.

All excavated materials will be disposed of at an NMOCD-approved disposal facility.



NMOCD approves of the delineation completed and proposed remediation for 1RP-4890 with one condition: representative confirmation samples from the bottom of the excavated area and sidewalls.



COG, Citation X Fed Com #001H U/L M, Section 8, T19S, R32E Groundwater: 450'



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(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)	(R=POD replaced, O=orpha C=the fil closed)	has been ned, e is	1	(quart (quart	ers are ers are	= 1=NV	W 2=NE est to lar	3=SW 4=S rgest) (1	SE) NAD83 UT	`M in n	neters)	(In feet)	
		POD											
POD Number CP 01656 POD1	Code	Sub- basin CP	County LE	Q Q Q 64 16 4 3 4 3	2 Sec 3 17	Tws 19S	Rng 32E	X 613368	361364	Y 16 🌍	DistanceDepthV 1688	VellDepthWa 70	Water ter Column
										Avera	ge Depth to Water:		
											Minimum Depth:		
											Maximum Depth:		
Record Count: 1													
UTMNAD83 Radiu	is Search (in	meters	<u>:</u>										
Easting (X): 61	2998		North	ning (Y):	3615	5294			Radius:	1700			
The data is furnished by the accuracy, completeness, relia	NMOSE/ISC bility, usabilit	and is acc y, or suita	epted by the bility for an	e recipient y particula	with th r purpo	ne expresse of th	essed und ne data.	lerstanding t	hat the OSE	/ISC ma	ake no warranties, exp	ressed or implied,	concerning the
3/26/18 9:44 AM											WATER COLUN WATER	/IN/ AVERAGE	DEPTH TO

Laboratory Analytical Results Summary Citation X Federal Com #001H

		Sample ID	BH1 @ 0'- 1'	BH1 @ 2'-3'	BH1 @ 4'-5'	BH1 @ 6'-7'	BH1 @ 9'-10'	BH1 @ 14'-15'	BH1 @ 19'-20'	BH1 @ 24'-25'	BH1 @ 29'-30'	BH1 @ 34'-35'	BH1 @ 39'-40'	BH1 @ 49'-50'	BH1 @ 59'-60'	BH1 @ 69'-70'	BH1 @ 74'-75'	BH1 @ 75'	BH1 @ 80'	BH1 @ 85'	BH1 @ 90'
Analyte	Method	Date	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	3/20/18	3/20/18	3/20/18	3/20/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	EPA 8021B		16.2	29	0.0229	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	EPA 8021B		77.8	94.4	0.0295	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	EPA 8021B		56.1	56.9	0.00844	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m,p,-Xylenes	EPA 8021B		87.4	87	0.0124	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	EPA 8021B		31.9	32.3	0.00723	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	EPA 8021B		119	119	0.0196	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	EPA 8021B		269	300	0.0805	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	EPA 300		4740	3540	8310	7980	12200	11800	11700	9880	10800	10600	13300	5210	2850	2560	2240	1210	3050	1510	<25.0
GRO	SW2015 Mod		3820	1980	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
DRO	SW2015 Mod		6520	3130	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
ORO	SW2015 Mod		1650	772	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total TPH	SW2015 Mod		12000	5880	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

		Sample ID	BH2 @ 0'- 1'	BH2 @ 2'-3'	BH2 @ 4'-5'	BH2 @ 6'-7'	BH2 @ 9'-10'	BH2 @ 14'-15'	BH2 @ 19'-20'	BH2 @ 24'-25'	BH2 @ 29'-30'	BH2 @ 34'-35'	BH2 @ 39'-40'	BH2 @ 49'-50'
Analyte	Method	Date	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18	1/8/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	EPA 8021B		<0.00998	<0.202	< 0.00202	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	EPA 8021B		<0.00998	0.231	0.00349	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	EPA 8021B		0.0716	1.33	<0.00202	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m,p,-Xylenes	EPA 8021B		0.168	4.34	< 0.00403	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	EPA 8021B		<0.00998	<0.202	< 0.00202	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	EPA 8021B		0.168	4.34	<0.00202	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	EPA 8021B		0.24	5.9	0.00349	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	EPA 300		4250	2830	10300	14900	11700	8220	6730	3290	3870	4530	2400	91.3
GRO	SW2015 Mod		140	1980	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
DRO	SW2015 Mod		1940	14100	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
ORO	SW2015 Mod		549	3160	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total TPH	SW2015 Mod		2630	19200	<15.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

			BH3 @ 0'-	BH3 @	BH3 @	BH3 @	BH3 @	BH3 @	BH3 @
		Sample ID	1'	2'-3'	4'-5'	6'-7'	9'-10'	14'-15'	19'-20'
Analyte	Method	Date	1/9/18	1/9/18	1/9/18	1/9/18	1/9/18	1/9/18	1/9/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	EPA 8021B		<0.0100	< 0.00992	< 0.00336	n/a	n/a	n/a	n/a
Toluene	EPA 8021B		<0.0100	< 0.00992	< 0.00336	n/a	n/a	n/a	n/a
Ethylbenzene	EPA 8021B		< 0.0100	< 0.00992	< 0.00336	n/a	n/a	n/a	n/a
m,p,-Xylenes	EPA 8021B		<0.0200	<0.0198	<0.00671	n/a	n/a	n/a	n/a
o-Xylene	EPA 8021B		<0.0100	< 0.00992	< 0.00336	n/a	n/a	n/a	n/a
Total Xylenes	EPA 8021B		<0.0100	< 0.00992	< 0.00336	n/a	n/a	n/a	n/a
Total BTEX	EPA 8021B		<0.0100	< 0.00992	< 0.00336	n/a	n/a	n/a	n/a
Chloride	EPA 300		106	17.6	966	5630	4300	548	202
GRO	SW2015 Mod		108	24.2	<15.0	n/a	n/a	n/a	n/a
DRO	SW2015 Mod		3790	3760	<15.0	n/a	n/a	n/a	n/a
ORO	SW2015 Mod		1050	833	<15.0	n/a	n/a	n/a	n/a
Total TPH	SW2015 Mod		4950	4620	<15.0	n/a	n/a	n/a	n/a

		Sample ID	BH4 @ 0'- 1'	BH4 @ 2'-3'	BH4 @ 4'-5'	BH4 @ 6'-7'	BH4 @ 9'-10'	BH4 @ 14'-15'
Analyte	Method	Date	1/9/18	1/9/18	1/9/18	1/9/18	1/9/18	1/9/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	EPA 8021B		<0.00200	<0.00201	0.00548	n/a	n/a	n/a
Toluene	EPA 8021B		<0.00200	0.00234	0.00364	n/a	n/a	n/a
Ethylbenzene	EPA 8021B		<0.00200	<0.00201	<0.00201	n/a	n/a	n/a
m,p,-Xylenes	EPA 8021B		< 0.00399	< 0.00402	< 0.00402	n/a	n/a	n/a
o-Xylene	EPA 8021B		<0.00200	<0.00201	<0.00201	n/a	n/a	n/a
Total Xylenes	EPA 8021B		<0.00200	<0.00201	< 0.00201	n/a	n/a	n/a
Total BTEX	EPA 8021B		<0.00200	0.00234	0.00912	n/a	n/a	n/a
Chloride	EPA 300		301	845	799	401	86.4	112
GRO	SW2015 Mod		<15.0	<15.0	<15.0	n/a	n/a	n/a
DRO	SW2015 Mod		<15.0	<15.0	<15.0	n/a	n/a	n/a
ORO	SW2015 Mod		<15.0	<15.0	<15.0	n/a	n/a	n/a
Total TPH	SW2015 Mod		<15.0	<15.0	<15.0	n/a	n/a	n/a

		Sample ID	SWBH 0'-1'	SWBH @ 2'-3'	SWBH @ 4'-5'
Analyte	Method	Date	1/9/18	1/9/18	1/9/18
			mg/kg	mg/kg	mg/kg
Benzene	EPA 8021B		0.00555	< 0.00199	<0.00201
Toluene	EPA 8021B		0.00317	< 0.00199	<0.00201
Ethylbenzene	EPA 8021B		<0.00199	< 0.00199	<0.00201
m,p,-Xylenes	EPA 8021B		<0.00398	<0.00398	< 0.00402
o-Xylene	EPA 8021B		<0.00199	<0.00199	< 0.00201
Total Xylenes	EPA 8021B		<0.00199	< 0.00199	< 0.00201
Total BTEX	EPA 8021B		0.00872	<0.00199	< 0.00201
Chloride	EPA 300		37.1	168	<4.99
GRO	SW2015 Mod		<15.0	<15.0	<15.0
DRO	SW2015 Mod		<15.0	<15.0	<15.0
ORO	SW2015 Mod		<15.0	<15.0	<15.0
Total TPH	SW2015 Mod		<15.0	<15.0	<15.0

		Sample ID	NBH	NBH @	NBH @
		Sample ID	0-1	2-3	4-5
Analyte	Method	Date	1/9/18	1/9/18	1/9/18
			mg/kg	mg/kg	mg/kg
Benzene	EPA 8021B		< 0.00199	< 0.00200	0.00372
Toluene	EPA 8021B		<0.00199	<0.00200	0.00375
Ethylbenzene	EPA 8021B		< 0.00199	<0.00200	< 0.00202
m,p,-Xylenes	EPA 8021B		< 0.00398	< 0.00399	< 0.00403
o-Xylene	EPA 8021B		<0.00199	<0.00200	<0.00202
Total Xylenes	EPA 8021B		<0.00199	<0.00200	<0.00202
Total BTEX	EPA 8021B		<0.00199	<0.00200	0.00747
Chloride	EPA 300		27.7	117	37.1
GRO	SW2015 Mod		<15.0	<15.0	<15.0
DRO	SW2015 Mod		<15.0	52.3	<15.0
ORO	SW2015 Mod		<15.0	32.7	<15.0
Total TPH	SW2015 Mod		<15.0	85	<15.0

Laboratory Analytical Results Summary Citation X Federal Com #001H

			WBH	WBH @	WBH @
		Sample ID	0'-1'	2'-3'	4'-5'
Analyte	Method	Date	1/9/18	1/9/18	1/9/18
			mg/kg	mg/kg	mg/kg
Benzene	EPA 8021B		0.00363	<0.00198	< 0.00202
Toluene	EPA 8021B		0.00277	<0.00198	< 0.00202
Ethylbenzene	EPA 8021B		<0.00199	<0.00198	<0.00202
m,p,-Xylenes	EPA 8021B		<0.00398	< 0.00397	< 0.00404
o-Xylene	EPA 8021B		< 0.00199	<0.00198	< 0.00202
Total Xylenes	EPA 8021B		0.00199	<0.00198	<0.00202
Total BTEX	EPA 8021B		0.0064	<0.00198	< 0.00202
Chloride	EPA 300		32.7	38	36.1
GRO	SW2015 Mod		<15.0	<15.0	<15.0
DRO	SW2015 Mod		<15.0	<15.0	<15.0
ORO	SW2015 Mod		<15.0	<15.0	<15.0
Total TPH	SW2015 Mod		<15.0	<15.0	<15.0

		Sample ID	SBH 0'-1'	SBH @ 2'-3'	SBH @ 4'-5'
Analyte	Method	Date	1/9/18	1/9/18	1/9/18
			mg/kg	mg/kg	mg/kg
Benzene	EPA 8021B		<0.00201	<0.00199	<0.00198
Toluene	EPA 8021B		<0.00201	<0.00199	<0.00198
Ethylbenzene	EPA 8021B		<0.00201	<0.00199	<0.00198
m,p,-Xylenes	EPA 8021B		< 0.00402	<0.00398	< 0.00396
o-Xylene	EPA 8021B		<0.00201	<0.00199	<0.00198
Total Xylenes	EPA 8021B		<0.00201	<0.00199	<0.00198
Total BTEX	EPA 8021B		<0.00201	<0.00199	<0.00198
Chloride	EPA 300		184	149	8.34
GRO	SW2015 Mod		<15.0	<15.0	<15.0
DRO	SW2015 Mod		<15.0	<15.0	<15.0
ORO	SW2015 Mod		<15.0	<15.0	<15.0
Total TPH	SW2015 Mod		<15.0	<15.0	<15.0

		Sample ID	EBH 0'-1'	EBH @ 2'-3'	EBH @
		Sample ID	0-1	2-5	4-2
Analyte	Method	Date	1/9/18	1/9/18	1/9/18
			mg/kg	mg/kg	mg/kg
Benzene	EPA 8021B		< 0.00201	< 0.00199	<0.00199
Toluene	EPA 8021B		< 0.00201	< 0.00199	< 0.00199
Ethylbenzene	EPA 8021B		< 0.00201	< 0.00199	<0.00199
m,p,-Xylenes	EPA 8021B		< 0.00402	<0.00398	<0.00398
o-Xylene	EPA 8021B		< 0.00201	< 0.00199	<0.00199
Total Xylenes	EPA 8021B		< 0.00201	< 0.00199	< 0.00199
Total BTEX	EPA 8021B		< 0.00201	< 0.00199	< 0.00199
Chloride	EPA 300		46.3	141	39.8
GRO	SW2015 Mod		<15.0	<15.0	<15.0
DRO	SW2015 Mod		<15.0	<15.0	<15.0
ORO	SW2015 Mod		<15.0	<15.0	<15.0
Total TPH	SW2015 Mod		<15.0	<15.0	<15.0

Page 1 of 1	

		Publ	ic Land Surv	ey System (PLS	is)							
•	Q64: 🗸	Q16: SW 🗸	Q4: SW 🗸	Sec: 08 🗸 Tws	: 19S 🗸 🛛 Rr	ng: 32E 🗸						
		State P	lane Coordii	nate System - N	AD27							
0	X: 0	ft Y: 0	ft	Zone:		\checkmark						
	State Plane Coordinate System - NAD83											
0	○ X: 0 ft Y: 0 ft Zone: ✓											
	Degrees/Minutes/Seconds											
0	Longitude (X):	Deg	rees: 0 °	Minutes: 0	' Se	econds: 0 "						
	Latitude (Y):	Deg	rees: 0 °	Minutes: 0	' S	econds: 0 "						
			UTM -	NAD27								
0	Easting (X): 0 mtrs Northing (Y): 0 mtrs Zone:											
	SUBMIT											
	All Conversion Results are displayed as <u>NAD 1983 UTM Zone 13</u>											
	Easting (X):	612998.0	mtrs	Northing (Y):	3615294.0	mtrs						
	~~ Please keep screen open to copy UTM values for Reports. ~~											

Analytical Report 573366

for Tetra Tech- Midland

Project Manager: Ike Tavarez

Citation X Fed Com #1

212C-MD-01056.200

18-JAN-18

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12) Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



18-JAN-18



Project Manager: **Ike Tavarez Tetra Tech- Midland** 4000 N. Big Spring Suite 401 Midland, TX 79705

Reference: XENCO Report No(s): **573366** Citation X Fed Com #1 Project Address: Lea County,NM

Ike Tavarez:

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) 573366. 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. 573366 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,

Huns hoah

Kelsey Brooks Project Manager

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

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



Sample Cross Reference 573366



Tetra Tech- Midland, Midland, TX

Citation X Fed Com #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-1 0-1	S	01-08-18 00:00		573366-001
BH-1 2-3	S	01-08-18 00:00		573366-002
BH-1 4-5	S	01-08-18 00:00		573366-003
BH-1 6-7	S	01-08-18 00:00		573366-004
BH-1 9-10	S	01-08-18 00:00		573366-005
BH-1 14-15	S	01-08-18 00:00		573366-006
BH-1 19-20	S	01-08-18 00:00		573366-007
BH-1 24-25	S	01-08-18 00:00		573366-008
BH-1 29-30	S	01-08-18 00:00		573366-009
BH-1 34-35	S	01-08-18 00:00		573366-010
BH-1 39-40	S	01-08-18 00:00		573366-011
BH-1 49-50	S	01-08-18 00:00		573366-012
BH-1 59-60	S	01-08-18 00:00		573366-013
BH-1 69-70	S	01-08-18 00:00		573366-014
BH-1 74-75	S	01-08-18 00:00		573366-015
BH-2 0-1	S	01-08-18 00:00		573366-016
BH-2 2-3	S	01-08-18 00:00		573366-017
BH-2 4-5	S	01-08-18 00:00		573366-018
BH-2 6-7	S	01-08-18 00:00		573366-019
BH-2 9-10	S	01-08-18 00:00		573366-020
BH-2 14-15	S	01-08-18 00:00		573366-021
BH-2 19-20	S	01-08-18 00:00		573366-022
BH-2 24-25	S	01-08-18 00:00		573366-023
BH-2 29-30	S	01-08-18 00:00		573366-024
BH-2 34-35	S	01-08-18 00:00		573366-025
BH-2 39-40	S	01-08-18 00:00		573366-026
BH-2 49-50	S	01-08-18 00:00		573366-027
BH-3 0-1	S	01-09-18 00:00		573366-030
BH-3 2-3	S	01-09-18 00:00		573366-031
BH-3 4-5	S	01-09-18 00:00		573366-032
BH-3 6-7	S	01-09-18 00:00		573366-033
BH-3 9-10	S	01-09-18 00:00		573366-034
BH-3 14-15	S	01-09-18 00:00		573366-035
BH-3 19-20	S	01-09-18 00:00		573366-036
BH-4 0-1	S	01-09-18 00:00		573366-037
BH-4 2-3	S	01-09-18 00:00		573366-038
BH-4 4-5	S	01-09-18 00:00		573366-039
BH-4 6-7	S	01-09-18 00:00		573366-040
BH-4 9-10	S	01-09-18 00:00		573366-041
BH-4 14-15	S	01-09-18 00:00		573366-042
Southwest 0-1 (Borehole)	S	01-09-18 00:00		573366-043
Southwest 2-3 (Borehole)	S	01-09-18 00:00		573366-044
Southwest 4-5 (Borehole)	S	01-09-18 00:00		573366-045



North 0-1 (Borehole)
North 2-3 (Borehole)
North 4-5 (Borehole)
West 0-1 (Borehole)
West 2-3 (Borehole)
West 4-5 (Borehole)
South 0-1 (Borehole)
South 2-3 (Borehole)
South 4-5 (Borehole)
East 0-1 (Borehole)
East 2-3 (Borehole)
East 4-5 (Borehole)
BH-2 59-60
BH-2 69-70

Sample Cross Reference 573366



Tetra Tech- Midland, Midland, TX

Citation X Fed Com #1

S	01-09-18 00:00	573366-046
S	01-09-18 00:00	573366-047
S	01-09-18 00:00	573366-048
S	01-09-18 00:00	573366-049
S	01-09-18 00:00	573366-050
S	01-09-18 00:00	573366-051
S	01-09-18 00:00	573366-052
S	01-09-18 00:00	573366-053
S	01-09-18 00:00	573366-054
S	01-09-18 00:00	573366-055
S	01-09-18 00:00	573366-056
S	01-09-18 00:00	573366-057
S	01-08-18 00:00	Not Analyzed
S	01-08-18 00:00	Not Analyzed



CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: Citation X Fed Com #1

 Project ID:
 212C-MD-01056.200

 Work Order Number(s):
 573366

Report Date: 18-JAN-18 Date Received: 01/11/2018

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3038355 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3038360 BTEX by EPA 8021B

Lab Sample ID 573366-047 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 573366-001, -002, -047, -048, -049, -050, -051, -052, -053, -054, -055, -056.

The Laboratory Control Sample for m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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

Batch: LBA-3038367 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3038453 Chloride by EPA 300

Lab Sample ID 573366-042 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 573366-032, -033, -034, -035, -036, -037, -038, -039, -040, -041, -042, -043, -044, -045, -046, -047, -048, -049, -050, -051. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was

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

Batch: LBA-3038601 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Tetra Tech- Midland, Midland, TX Project Name: Citation X Fed Com #1



Project Id:212C-MD-01056.200Contact:Ike TavarezProject Location:Lea County,NM

Date Received in Lab:Thu Jan-11-18 04:14 pmReport Date:18-JAN-18Project Manager:Kelsey Brooks

	Lab Id:	573366-0	001	573366-0	002	573366-	003	573366-0	004	573366-0	005	573366-0)06
Analysis Paguested	Field Id:	BH-1 0-	-1	BH-1 2-	.3	BH-1 4	-5	BH-1 6	-7	BH-1 9-	10	BH-1 14-	-15
Analysis Kequestea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-08-18 (00:00	Jan-08-18 0	00:00	Jan-08-18	00:00	Jan-08-18	00:00	Jan-08-18 (00:00	Jan-08-18 0	00:00
BTEX by EPA 8021B	Extracted:	Jan-13-18 (08:00	Jan-13-18 0	8:00	Jan-12-18	16:00						
	Analyzed:	Jan-13-18	17:49	Jan-13-18 1	7:30	Jan-12-18	23:35						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Benzene		16.2	0.499	29.0	0.500	0.0229	0.00201						
Toluene		77.8	0.499	94.4	0.500	0.0295	0.00201						
Ethylbenzene		56.1	<u>56.1</u> 0.499		0.500	0.00844	0.00201						
m,p-Xylenes		87.4	87.4 0.998		1.00	0.0124	0.00402						
o-Xylene		31.9	31.9 0.499		0.500	0.00723	0.00201						
Total Xylenes		119	0.499	119	0.500	0.0196	0.00201						
Total BTEX		269	0.499	300	0.500	0.0805	0.00201						
Chloride by EPA 300	Extracted:	Jan-12-18	15:00	Jan-12-18 1	5:00	Jan-12-18	15:00	Jan-12-18 15:00		Jan-12-18 1	5:00	Jan-12-18 1	5:00
	Analyzed:	Jan-15-18 2	20:46	Jan-15-18 2	.0:53	Jan-15-18	21:00	Jan-15-18 2	21:07	Jan-15-18 2	21:27	Jan-15-18 2	21:34
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4740	25.0	3540	24.7	8310	49.2	7980	49.0	12200	49.3	11800	49.7
TPH by SW8015 Mod	Extracted:	Jan-12-18	10:00	Jan-12-18 1	0:00	Jan-12-18	10:00						
	Analyzed:	Jan-13-18 (08:09	Jan-13-18 0	9:32	Jan-13-18	07:29						
	Units/RL:	mg/kg	mg/kg RL		RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		3820 75.0		1980	15.0	<15.0	15.0						
Diesel Range Organics (DRO)		6520 75.0		3130	15.0	<15.0	15.0						
Oil Range Hydrocarbons (ORO)		1650	75.0	772	15.0	<15.0	15.0						
Total TPH		12000	75.0	5880	15.0	<15.0	15.0						

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Huns Boah

Kelsey Brooks Project Manager



Tetra Tech- Midland, Midland, TX Project Name: Citation X Fed Com #1



Project Id:212C-MD-01056.200Contact:Ike TavarezProject Location:Lea County,NM

Date Received in Lab:Thu Jan-11-18 04:14 pmReport Date:18-JAN-18Project Manager:Kelsey Brooks

	Lab Id:	573366-0	07	573366-0	008	573366-0	09	573366-0)10	573366-0)11	573366-0	012
Analysis Paguested	Field Id:	BH-1 19-	20	BH-1 24-	-25	BH-1 29-	30	BH-1 34-	-35	BH-1 39-	-40	BH-1 49	-50
Anuiysis Kequesieu	Depth:												
	Matrix:	SOIL	SOIL		SOIL		SOIL			SOIL		SOIL	
	Sampled:	Jan-08-18 0	Jan-08-18 00:00		00:00	Jan-08-18 0	00:00	Jan-08-18 (00:00	Jan-08-18 (00:00	Jan-08-18	00:00
Chloride by EPA 300	Extracted:	Jan-12-18 1	Jan-12-18 15:00		15:00	Jan-12-18 1	5:00	Jan-12-18	5:00	Jan-12-18 1	5:00	Jan-15-18	14:30
	Analyzed:	Jan-15-18 2	Jan-15-18 21:41		21:48	Jan-15-18 2	1:55	Jan-15-18 2	22:02	Jan-15-18 2	22:09	Jan-16-18 (01:11
	Units/RL:	mg/kg	mg/kg RL		RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		11700 50.0		9880	49.7	10800	49.8	10600	49.8	13300	98.0	5210	49.8

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Kelsey Brooks Project Manager



Tetra Tech- Midland, Midland, TX Project Name: Citation X Fed Com #1



Project Id:212C-MD-01056.200Contact:Ike TavarezProject Location:Lea County,NM

Date Received in Lab:Thu Jan-11-18 04:14 pmReport Date:18-JAN-18Project Manager:Kelsey Brooks

	Lab Id:	573366-0)13	573366-0	014	573366-0	015	573366-	016	573366-0	017	573366-	018
	Field Id:	BH-1 59	-60	BH-1 69-	-70	BH-1 74-	-75	BH-2 0	-1	BH-2 2-	-3	BH-2 4	-5
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL	<u>.</u>	SOIL		SOIL	4
	Sampled:	Jan-08-18	00:00	Jan-08-18 (00:00	Jan-08-18 (00:00	Jan-08-18	00:00	Jan-08-18 0	00:00	Jan-08-18	00:00
BTEX by EPA 8021B	Extracted:							Jan-17-18	09:00	Jan-17-18 0	9:00	Jan-12-18	16:00
	Analyzed:							Jan-17-18	16:39	Jan-17-18 1	7:17	Jan-12-18	20:23
	Units/RL:							mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene								< 0.00998	0.00998	< 0.202	0.202	< 0.00202	0.00202
Toluene								< 0.00998	0.00998	0.231	0.202	0.00349	0.00202
Ethylbenzene								0.0716	0.00998	1.33	0.202	< 0.00202	0.00202
m,p-Xylenes								0.168	0.0200	4.34	0.403	< 0.00403	0.00403
o-Xylene								< 0.00998	0.00998	< 0.202	0.202	< 0.00202	0.00202
Total Xylenes								0.168	0.00998	4.34	0.202	< 0.00202	0.00202
Total BTEX								0.240	0.00998	5.90	0.202	0.00349	0.00202
Chloride by EPA 300	Extracted:	Jan-15-18	14:30	Jan-15-18 1	14:30	Jan-15-18 1	4:30	Jan-15-18	14:30	Jan-15-18 1	4:30	Jan-15-18	14:30
	Analyzed:	Jan-16-18	01:18	Jan-16-18 0	01:25	Jan-16-18 (01:32	Jan-16-18	01:53	Jan-16-18 0	02:00	Jan-16-18	02:07
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2850	24.9	2560	24.6	2240	24.5	4250	24.7	2830	24.7	10300	99.4
TPH by SW8015 Mod	Extracted:							Jan-12-18	10:00	Jan-12-18 1	0:00	Jan-12-18	10:00
	Analyzed:							Jan-13-18	09:11	Jan-13-18 0	08:30	Jan-13-18	07:49
	Units/RL:							mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	·							140	15.0	1980	150	<15.0	15.0
Diesel Range Organics (DRO)								1940	15.0	14100	150	<15.0	15.0
Oil Range Hydrocarbons (ORO)								549	15.0	3160	150	<15.0	15.0
Total TPH								2630	15.0	19200	150	<15.0	15.0

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Huns Roah

Kelsey Brooks Project Manager



Tetra Tech- Midland, Midland, TX Project Name: Citation X Fed Com #1



Project Id:212C-MD-01056.200Contact:Ike TavarezProject Location:Lea County,NM

Date Received in Lab:Thu Jan-11-18 04:14 pmReport Date:18-JAN-18Project Manager:Kelsey Brooks

	Lab Id:	573366-0	19	573366-0	20	573366-0)21	573366-0)22	573366-0	23	573366-0	024
Analysis Paguested	Field Id:	BH-2 6-	7	BH-2 9-	10	BH-2 14-	15	BH-2 19-	-20	BH-2 24-	-25	BH-2 29-	-30
Analysis Requested	Depth:												
	Matrix:	SOIL	SOIL		SOIL			SOIL		SOIL		SOIL	
	Sampled:	Jan-08-18 0	Jan-08-18 00:00		00:00	Jan-08-18 (00:00	Jan-08-18 (00:00	Jan-08-18 0	00:00	Jan-08-18 (00:00
Chloride by EPA 300	Extracted:	Jan-15-18 1	Jan-15-18 14:30		4:30	Jan-15-18 1	4:30	Jan-15-18 1	4:30	Jan-15-18 1	4:30	Jan-15-18	14:30
	Analyzed:	Jan-16-18 0	Jan-16-18 02:13		2:20	Jan-16-18 (02:48	Jan-16-18 (02:55	Jan-16-18 0	3:16	Jan-16-18 (03:23
	Units/RL:	mg/kg	mg/kg RL		RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		14900 99.0		11700	100	8220	49.5	6730	49.3	3290	25.0	3870	24.6

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Huns Boah

Kelsey Brooks Project Manager



Tetra Tech- Midland, Midland, TX Project Name: Citation X Fed Com #1



Project Id:212C-MD-01056.200Contact:Ike TavarezProject Location:Lea County,NM

Date Received in Lab:Thu Jan-11-18 04:14 pmReport Date:18-JAN-18Project Manager:Kelsey Brooks

	Lab Id:	573366-0	025	573366-0	026	573366-0	27	573366-0	030	573366-0	031	573366-	032
Analysis Pognostad	Field Id:	BH-2 34	-35	BH-2 39-	-40	BH-2 49-	-50	BH-3 0	-1	BH-3 2	-3	BH-3 4	-5
Analysis Kequestea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	-
	Sampled:	Jan-08-18	00:00	Jan-08-18 (00:00	Jan-08-18 0	00:00	Jan-09-18	00:00	Jan-09-18	00:00	Jan-09-18	00:00
BTEX by EPA 8021B	Extracted:							Jan-17-18	09:00	Jan-17-18	09:00	Jan-15-18	11:00
	Analyzed:							Jan-17-18	16:58	Jan-17-18	13:11	Jan-15-18	17:16
	Units/RL:							mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene								< 0.0100	0.0100	< 0.00992	0.00992	< 0.00336	0.00336
Toluene								< 0.0100	0.0100	< 0.00992	0.00992	< 0.00336	0.00336
Ethylbenzene								< 0.0100	0.0100	< 0.00992	0.00992	< 0.00336	0.00336
m,p-Xylenes								< 0.0200	0.0200	< 0.0198	0.0198	< 0.00671	0.00671
o-Xylene								< 0.0100	0.0100	< 0.00992	0.00992	< 0.00336	0.00336
Total Xylenes								< 0.0100	0.0100	<0.00992	0.00992	< 0.00336	0.00336
Total BTEX								< 0.0100	0.0100	<0.00992	0.00992	< 0.00336	0.00336
Chloride by EPA 300	Extracted:	Jan-15-18	14:30	Jan-15-18 14:30		Jan-15-18 1	an-15-18 14:30		14:30	Jan-15-18	14:30	Jan-15-18	17:00
	Analyzed:	Jan-16-18	03:30	Jan-16-18 0	03:37	Jan-16-18 0	03:44	Jan-16-18	00:50	Jan-16-18	02:27	Jan-16-18	04:40
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4530	24.8	2400	25.0	91.3	4.93	106	4.93	17.6	4.99	966	4.90
TPH by SW8015 Mod	Extracted:							Jan-12-18	10:00	Jan-16-18	16:00	Jan-12-18	10:00
	Analyzed:							Jan-13-18 (08:50	Jan-17-18	11:47	Jan-13-18	10:35
	Units/RL:							mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)								108	75.0	24.2	15.0	<15.0	15.0
Diesel Range Organics (DRO)								3790	75.0	3760	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)								1050	75.0	833	15.0	<15.0	15.0
Total TPH								4950	75.0	4620	15.0	<15.0	15.0

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Kelsey Brooks Project Manager



Tetra Tech- Midland, Midland, TX Project Name: Citation X Fed Com #1



Project Id:212C-MD-01056.200Contact:Ike TavarezProject Location:Lea County,NM

Date Received in Lab:Thu Jan-11-18 04:14 pmReport Date:18-JAN-18Project Manager:Kelsey Brooks

	Lab Id:	573366-	033	573366-0)34	573366-0	035	573366-0)36	573366-0	037	573366-	038
Analysis Paguastad	Field Id:	BH-3 6	-7	BH-3 9-	10	BH-3 14	-15	BH-3 19-	-20	BH-4 0	-1	BH-4 2	2-3
Analysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOII	
	Sampled:	Jan-09-18	00:00	Jan-09-18 (00:00	Jan-09-18 (00:00	Jan-09-18 (00:00	Jan-09-18	00:00	Jan-09-18	00:00
BTEX by EPA 8021B	Extracted:		ſ				1			Jan-12-18	16:00	Jan-12-18	16:00
	Analyzed:									Jan-13-18 (00:11	Jan-13-18	00:31
	Units/RL:									mg/kg	RL	mg/kg	RL
Benzene										< 0.00200	0.00200	< 0.00201	0.00201
Toluene										< 0.00200	0.00200	0.00234	0.00201
Ethylbenzene										<0.00200	0.00200	< 0.00201	0.00201
m,p-Xylenes										< 0.00399	0.00399	< 0.00402	0.00402
o-Xylene										< 0.00200	0.00200	< 0.00201	0.00201
Total Xylenes										< 0.00200	0.00200	< 0.00201	0.00201
Total BTEX										< 0.00200	0.00200	0.00234	0.00201
Chloride by EPA 300	Extracted:	Jan-15-18	17:00	Jan-15-18 1	7:00	Jan-15-18	17:00	Jan-15-18	7:00	Jan-15-18 17:00		Jan-15-18	17:00
	Analyzed:	Jan-16-18	05:01	Jan-16-18 0	05:08	Jan-16-18 (05:15	Jan-16-18 (05:22	Jan-16-18 (05:43	Jan-16-18	05:50
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5630	49.3	4300	24.6	548	4.90	202	4.91	301	4.92	845	4.96
TPH by SW8015 Mod	Extracted:									Jan-12-18	10:00	Jan-12-18	10:00
	Analyzed:									Jan-13-18	11:16	Jan-13-18	11:36
	Units/RL:									mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)										<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)										<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)										<15.0	15.0	<15.0	15.0
Total TPH										<15.0	15.0	<15.0	15.0

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Kelsey Brooks Project Manager



Tetra Tech- Midland, Midland, TX Project Name: Citation X Fed Com #1



Project Id:212C-MD-01056.200Contact:Ike TavarezProject Location:Lea County,NM

Date Received in Lab:Thu Jan-11-18 04:14 pmReport Date:18-JAN-18Project Manager:Kelsey Brooks

	Lab Id:	573366-0)39	573366-0	40	573366-0	041	573366-0	42	573366-	043	573366-	044
Analysis Paguastad	Field Id:	BH-4 4	-5	BH-4 6-	7	BH-4 9-	10	BH-4 14	15	Southwest 0-1 (Borehole)	Southwest 2-3	(Borehole)
Analysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-09-18 (00:00	Jan-09-18 (00:00	Jan-09-18 (00:00	Jan-09-18 (00:00	Jan-09-18	00:00	Jan-09-18	00:00
BTEX by EPA 8021B	Extracted:	Jan-12-18	16:00							Jan-12-18	16:00	Jan-12-18	16:00
	Analyzed:	Jan-13-18 (00:50							Jan-13-18	01:09	Jan-13-18	01:28
	Units/RL:	mg/kg	RL							mg/kg	RL	mg/kg	RL
Benzene		0.00548	0.00201							0.00555	0.00199	< 0.00199	0.00199
Toluene		0.00364	0.00201							0.00317	0.00199	< 0.00199	0.00199
Ethylbenzene		< 0.00201	0.00201							< 0.00199	0.00199	< 0.00199	0.00199
m,p-Xylenes		< 0.00402	0.00402							< 0.00398	0.00398	< 0.00398	0.00398
o-Xylene		< 0.00201	<0.00201 0.00201							< 0.00199	0.00199	< 0.00199	0.00199
Total Xylenes		< 0.00201	0.00201							< 0.00199	0.00199	< 0.00199	0.00199
Total BTEX		0.00912	0.00201							0.00872	0.00199	< 0.00199	0.00199
Chloride by EPA 300	Extracted:	Jan-15-18	17:00	Jan-15-18 17:00		Jan-15-18	17:00	Jan-15-18	7:00	Jan-15-18	17:00	Jan-15-18	17:00
	Analyzed:	Jan-16-18 (05:57	Jan-16-18 0	6:04	Jan-16-18 (06:11	Jan-16-18 06:18		Jan-16-18	06:39	Jan-16-18	06:46
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		799	4.90	401	4.94	86.4	4.99	112	4.98	37.1	4.93	168	4.94
TPH by SW8015 Mod	Extracted:	Jan-12-18	10:00							Jan-12-18	10:00	Jan-12-18	10:00
	Analyzed:	Jan-13-18	11:57							Jan-13-18	12:19	Jan-13-18	12:40
	Units/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
Diesel Range Organics (DRO)		<15.0	<15.0 15.0							<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0							<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0							<15.0	15.0	<15.0	15.0

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Huns Roah

Kelsey Brooks Project Manager



Tetra Tech- Midland, Midland, TX Project Name: Citation X Fed Com #1



Project Id:212C-MD-01056.200Contact:Ike TavarezProject Location:Lea County,NM

Date Received in Lab:Thu Jan-11-18 04:14 pmReport Date:18-JAN-18Project Manager:Kelsey Brooks

	Lab Id:	573366-0)45	573366-0	046	573366-	047	573366-	048	573366-	049	573366-	050
Analysis Paguested	Field Id:	Southwest 4-5 (1	Borehole)	North 0-1 (Bo	orehole)	North 2-3 (Be	orehole)	North 4-5 (B	orehole)	West 0-1 (Bo	orehole)	West 2-3 (Bo	orehole)
Analysis Kequestea	Depth:												
	Matrix:	SOIL		SOIL	,	SOIL	,	SOIL	,	SOIL	,	SOIL	,
	Sampled:	Jan-09-18 (00:00	Jan-09-18	00:00	Jan-09-18	00:00	Jan-09-18	00:00	Jan-09-18	00:00	Jan-09-18	00:00
BTEX by EPA 8021B	Extracted:	Jan-12-18	16:00	Jan-15-18	11:00	Jan-13-18	08:00	Jan-13-18	08:00	Jan-13-18	08:00	Jan-13-18	08:00
	Analyzed:	Jan-13-18 (01:47	Jan-15-18	17:35	Jan-13-18	11:09	Jan-13-18	11:47	Jan-13-18	12:06	Jan-13-18	12:25
	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	< 0.00200	0.00200	0.00372	0.00202	0.00363	0.00199	< 0.00198	0.00198
Toluene		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200	0.00375	0.00202	0.00277	0.00199	< 0.00198	0.00198
Ethylbenzene		< 0.00201	<0.00201 0.00201		0.00199	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00199	0.00199	< 0.00198	0.00198
m,p-Xylenes		< 0.00402	<0.00402 0.00402		0.00398	< 0.00399	0.00399	< 0.00403	0.00403	< 0.00398	0.00398	< 0.00397	0.00397
o-Xylene		< 0.00201	<0.00201 0.00201		0.00199	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00199	0.00199	< 0.00198	0.00198
Total Xylenes		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00199	0.00199	< 0.00198	0.00198
Total BTEX		< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200	0.00747	0.00202	0.00640	0.00199	< 0.00198	0.00198
Chloride by EPA 300	Extracted:	Jan-15-18	17:00	Jan-15-18	17:00	Jan-15-18	17:00	Jan-15-18	17:00	Jan-15-18	17:00	Jan-15-18	17:00
	Analyzed:	Jan-16-18 (07:07	Jan-16-18 (07:13	Jan-16-18	07:20	Jan-16-18 07:27		Jan-16-18 07:34		Jan-16-18	07:41
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.99	4.99	27.7	4.97	117	4.93	37.1	4.95	32.7	4.97	38.0	4.94
TPH by SW8015 Mod	Extracted:	Jan-12-18	10:00	Jan-12-18	10:00	Jan-12-18	10:00	Jan-12-18	12:00	Jan-16-18	16:00	Jan-12-18	12:00
	Analyzed:	Jan-13-18	13:02	Jan-13-18	13:25	Jan-13-18	13:47	Jan-14-18	00:09	Jan-17-18	03:02	Jan-13-18	23:48
	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	<15.0	15.0	52.3	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	<15.0 15.0		15.0	32.7	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	<15.0 15.0 <15.0 15.0		15.0	85.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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Huns Roah

Kelsey Brooks Project Manager

Page 13 of 51



Ike Tavarez

Lea County,NM

Contact:

Project Location:

Certificate of Analysis Summary 573366

Tetra Tech- Midland, Midland, TX Project Name: Citation X Fed Com #1



Date Received in Lab:Thu Jan-11-18 04:14 pmReport Date:18-JAN-18Project Manager:Kelsey Brooks

	Lab Id:	573366-0	051	573366-0)52	573366-0	053	573366-	054	573366-	055	573366-	056
Amalusia Deguastad	Field Id:	West 4-5 (Bos	rehole)	South 0-1 (Bo	orehole)	South 2-3 (Bo	orehole)	South 4-5 (B	orehole)	East 0-1 (Bo	rehole)	East 2-3 (Bo	rehole)
Analysis Kequestea	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOII	,	SOIL		SOIL	
	Sampled:	Jan-09-18 (00:00	Jan-09-18 (00:00	Jan-09-18	00:00	Jan-09-18	00:00	Jan-09-18	00:00	Jan-09-18	00:00
BTEX by EPA 8021B	Extracted:	Jan-13-18 (08:00	Jan-13-18 (08:00	Jan-13-18 (08:00	Jan-13-18	08:00	Jan-13-18	08:00	Jan-13-18	08:00
	Analyzed:	Jan-13-18 1	12:44	Jan-13-18 1	3:03	Jan-13-18	13:23	Jan-13-18	13:42	Jan-13-18	14:01	Jan-13-18	14:59
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00202	0.00202	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00199	0.00199
Toluene		< 0.00202	0.00202	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00199	0.00199
Ethylbenzene		< 0.00202	<0.00202 0.00202		0.00201	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00199	0.00199
m,p-Xylenes		< 0.00404	< 0.00404 0.00404		0.00402	< 0.00398	0.00398	< 0.00396	0.00396	< 0.00402	0.00402	< 0.00398	0.00398
o-Xylene		< 0.00202	<0.00202 0.00202		0.00201	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00199	0.00199
Total Xylenes		< 0.00202	0.00202	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00199	0.00199
Total BTEX		< 0.00202	0.00202	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00198	0.00198	< 0.00201	0.00201	< 0.00199	0.00199
Chloride by EPA 300	Extracted:	Jan-15-18 1	17:00	Jan-16-18 ()9:00	Jan-16-18 (09:00	Jan-16-18 09:00		Jan-16-18	09:00	Jan-16-18	09:00
	Analyzed:	Jan-16-18 (07:48	Jan-16-18 (9:58	Jan-17-18	12:26	Jan-16-18 10:19		Jan-16-18 10:26		Jan-16-18 10:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		36.1	5.00	184	4.98	149	4.93	8.34	4.96	46.3	4.92	141	4.94
TPH by SW8015 Mod	Extracted:	Jan-12-18 1	12:00	Jan-12-18 1	2:00	Jan-12-18	12:00	Jan-12-18	12:00	Jan-12-18	12:00	Jan-12-18	12:00
	Analyzed:	Jan-13-18 2	22:01	Jan-13-18 2	22:23	Jan-13-18	22:44	Jan-13-18	23:06	Jan-13-18	15:40	Jan-13-18	16:48
	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 15.0		15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<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	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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Huns Roah

Kelsey Brooks Project Manager



Ike Tavarez

Lea County,NM

Contact:

Project Location:

Certificate of Analysis Summary 573366

Tetra Tech- Midland, Midland, TX Project Name: Citation X Fed Com #1



Date Received in Lab:Thu Jan-11-18 04:14 pmReport Date:18-JAN-18Project Manager:Kelsey Brooks

	Lab Id:	573366-057			
Analysis Paguested	Field Id:	East 4-5 (Borehole)			
Analysis Kequestea	Depth:				
	Matrix:	SOIL			
	Sampled:	Jan-09-18 00:00			
BTEX by EPA 8021B	Extracted:	Jan-15-18 11:00	1		
	Analyzed:	Jan-15-18 17:54			
	Units/RL:	mg/kg RL			
Benzene		<0.00199 0.00199			
Toluene		<0.00199 0.00199			
Ethylbenzene		<0.00199 0.00199			
m,p-Xylenes		<0.00398 0.00398			
o-Xylene		<0.00199 0.00199			
Total Xylenes		<0.00199 0.00199			
Total BTEX		<0.00199 0.00199			
Chloride by EPA 300	Extracted:	Jan-16-18 09:00			
	Analyzed:	Jan-16-18 10:40			
	Units/RL:	mg/kg RL			
Chloride		39.8 4.99			
TPH by SW8015 Mod	Extracted:	Jan-12-18 12:00			
	Analyzed:	Jan-13-18 17:11			
	Units/RL:	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0			
Diesel Range Organics (DRO)		<15.0 15.0			
Oil Range Hydrocarbons (ORO)		<15.0 15.0			
Total TPH		<15.0 15.0			

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Huns Roah

Kelsey Brooks Project Manager



Flagging Criteria



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

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(602) 437-0330	
	(281) 240-4200 (214) 902 0300 (210) 509-3334 (432) 563-1800 (602) 437-0330



Project Name: Citation X Fed Com #1

Work Or Lab Batch	rders: 57336 #: 3038355	6, Sample: 573366-018 / SMP	Project ID: 212C-MD-01056.200 Batch: 1 Matrix: Soil						
Units:	mg/kg	Date Analyzed: 01/12/18 20:23	SUR	RROGATE R	ECOVERY	STUDY			
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluor	obenzene		0.0290	0.0300	97	80-120			
4-Bromoflu	orobenzene		0.0359	0.0300	120	80-120			
Lab Batch	#: 3038355	Sample: 573366-003 / SMP	Batch:	: 1 Matrix:	: Soil				
Units:	mg/kg	Date Analyzed: 01/12/18 23:35	SUR	RROGATE R	ECOVERY	STUDY			
	BTEX	Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1.4-Difluor	-Difluorobenzene Bromofluorobenzene		0.0280	0.0300	93	80-120			
4-Bromoflu	orobenzene		0.0270	0.0300	90	80-120			
Lab Batch	#: 3038355	Sample: 573366-037 / SMP	Batch:	: 1 Matrix:	: Soil	00 120			
Units:	mg/kg	Date Analyzed: 01/13/18 00:11	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B			Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1.4-Difluor	obenzene		0.0287	0.0300	96	80-120			
4-Bromoflu	orobenzene		0.0276	0.0300	92	80-120			
Lab Batch	#: 3038355	Sample: 573366-038 / SMP	Batch:	: 1 Matrix:	Soil				
Units:	mg/kg	Date Analyzed: 01/13/18 00:31	SUR	ROGATE R	ECOVERYS	STUDY			
	втех	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	obenzene		0.0320	0.0300	107	80-120			
4-Bromoflu	orobenzene		0.0275	0.0300	92	80-120			
Lab Batch	#: 3038355	Sample: 573366-039 / SMP	Batch:	: 1 Matrix:	Soil				
Units:	mg/kg	Date Analyzed: 01/13/18 00:50	SUR	RROGATE R	ECOVERYS	STUDY			
	втех	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	obenzene		0.0294	0.0300	98	80-120			
4-Bromoflu	orobenzene		0.0283	0.0300	94	80-120			

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or Lab Batch	•ders: 57336 #: 3038355	6, Sample: 573366-043 / SMP	Batch	Project ID:	212C-MD-0 Soil	01056.200				
Units:	mg/kg	Date Analyzed: 01/13/18 01:09	SUI	RROGATE R	ECOVERY	STUDY				
	втех	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluoro	obenzene		0.0277	0.0300	92	80-120				
4-Bromoflu	orobenzene		0.0268	0.0300	89	80-120				
Lab Batch	#: 3038355	Sample: 573366-044 / SMP	P Batch: 1 Matrix: Soil							
Units:	mg/kg	Date Analyzed: 01/13/18 01:28	SUI	RROGATE R	ECOVERY S	STUDY				
	BTEX	A palytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1 4-Difluor	benzene		0.0300	0.0300	100	80.120				
4-Bromoflu	orobenzene		0.0300	0.0300	90	80-120				
Lab Batch	#: 3038355	Sample: 573366-045 / SMP	Batch	• 1 Matrix:	Soil	80-120				
Units:	mg/kg	Date Analyzed: 01/13/18 01:47	SURROGATE RECOVERY STUDY							
	втех	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1.4-Difluoro	obenzene		0.0281	0.0300	94	80-120				
4-Bromoflu	orobenzene		0.0266	0.0300	89	80-120				
Lab Batch	#: 3038391	Sample: 573366-003 / SMP	Batch	: 1 Matrix:	: Soil	00 120				
Units:	mg/kg	Date Analyzed: 01/13/18 07:29	SUI	RROGATE R	ECOVERY S	STUDY				
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooct	ane		82.6	100	83	70-135				
o-Terpheny	l		41.8	50.0	84	70-135				
Lab Batch	#: 3038391	Sample: 573366-018 / SMP	Batch	: 1 Matrix:	Soil					
Units:	mg/kg	Date Analyzed: 01/13/18 07:49	SUI	RROGATE R	ECOVERY S	STUDY				
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooct	ane		83.0	100	83	70-135				
o-Terpheny	1		43.7	50.0	87	70-135				

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or	ders : 57336	66, Sample: 572266 001 / SMD	Project ID: 212C-MD-01056.200						
Lab Datch #	mg/kg	Date Analyzed: 01/13/18 08:00	Datci						
Units.	iiig/kg	Date Analyzed. 01/15/18 08.09	SU	RROGATE R	ECOVERYS	STUDY			
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1 Chlorooate		Analytes	104	100	104	70.125			
a Tarphanul	ane		104	50.0	104	70-135			
Leb Patch :	#. 2028201	Semple: 573366 017 / SMP	43.2	30.0	Soil	/0-135			
	#: 5058591	Sample: $575500-017775001$	Date		5011				
Units:	mg/kg	Date Analyzed: 01/13/18 08:30	SU	RROGATE R	ECOVERY S	STUDY			
	TPH by SW8015 Mod Analytes			True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1 Chlansset		Analytes	00.5	100	[2]	70.125			
T-Chloroocta	ane		90.5	100	91	70-135			
o-Terpnenyi		G 1 5722((020 / SMD	39.7	50.0	79	70-135			
Lab Batch #	#: 3038391	Sample: 5/3366-030 / SMP	Batch: I Matrix: Soil						
Units:	mg/kg	Date Analyzed: 01/13/18 08:50	SURROGATE RECOVERY STUDY						
TPH by SW8015 Mod			Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1 Chlorooate			22.7	100	02	70.125			
a Tarphanul	ane		82.7	50.0	83	70-135			
Lab Batch	#• 3038301	Sample: 573366-016 / SMP	Batel	30.0 h• 1 Matrix	Soil	/0-133			
Lab Daten 7	ma/ka	Date Analyzed: 01/12/18 00:11	Date						
Units:	iiig/kg	Date Analyzed: 01/15/18 09.11	SU	RROGATE R	ECOVERYS	STUDY			
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chloroocta	ane		80.3	100	80	70-135			
o-Terphenyl			35.2	50.0	70	70-135			
Lab Batch	#: 3038391	Sample: 573366-002 / SMP	Batcl	h: 1 Matrix:	: Soil				
Units:	mg/kg	Date Analyzed: 01/13/18 09:32	SU	RROGATE R	ECOVERY S	STUDY			
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chloroocta	ane		84.0	100	84	70-135			
o-Terphenyl			47.4	50.0	95	70-135			

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or Lab Batch	:ders : 57336 #: 3038391	56, Sample: 573366-032 / SMP	Project ID: 212C-MD-01056.200 Batch: 1 Matrix: Soil					
Units:	mg/kg	Date Analyzed: 01/13/18 10:35	SUR	ROGATE R	ECOVERY	STUDY		
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes						
1-Chlorooct	tane		93.1	100	93	70-135		
o-Terphenyl	1		46.5	50.0	93	70-135		
Lab Batch	#: 3038360	Sample: 573366-047 / SMP	Batch:	1 Matrix:	Soil			
Units:	mg/kg	Date Analyzed: 01/13/18 11:09	SUR	ROGATE R	ECOVERY S	STUDY		
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1.4-Difluoro	obenzene	1 mary tes	0.0303	0.0300	101	80-120		
4-Bromoflue	romofluorobenzene		0.0276	0.0300	92	80-120		
Lab Batch	#: 3038391	Sample: 573366-037 / SMP	Batch:	1 Matrix:	Soil	00 120		
Units:	mg/kg	Date Analyzed: 01/13/18 11:16	SURROCATE RECOVERV STUDY					
TPH by SW8015 Mod			Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooct	tane		97.0	100	97	70-135		
o-Terphenvl	1		52.5	50.0	105	70-135		
Lab Batch	#: 3038391	Sample: 573366-038 / SMP	Batch:	1 Matrix:	Soil	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Units:	mg/kg	Date Analyzed: 01/13/18 11:36	SUR	ROGATE R	ECOVERYS	STUDY		
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooct	tane		87.4	100	87	70-135		
o-Terphenyl	1		46.0	50.0	92	70-135		
Lab Batch	#: 3038360	Sample: 573366-048 / SMP	Batch:	1 Matrix:	Soil	1 1		
Units:	mg/kg	Date Analyzed: 01/13/18 11:47	SUR	ROGATE R	ECOVERY S	STUDY		
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluoro	obenzene		0.0299	0.0300	100	80-120		
4-Bromoflue	orobenzene		0.0281	0.0300	9/	80.120		

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or	ders : 57336	6, Sampler 572266 020 / SMD	Project ID: 212C-MD-01056.200						
Lab Daten	#: 5056591	Data Analyzed: 01/13/18 11:57	Datci						
Units.	mg/kg	Date Analyzed: 01/15/18 11.57	SU	RROGATE R		STUDY			
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes							
1-Chlorooct	tane		83.7	100	84	70-135			
o-Terpheny	1		44.0	50.0	88	70-135			
Lab Batch	#: 3038360	Sample: 573366-049 / SMP	Batch	n: 1 Matrix:	Soil				
Units:	mg/kg	Date Analyzed: 01/13/18 12:06	SU	RROGATE R	ECOVERY S	STUDY			
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	Analytes -Difluorobenzene Gromofluorobenzene Batch #: 3038391 Sample: 573366-043 / 3		0.0296	0.0300	99	80-120			
4-Bromoflu	orobenzene		0.0271	0.0300	90	80-120			
Lab Batch	#: 3038391	Sample: 573366-043 / SMP	Batch	n: 1 Matrix:	Soil				
Units:	mg/kg	Date Analyzed: 01/13/18 12:19	SURROGATE RECOVERY STUDY						
TPH by SW8015 Mod			Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1 Chlansson		Analytes	06.2	100		70.125			
1-Chiorooc	1		96.3	100	96	70-135			
Lob Dotob	H. 2028260	Sample: 572266 050 / SMD	48.4	50.0	9/	/0-135			
	#: 3038300	Sample: 575300-0307 SMP	Datei		5011				
Units:	mg/kg	Date Analyzed: 01/13/18 12:25	SU	RROGATE R	ECOVERY S	STUDY			
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	obenzene		0.0288	0.0300	96	80-120			
4-Bromoflu	orobenzene		0.0287	0.0300	96	80-120			
Lab Batch	#: 3038391	Sample: 573366-044 / SMP	Batch	n: 1 Matrix:	Soil				
Units:	mg/kg	Date Analyzed: 01/13/18 12:40	SU	RROGATE R	ECOVERY S	STUDY			
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	tane		82.1	100	82	70-135			
o-Terpheny	1		39.5	50.0	79	70.135			

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or Lab Batab	ders : 57336	6, Sample: 572266 051 / SMP	Project ID: 212C-MD-01056.200 P Batch: 1 Matrix: Soil						
Lab Daten	#: 5058500	Data Analyzed: 01/13/18 12:44	Datch						
Units:	mg/kg	Date Analyzeu: 01/15/18 12.44	SU.	RROGATE R	ECOVERY	STUDY			
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	obenzene		0.0295	0.0300	98	80-120			
4-Bromoflu	orobenzene		0.0283	0.0300	94	80-120			
Lab Batch	#: 3038391	Sample: 573366-045 / SMP	Batch	n: 1 Matrix	: Soil				
Units:	mg/kg	Date Analyzed: 01/13/18 13:02	SU	RROGATE R	ECOVERY S	STUDY			
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1 Chlorooct	tana	Analytes	05 0	100	06	70.125			
o-Terpheny	1		63.6	50.0	80	70-135			
Lah Batch	Lab Batch #: 3038360 Sample: 573366-052 / SM			<u> </u>	· Soil	/0-135			
Units:	mg/kg	Date Analyzed: 01/13/18 13:03							
			SURROGATE RECOVERT STUDI						
BTEX by EPA 8021B			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes							
1,4-Difluor	obenzene		0.0303	0.0300	101	80-120			
4-Bromoflu	orobenzene	G 1 5722/(052 / S) (D	0.0274	0.0300	91	80-120			
Lab Batch	#: 3038360	Sample: 5/3366-053/SMP	Batch	n: 1 Matrix	: Soll				
Units:	mg/kg	Date Analyzed: 01/13/18 13:23	SU	RROGATE R	ECOVERY S	STUDY			
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	obenzene		0.0301	0.0300	100	80-120			
4-Bromoflu	orobenzene		0.0280	0.0300	93	80-120			
Lab Batch	#: 3038391	Sample: 573366-046 / SMP	Batch	n: 1 Matrix	Soil				
Units:	mg/kg	Date Analyzed: 01/13/18 13:25	SU.	RROGATE R	ECOVERY S	STUDY			
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	tane		80.6	100	81	70-135			
o-Ternhenv	1		41.2	50.0	-	-			

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or Lab Batch	scheme Sample: 573366-054 / SM Sample: 573366-054 / SM		Project ID: 212C-MD-01056.200 Batch: 1 Matrix: Soil						
Units:	mg/kg	Date Analyzed: 01/13/18 13:42	SURROGATE RECOVERY STUDY						
	втех	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes							
1,4-Difluor	obenzene		0.0297	0.0300	99	80-120			
4-Bromoflu	orobenzene		0.0303	0.0300	101	80-120			
Lab Batch	#: 3038391	Sample: 573366-047 / SMP	Batch:	1 Matrix	: Soil				
Units:	mg/kg	Date Analyzed: 01/13/18 13:47	SUR	ROGATE R	ECOVERY S	STUDY			
	TPHI	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	tane	1 mary tes	75.7	100	76	70-135			
o-Ternhenv	1		35.4	50.0	70	70-135			
Lab Batch	#: 3038360	Sample: 573366-055 / SMP	Batch:	1 Matrix	: Soil	70 155			
Units:	mg/kg	Date Analyzed: 01/13/18 14:01							
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluoro	obenzene		0.0288	0.0300	96	80-120			
4-Bromoflu	orobenzene		0.0289	0.0300	96	80-120			
Lab Batch	#: 3038360	Sample: 573366-056 / SMP	Batch:	1 Matrix	: Soil				
Units:	mg/kg	Date Analyzed: 01/13/18 14:59	SUR	ROGATE R	ECOVERY S	STUDY			
	втех	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluoro	obenzene		0.0310	0.0300	103	80-120			
4-Bromoflu	orobenzene		0.0299	0.0300	100	80-120			
Lab Batch	#: 3038399	Sample: 573366-055 / SMP	Batch:	1 Matrix	: Soil				
Units:	mg/kg	Date Analyzed: 01/13/18 15:40	SUR	ROGATE R	ECOVERY S	STUDY			
	TPH I	oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	tane		88.1	100	88	70-135			
o-Terpheny	1		44.2	50.0	88	70-135			

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or Lab Batch	rders: 57336 #: 3038399	6, Sample: 573366-056 / SMP	Batch	Project ID: : 1 Matrix:	212C-MD-0 Soil	01056.200	
Units:	mg/kg	Date Analyzed: 01/13/18 16:48	SUI	RROGATE RI	ECOVERY S	STUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1-Chlorooc	tane		86.1	100	86	70-135	
o-Terpheny	/l		44.6	50.0	89	70-135	
Lab Batch	#: 3038399	Sample: 573366-057 / SMP	Batch	: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 01/13/18 17:11	SUI	RROGATE RI	ECOVERY S	STUDY	
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		86.8	100	87	70-135	
o-Terpheny	/1		44.6	50.0	89	70-135	
Lab Batch	#: 3038360	Sample: 573366-002 / SMP	Batch	: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 01/13/18 17:30	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B			Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4 Difluor	ahanzana		0.0275	0.0200	02	80.120	
A-Bromoflu	orobenzene		0.0273	0.0300	92	80.120	
Lab Ratch	#• 3038360	Sample: 573366-001 / SMP	Batch	• 1 Matrix	Soil	80-120	
Lab Daten	mg/kg	Data Analyzad: 01/13/18 17:40					
Units.	iiig/kg	Date Anaryzeu. 01/15/18 17.49	501	RRUGATE RI	LCOVERY	STUDY	
	BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0259	0.0300	86	80-120	
4-Bromoflu	iorobenzene		0.0310	0.0300	103	80-120	
Lab Batch	#: 3038399	Sample: 573366-051 / SMP	Batch	: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 01/13/18 22:01	SUI	RROGATE RI	ECOVERYS	STUDY	
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		87.8	100	88	70-135	
o-Terpheny	/1		46.3	50.0	93	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or	ders : 57336	6, Sample: 573366 052 / SMP	Project ID: 212C-MD-01056.200						
Lab Datch #	ma/ka	Date Analyzed: 01/13/18 22:23	Datci						
Units.	iiig/kg	Date Analyzed. 01/15/18 22.25	SU	RROGATE R		STUDY			
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1 Chlansset		Analytes	00.2	100	[2]	70.125			
T-Chloroocta	ane		88.2	100	88	70-135			
0-1 erpnenyi	1. 2020200	S	46.3	50.0	93	70-135			
Lab Batch 7	#: 3038399	Sample: 5/3300-033/ SMP	Batci	h: 1 Matrix:	5011				
Units:	mg/kg	Date Analyzed: 01/13/18 22:44	SU	RROGATE R	ECOVERY S	STUDY			
	TPH by SW8015 Mod Analytes			True Amount [B]	Recovery %R	Control Limits %R	Flags		
1.011 (Analytes	00.5	100		50.125			
1-Chloroocta	ane		90.5	100	91	70-135			
o-lerphenyl		C 1 57227(C 054 / CMD	46.9	50.0	94	70-135			
Lab Batch #	#: 3038399	Sample: 5/3366-054 / SMP	Batch: 1 Matrix: Soil						
Units:	mg/kg	Date Analyzed: 01/13/18 23:06	SURROGATE RECOVERY STUDY						
TPH by SW8015 Mod			Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
1.011		Analytes		100	[2]				
1-Chloroocta	ane		108	100	108	70-135			
o-lerphenyl			55.9	50.0	112	70-135			
Lab Batch #	#: 3038399	Sample: 5/3366-050/ SMP	Batch	h: 1 Matrix:	Soll				
Units:	mg/kg	Date Analyzed: 01/13/18 23:48	SU	RROGATE R	ECOVERY S	STUDY			
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chloroocta	ane		73.0	100	73	70-135			
o-Terphenyl			36.0	50.0	72	70-135			
Lab Batch #	#: 3038399	Sample: 573366-048 / SMP	Batcl	h: 1 Matrix:	Soil				
Units:	mg/kg	Date Analyzed: 01/14/18 00:09	SU	RROGATE R	ECOVERY S	STUDY			
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chloroocta	ane		108	100	108	70-135			
o-Terphenyl			56.1	50.0	112	70-135			

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or Lab Batch	:ders : 57336 #: 3038367	6, Sample: 573366-032 / SMP	Batch	Project ID:	212C-MD-0 Soil	01056.200				
Units:	mg/kg	Date Analyzed: 01/15/18 17:16	SUF	RROGATE R	ECOVERY	STUDY				
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluoro	obenzene		0.0243	0.0300	81	80-120				
4-Bromoflu	orobenzene		0.0256	0.0300	85	80-120				
Lab Batch	#: 3038367	Sample: 573366-046 / SMP	P Batch: 1 Matrix: Soil							
Units:	mg/kg	Date Analyzed: 01/15/18 17:35	SUI	RROGATE R	ECOVERY S	STUDY				
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1.4-Difluor	henzene	Anarytes	0.0283	0.0200	04	80.120				
4-Bromoflu	orobenzene		0.0283	0.0300	94	80.120				
Lab Batch	#• 3038367	Sample: 573366-057 / SMP	Batch	• 1 Matrix:	Soil	80-120				
Units:	mg/kg	Date Analyzed: 01/15/18 17:54	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B			Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluoro	obenzene	•	0.0261	0.0300	87	80-120				
4-Bromoflu	orobenzene		0.0261	0.0300	87	80-120				
Lab Batch	#: 3038511	Sample: 573366-049 / SMP	Batch	: 1 Matrix:	: Soil					
Units:	mg/kg	Date Analyzed: 01/17/18 03:02	SUI	RROGATE R	ECOVERY S	STUDY				
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooct	tane		90.3	99.9	90	70-135				
o-Terpheny	1		46.5	50.0	93	70-135				
Lab Batch	#: 3038511	Sample: 573366-031 / SMP	Batch	: 1 Matrix:	Soil					
Units:	mg/kg	Date Analyzed: 01/17/18 11:47	SUI	RROGATE R	ECOVERY S	STUDY				
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooct	tane		87.8	100	88	70-135				
o-Terpheny	1		38.2	50.0	76	70-135				

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Orders : 573366,			Project ID: 212C-MD-01056.200						
Lau Datel #: 3030001 Sample: 3/3300-031 / SMP									
onno.	iiig/kg	Date Analyzed: 01/11/18 15:11	SURROGATE RECOVERY STUDY						
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluor	obenzene		0.0305	0.0300	102	80-120			
4-Bromoflu	orobenzene		0.0264	0.0300	88	80-120			
Lab Batch	#: 3038601	Sample: 573366-016 / SMP	Batch	a: 1 Matrix:	: Soil				
Units:	mg/kg	Date Analyzed: 01/17/18 16:39	SUI	STUDY					
	втех	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1 4-Difluor	obenzene	1 mary tes	0.0283	0.0300	94	80-120			
4-Bromoflu	orobenzene		0.0338	0.0300	113	80-120			
Lab Batch	#: 3038601	Sample: 573366-030 / SMP	Batch	: 1 Matrix:	: Soil	00 120			
Units:	mg/kg	Date Analyzed: 01/17/18 16:58	SII	RROGATE R	FCOVERV	STUDV			
	BTE	K by EPA 8021B	Found [A]	Amount [B]	Recovery %R	Limits %R	Flags		
		Analytes			լոյ				
1,4-Difluor	obenzene		0.0295	0.0300	98	80-120			
4-Bromoflu	orobenzene		0.0242	0.0300	81	80-120			
Lab Batch	#: 3038601	Sample: 573366-017 / SMP	Batch: 1 Matrix: Soil						
Units:	mg/kg	Date Analyzed: 01/17/18 17:17	SURROGATE RECOVERY STUDY						
	ВТЕУ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	obenzene		0.0270	0.0300	90	80-120			
4-Bromoflu	orobenzene		0.0322	0.0300	107	80-120			
Lab Batch	#: 3038355	Sample: 7637493-1-BLK / H	BLK Batch	a: 1 Matrix:	: Solid				
Units:	mg/kg	Date Analyzed: 01/12/18 19:25	Date Analyzed: 01/12/18 19:25 SURROGATE RECOVERY STUDY						
	втех	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	obenzene		0.0299	0.0300	100	80-120			
4-Bromoflu	orobenzene		0.0277	0.0200	02	00.120			

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or Lab Batch	ders : 57336 #: 3038391	6, Sample: 7637444-1-BLK /	BLKBatch:1Matrix: Solid					
Units: mg/kg Date Analyzed: 01/13/18 04:48 SURROGATE RECOVERY ST								
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			լոյ			
1-Chlorooct	ane		94.8	100	95	70-135		
o-Terphenyl			49.9	50.0	100	70-135		
Lab Batch	#: 3038360	Sample: 7637495-1-BLK /	BLK Batch	n: 1 Matrix	: Solid			
Units:	mg/kg	Date Analyzed: 01/13/18 10:49	SU	STUDY				
	втех	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluoro	benzene	<i>u</i>	0.0273	0.0300	91	80-120		
4-Bromoflue	orobenzene		0.0257	0.0300	86	80-120		
Lab Batch	#: 3038399	Sample: 7637445-1-BLK /	BLK Batcl	n: 1 Matrix	: Solid			
Units:	mg/kg	Date Analyzed: 01/13/18 14:32	SURROGATE RECOVERY STUDY					
	TPH	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
1-Chlorooct	ane		71.2	100	71	70-135		
o-Terphenyl			35.1	50.0	70	70-135		
Lab Batch	#: 3038367	Sample: 7637511-1-BLK /	BLK Batch	n: 1 Matrix	: Solid			
Units:	mg/kg	Date Analyzed: 01/15/18 15:39	SURROGATE RECOVERY STUDY					
	втех	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluoro	benzene		0.0279	0.0300	93	80-120		
4-Bromofluo	orobenzene		0.0244	0.0300	81	80-120		
Lab Batch	#: 3038511	Sample: 7637574-1-BLK /	BLK Batcl	n: 1 Matrix	: Solid			
Units:	mg/kg	Date Analyzed: 01/16/18 22:08	SURROGATE RECOVERY STUDY					
	TPH	oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooct	ane	*	92.9	100	93	70-135		
o Ternhenvi			40.0	50.0	1 100			

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B


Project Name: Citation X Fed Com #1

Units: mg/kg Date Analyzed: UI/1/18 09.59 SURROGATE RECOVERY STUDY BTEX by EPA 8021B Amaunt Analytes Amount [A] Amount [B] True Amount [B] Recovery %R Control Limits %R Flags 1.4-Difluorobenzene 0.0296 0.0300 99 80-120 - 4-Bromofluorobenzene 0.0281 0.0300 94 80-120 - Lab Batch #: 3038355 Sample: 7637493-1-BKS/BKS Batch: 1 Matrix: Solid - Units: mg/kg Date Analyzed: 01/12/18 17.29 SURROGATE RECOVERY STUDY - 1.4-Difluorobenzene 0.0297 0.0300 99 80-120 - 1.4-Difluorobenzene 0.0297 0.0300 99 80-120 - 1.4-Difluorobenzene 0.0297 0.0300 99 80-120 - 1.4-Difluorobenzene 0.0278 Batch: 1 Matrix: Solid - 1.4-Difluorobenzene 0.0278 Batch: 1 Matrix: Solid - 1.4-Difluorobenzene 0.0278 0.0278	Work Orders : 573366, Lab Batch #: 3038601 Sample: 7637671-1-BLI Units: mg/kg Date Analyzed: 01/17/18 09:59	BLK Batch	Project ID 1: 1 Matrix	: 212C-MD-0 : Solid	01056.200			
BTEX by EPA 8021B Amount Found [A] True Amount [A] True Amount [B] Recovery (B) Control 5%R Flags 1.4-Difluorobenzene 0.0296 0.0300 94 80-120 4 4-Bronnofluorobenzene 0.0296 0.0300 94 80-120 4 Lab Batch #; 3038355 Sample: 7637493-1-BKS / BKS Batch: 1 Matrix: Solid 1 Units: mg/kg Date Analyzed: 01/12/18 17:29 SURROGATE RECOVERY STUDY Flags Analytes 0.0297 0.0300 93 80-120 1 1.4-Difluorobenzene 0.0297 0.0300 93 80-120 1 1.4-Difluorobenzene 0.0297 0.0300 93 80-120 1 1.4-Difluorobenzene 0.0278 0.0300 93 80-120 1 Lab Batch #: 3038391 Sample: 7637444-1-BKS / BKS Batch: 1 Matrix: Solid 1 Units: mg/kg Date Analyzed: 01/13/18 05:08 Surrowand Found Fo	Units:	mg/kg	Date Analyzed: 01/17/18 09:59	SU	RROGATE R	ECOVERYS	STUDY	
Analytes IPI IPI IPI IPI 1.4-Difluorobenzene 0.0296 0.0200 99 80-120 Lab Batch #: 3038355 Sample: 7637493-1-BKS / BKS Batch: 1 Matrix: Solid Imits: Solid Units: mg/kg Date Analyzed: 01/12/18 17:29 SURROGATE RECOVERY STUDY Fage BTEX by EPA 8021B Amount Found I Fauge Recovery 10 Control Limits 70% Fage 1.4-Difluorobenzene 0.0278 0.0300 99 80-120 Imits 70% Fage 1.4-Difluorobenzene 0.0277 0.0300 93 80-120 Imits 70% Lab Batch #: 3038391 Sample: 7637444-1-BKS / BKS Batch: 1 Matrix: Solid Imits 70% Units: mg/kg Date Analyzed: 01/13/18 05:08 SURROGATE RECOVERY STUDY Imits 70% 1-Chlorooctame 93.1 100 93 70-135 0-Terphenyl 57.4 50.0 115 70-135 Lab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid Units: <th></th> <th>втех</th> <th>K by EPA 8021B</th> <th>Amount Found [A]</th> <th>True Amount [B]</th> <th>Recovery %R</th> <th>Control Limits %R</th> <th>Flags</th>		втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1.4-Difluorobenzene 0.0296 0.0300 99 80-120 4-Bromefluorobenzene 0.0300 94 80-120 Lab Batch #: 3038355 Sample: 7637493-1-BKS/BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/12/18 17:29 SURROGATE RECOVERS STUDY BTEX by EPA 8021B Amount (A) True Amount [A] Recovery [B] Control Limits %R Flags 1.4-Difluorobenzene 0.0297 0.0300 99 80-120			Analytes			נען		
4-Bromofhuorobenzene 0.0281 0.0300 94 80-120 Lab Batch #: 3038355 Sample: 7637493-1-BKS / BKS Batch: 1 Matrix: Solid Vertice Control Imits Necovery Limits %R %R Plags BTEX by EPA 8021B Amount Found True Recovery Control Flags 1.4-Diffuorobenzene 0.0297 0.0300 99 80-120 Environmentation Flags 1.4-Diffuorobenzene 0.0297 0.0300 93 80-120 Environmentation Flags 1.4-Diffuorobenzene 0.0297 0.0300 93 80-120 Environmentation Flags 1.4-Batch #: 3038391 Sample: 7637444-1-BKS / BKS Batch: 1 Matrix: Solid Units: Manalytes Flags 1.4-Bottooctane 0.1/13/18 05:08 SURROGATE RECOVERY STUDY Flags %R fl91 Single Single <td< td=""><td>1,4-Difluor</td><td>obenzene</td><td></td><td>0.0296</td><td>0.0300</td><td>99</td><td>80-120</td><td></td></td<>	1,4-Difluor	obenzene		0.0296	0.0300	99	80-120	
Lab Batch #: 3038355 Sample: 7637493-1-BKS / BKS Batch: 1 Matrix: Sold Units: mg/kg Date Analyzed: 01/12/18 17:29 SURROGATE RECOVERY STUDY BTEX by EPA 8021B Amount [A] Amount [B] True [B] Recovery [D] Control Amount [B] Flags 1.4-Diffuorobenzene 0.0297 0.0300 99 80-120 4-Bromofluorobenzene 0.0297 0.0300 93 80-120 Lab Batch #: 3038391 Sample: 7637444-1-BKS / BKS Batch: 1 Matrix: Sold Units: mg/kg Date Analyzed: 01/13/18 05:08 SURROGATE Recovery Recovery Control Amount [A] Recovery [B] Control Amount [B] Flags 1-Chlorooctane 93.1 100 93 70-135 Lab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 08:55 SURROGATE Recovery Recovery %R C	4-Bromoflu	orobenzene		0.0281	0.0300	94	80-120	
Units: mg/kg Date Analyzed: 01/12/18 17:29 SURROGATE RECOVERY STUDY BTEX by EPA 8021B Amount Analytes True Annount [A] True Annount [B] Recovery %R Control Limits %R Flags 1.4-Difluorobenzene 0.0297 0.0300 99 80-120 - 4-Bromofluorobenzene 0.0278 0.0300 93 80-120 - Lab Batch #: 3038391 Sample: 7637444-1-BKS / BKS Batch: 1 Matrix: Solid - Units: mg/kg Date Analyzed: 01/13/18 05:08 SURROGATE RECOVERY STUDY - TPH by SW8015 Mod Analytes Amount [A] True Amount [B] Recovery %R Control Limits %R Flags 1-Chlorooctane 93.1 100 93 70-135 - o-Terphenyl 57.4 50.0 115 70-135 - Lab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid - I.4-Difluorobenzene 0.0299 0.0300 100<	Lab Batch	#: 3038355	Sample: 7637493-1-BKS /	BKS Batch	n: 1 Matrix	: Solid		
BTEX by EPA 8021BAmount Found [A]True Amount Found [B]True Amount [B]Recover Sysk (D)Control Limits (M)Page1.4-Difluorobetzene0.02770.03009980-1204-Bromofluorobetzene0.02780.03009380-1201.ab Batch #:3038391Sample: 7637444-1-BKS BGUII Matrix: SolidLab Batch #:3038391Sample: 7637444-1-BKS BGUIMatrix: SolidTPH by SW8015 ModAmount [B]Recovery Sysk (D)Control (MR)FlagsAmalytes93.110009070-135I-Chlorootate #:303830Sample: 7637495-1-BKS (D)Batch1Matrix: SolidI-Chlorootate #:303830Sample: 7637495-1-BKS (D)Batch70-1351Inter marks:93.11009080-10I-Chlorootate #:303830Sample: 7637495-1-BKS (D)Batch1Matrix: SolidI-Chlorootate #:0.03050.030010080-120I-Chlorootate #:0.03050.030010080-120I-Chlorootate #:0.03050.030010080-120I-Chlorootate #:0.03050.030010080-120I-Chlorootate #:0.03050.030010080-120I-Chlorootate #:0.03050.0300100<	Units:	mg/kg	Date Analyzed: 01/12/18 17:29	SU	RROGATE R	ECOVERY	STUDY	
1.4-Diffuorobenzene 0.0297 0.0300 99 80-120 4-Bromoffuorobenzene 0.0278 0.0300 93 80-120 Lab Batch #: 3038391 Sample: 7637444-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 05:08 SURROGATE RECOVERY STUDY Flags TPH by SW8015 Mod Amount [A] True [B] Recovery 93.1 Control 1.00 93 70-135 1-Chlorooctane 93.1 100 93 70-135 50.0 115 70-135 1-Stab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 08:55 SURROGATE RECOVERY STUDY 50.0 115 70-135 Lab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 08:55 SURROGATE RECOVERY STUDY Linits 1.4-Diffuorobenzene 0.0305 0.0300 100 80-120 Linits		ВТЕХ	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene 0.0278 0.0300 93 80-120 Lab Batch #: 3038391 Sample: 7637444-1-BKS / BKS Batch : 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 05:08 SURROGATE RECVERY STUDY Flags TPH by SW8015 Mod Amount [A] True [B] Recovery %R [P] Control Limits %R Flags 1-Chlorooctane 93.1 100 93 70-135 - o-Terphenyl 57.4 50.0 115 70-135 - Lab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid Flags Units: mg/kg Date Analyzed: 01/13/18 08:55 SURROGATE RECOVERY STUDY Flags BTEX by EPA 8021B Amount [A] Manount [A] True Amount [B] Recovery %R Control Limits %R Flags 1.4-Difluorobenzene 0.0305 0.0300 100 80-120 - Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg	1,4-Difluor	obenzene		0.0297	0.0300	99	80-120	
Lab Batch #: 3038391 Sample: 7637444-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 05:08 SURROGATE RECOVERY STUDY TPH by SW8015 Mod Amount [A] True Found [A] Amount [B] Recovery %R Control Limits %R Flags 1-Chlorooctane 93.1 100 93 70-135 - o-Terphenyl 57.4 50.0 115 70-135 - Lab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 08:55 SurrOGATE Recovery %R Control Limits %AR Flags 1.4-Diffuorobenzene 00/113/18 08:55 SurrOGATE Recovery %R Control Limits %AR Flags 1.4-Diffuorobenzene 0.0300 0.0300 102 80-120 - Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: 1 Matrix: Solid Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: 1	4-Bromoflu	orobenzene		0.0278	0.0300	93	80-120	
Units: mg/kg Date Analyzed: 01/13/18 05:08 SURROGATE RECOVERY STUDY TPH by SW8015 Mod Amount [A] Amount [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1-Chlorooctane 93.1 100 93 70-135 - o-Terpheny 57.4 50.0 115 70-135 - Lab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid - Units: mg/kg Date Analyzed: 01/13/18 08:55 SURROGATE RECOVERY STUDY - I.4-Difluorobenzene 0.0305 0.0300 102 80-120 - 1.4-Difluorobenzene 0.0305 0.0300 100 80-120 - Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: 1 Matrix: Solid Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 14:54 SURROGATE RECOVERY STUDY - Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: <	Lab Batch	#: 3038391	Sample: 7637444-1-BKS /	BKS Batch	n: 1 Matrix	: Solid		
TPH by SW8015 Mod AnalytesAmount Found [A]True Amount [B]Recovery %R [D]Control Limits %R [D]Flags1-Chlorooctane93.11009370-1350o-Terphenyl57.450.011570-1350Lab Batch #: 3038360Sample: 7637495-1-BKS / BKSBatch:1Matrix: SolidUnits:mg/kgDate Analyzed: 01/13/18 08:55SURROGATE RECOVERY STUDYFlagsBTEX by EPA 8021B AnalytesAmount [A]True Amount [A]Recovery (D)Control LimitsFlags1.4-Difluorobenzene0.03050.030010280-12001.4-Difluorobenzene0.02990.030010080-1200Lab Batch #: 3038399Sample: 7637445-1-BKS / BKSBatch:1Matrix: SolidUnits:mg/kgDate Analyzed: 01/13/18 14:54SURROGATE RECOVERY STUDY0Lab Batch #: 3038399Sample: 7637445-1-BKS / BKSBatch:1Matrix: SolidUnits:mg/kgDate Analyzed: 01/13/18 14:54SURROGATE RECOVERY STUDY1Lab Batch #: 3038399Sample: 7637445-1-BKS / BKSBatch:1Matrix: SolidUnits:mg/kgDate Analyzed: 01/13/18 14:54SURROGATE RECOVERY STUDY1Lab Batch #: 3038399Sample: 7637445-1-BKS / BKSBatch:1Matrix: SolidUnits:mg/kgDate Analyzed: 01/13/18 14:54Surroof and analyzed: 01/13/18 14:54FlagsTPH by SW8015 ModAmount [A] <t< td=""><td>Units:</td><td>mg/kg</td><td>Date Analyzed: 01/13/18 05:08</td><td>SU</td><td>RROGATE R</td><td>ECOVERY</td><td>STUDY</td><td></td></t<>	Units:	mg/kg	Date Analyzed: 01/13/18 05:08	SU	RROGATE R	ECOVERY	STUDY	
Analytes IDI IDI 1-Chlorooctane 93.1 100 93 70-135 o-Terphenyl 57.4 50.0 115 70-135 Lab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 08:55 SURROGATE RECOVERY STUDY Flags BTEX by EPA 8021B Amount Found [A] True Analytes Recovery %R [D] %R [D] Flags 1.4-Difluorobenzene 0.0305 0.0300 102 80-120 4-Bromofluorobenzene 0.0299 0.0300 100 80-120 Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 14:54 SURROGATE RECOVERY STUDY Imits: Solid Units: mg/kg Date Analyzed: 01/13/18 14:54 Surroofluorobenzene Control [A] Flags I-Chlorooctame Date Analyzed: 01/13/18 14:54 Surroofluorobenzene Control [B] Flags Chanalytes Date Analyzed: 01/13/18 14:54<		TPHI	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1-Chlorooctane 93.1 100 93 70-135 o-Terphenyl 57.4 50.0 115 70-135 Lab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 08:55 SURROGATE RECOVERY STUDY Found [A] Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1.4-Difluorobenzene 0.0305 0.0300 102 80-120 4-Bromofluorobenzene 0.0299 0.0300 100 80-120 Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 14:54 SURROGATE Control Limits %R Flags Units: mg/kg Date Analyzed: 01/13/18 14:54 SURROGATE Control Limits %R Flags I-Chlorooctane 70.6 100 71 70-135 Flags 1-Chlorooctane 70.6 100 71 <td< td=""><td></td><td></td><td>Analytes</td><td></td><td></td><td>[D]</td><td></td><td></td></td<>			Analytes			[D]		
o-Terphenyl 57.4 50.0 115 70-135 Lab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 08:55 SURROGATE RECOVERY STUDY BTEX by EPA 8021B Amalytes Amount [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1.4-Difluorobenzene 0.0305 0.0300 102 80-120 40-120	1-Chlorooc	tane		93.1	100	93	70-135	
Lab Batch #: 3038360 Sample: 7637495-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 08:55 SURROGATE RECOVERY STUDY BTEX by EPA 8021B Amount [A] True [B] Recovery %R [D] Control Limits %R Flags 1,4-Difluorobenzene 0.0305 0.0300 102 80-120 4-Bromofluorobenzene 0.0299 0.0300 100 80-120 Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 14:54 SURROGATE RECOVERY STUDY Flags TPH by SW8015 Mod Amount [A] True Found [A] Recovery %R [D] Control Limits %R Flags 1-Chlorooctane 70.6 100 71 70-135	o-Terpheny	1		57.4	50.0	115	70-135	
Units: mg/kg Date Analyzed: 01/13/18 08:55 SURROGATE RECOVERY STUDY BTEX by EPA 8021B Amount [A] True Amount [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1,4-Difluorobenzene 0.0305 0.0300 102 80-120	Lab Batch	#: 3038360	Sample: 7637495-1-BKS /	BKS Batch	n: 1 Matrix	: Solid		
BTEX by EPA 8021BAmount Found [A]True Amount [B]Recovery %R [D]Control Limits %RFlags1,4-Difluorobenzene0.03050.030010280-1204-Bromofluorobenzene0.02990.030010080-120Lab Batch #: 3038399Sample: 7637445-1-BKS / BKSBatch:1Matrix: SolidUnits:mg/kgDate Analyzed: 01/13/18 14:54SURROGATE RECOVERY STUDYTPH by SW8015 ModAmount [A]True AnalytesRecovery %R (D]Control Limits1-Chlorooctane70.61007170-1350-Terphenyl42.250.08470.135	Units:	mg/kg	Date Analyzed: 01/13/18 08:55	SU	RROGATE R	ECOVERY	STUDY	
1,4-Difluorobenzene 0.0305 0.0300 102 80-120 4-Bromofluorobenzene 0.0299 0.0300 100 80-120 Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 14:54 SURROGATE RECOVERY STUDY TPH by SW8015 Mod Amount Found [A] True Amount [B] Recovery %R [D] Control Limits %R [D] Flags 1-Chlorooctane 70.6 100 71 70-135 o-Terphenyl 42.2 50.0 84 70.135		ВТЕХ	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene 0.0299 0.0300 100 80-120 Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 14:54 SURROGATE RECOVERY STUDY TPH by SW8015 Mod Amount [A] True Amount [B] Recovery %R [D] Control Limits %R Flags 1-Chlorooctane 70.6 100 71 70-135 o-Ternhenyl 42.2 50.0 84 70.135	1,4-Difluor	obenzene		0.0305	0.0300	102	80-120	
Lab Batch #: 3038399 Sample: 7637445-1-BKS / BKS Batch: 1 Matrix: Solid Units: mg/kg Date Analyzed: 01/13/18 14:54 SURROGATE RECOVERY STUDY TPH by SW8015 Mod Amount [A] True Found [A] Recovery [B] Control Limits %R Flags 1-Chlorooctane 70.6 100 71 70-135 70-135	4-Bromoflu	orobenzene		0.0299	0.0300	100	80-120	
Units: mg/kg Date Analyzed: 01/13/18 14:54 SURROGATE RECOVERY STUDY TPH by SW8015 Mod Amount [A] True Amount [A] True Amount [B] Recovery %R [D] Control Limits %R [D] Flags 1-Chlorooctane 70.6 100 71 70-135 o-Terphenyl 42.2 50.0 84 70.135	Lab Batch	#: 3038399	Sample: 7637445-1-BKS /	BKS Batch	n: 1 Matrix	: Solid	1 1	
TPH by SW8015 ModAmount Found [A]True Amount [B]Recovery %R [D]Control Limits %RFlags1-Chlorooctane70.61007170-135o-Terphenyl42.250.08470.135	Units:	mg/kg	Date Analyzed: 01/13/18 14:54	SU	RROGATE R	ECOVERY	STUDY	
1-Chlorooctane 70.6 100 71 70-135 o-Terphenyl 42.2 50.0 84 70.135		TPH I	oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl 42.2 50.0 84 70.135	1-Chlorooc	tane		70.6	100	71	70-135	
	o-Ternheny	1		12.2	50.0	Q/1	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Orders : 573366, Lab Batch #: 3038367 Sample: 7637511-1-BK Units: mg/kg Date Analyzed: 01/15/18 13:44	6, Sample: 7637511-1-BKS /	BKS Bate	Project ID h: 1 Matrix	: 212C-MD-0 : Solid	01056.200		
Units:	mg/kg	Date Analyzed: 01/15/18 13:44	SU	RROGATE R	ECOVERY	STUDY	
	BTE	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	robenzene		0.0308	0.0300	103	80-120	
4-Bromoflu	uorobenzene		0.0296	0.0300	99	80-120	
Lab Batch	#: 3038511	Sample: 7637574-1-BKS /	BKS Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 01/16/18 22:31	SU	RROGATE R	ECOVERY	STUDY	
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	etane		90.7	100	91	70-135	
o-Terpheny	vl		44.6	50.0	89	70-135	
Lab Batch	#: 3038601	Sample: 7637671-1-BKS /	BKS Bate	h: 1 Matrix	: Solid	, , , , , , , , , , , , , , , , , , , ,	
Units:	mg/kg	Date Analyzed: 01/17/18 08:04	SU	RROGATE R	ECOVERY	STUDY	
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	robenzene		0.0322	0.0300	107	80-120	
4-Bromoflu	uorobenzene		0.0304	0.0300	101	80-120	
Lab Batch	#: 3038355	Sample: 7637493-1-BSD /	BSD Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 01/12/18 17:49	SU	RROGATE R	ECOVERY	STUDY	
	втех	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	robenzene		0.0295	0.0300	98	80-120	
4-Bromoflu	uorobenzene		0.0286	0.0300	95	80-120	
Lab Batch	#: 3038391	Sample: 7637444-1-BSD /	BSD Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 01/13/18 05:29	SU	RROGATE R	ECOVERY	STUDY	
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		92.1	100	92	70-135	
o-Ternhens	v1		55.8	50.0	112	70-135	
	,		55.6		112	,0155	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Orders : 573366, Lab Batch #: 3038360 Sample: 7637495-1-BS Units: mg/kg Date Analyzed: 01/13/18 09:14	56, Sample: 7637495-1-BSD /	BSD Batch	Project ID: h: 1 Matrix:	212C-MD-0 Solid	01056.200		
Units:	mg/kg	Date Analyzed: 01/13/18 09:14	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1,4-Difluor	obenzene		0.0304	0.0300	101	80-120	
4-Bromoflu	lorobenzene		0.0313	0.0300	104	80-120	
Lab Batch	#: 3038399	Sample: 7637445-1-BSD /	BSD Batch	h: 1 Matrix:	Solid		
Units:	mg/kg	Date Analyzed: 01/13/18 15:17	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		73.4	100	73	70-135	
o-Terpheny	ſ		38.8	50.0	78	70-135	
Lab Batch	#: 3038367	Sample: 7637511-1-BSD /	BSD Batch	h: 1 Matrix:	Solid		
Units:	mg/kg	Date Analyzed: 01/15/18 14:03	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1,4-Difluor	obenzene		0.0312	0.0300	104	80-120	
4-Bromoflu	lorobenzene		0.0303	0.0300	101	80-120	
Lab Batch	#: 3038511	Sample: 7637574-1-BSD /	BSD Batch	h: 1 Matrix:	Solid		
Units:	mg/kg	Date Analyzed: 01/16/18 22:54	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		88.7	100	89	70-135	
o-Terpheny	rl		44.6	50.0	89	70-135	
Lab Batch	#: 3038601	Sample: 7637671-1-BSD /	BSD Batch	h: 1 Matrix:	Solid		
Units:	mg/kg	Date Analyzed: 01/17/18 08:23	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0303	0.0300	101	80-120	
4-Bromoflu	orobenzene		0.0304	0.0300	101	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or Lob Potch	ders : 57336	6, Sample: 573116 003 S / MS	Datah	Project ID:	: 212C-MD-0	01056.200	
Lab Dattin	mg/kg	Date Analyzed: 01/12/18 18:09					
omes.	iiig/kg	Datt Analyzett. 01/12/18 18:09	SUR	RECEATE R	ECOVERYS	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			נען		
1,4-Difluor	obenzene		0.0296	0.0300	99	80-120	
4-Bromoflu	orobenzene		0.0290	0.0300	97	80-120	
Lab Batch	#: 3038391	Sample: 572902-004 S / MS	Batch:	: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 01/13/18 06:09	SUF	RROGATE R	ECOVERY S	STUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	tane		78.8	100	70	70.135	
o-Ternheny	1		/8.8	50.0	87	70-135	
Lab Batch	#• 3038399	Sample: 573366-055 S / MS		· 1 Matrix	· Soil	70-155	
Units:	mg/kg	Date Analyzed: 01/13/18 16:02	SUE		ECOVEDV	STUDY	
		Duce 111111/2001 01/10/10 10:02	SUF	KOGATE K	ECOVERY	SIUDY	
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	tane		82.1	100	82	70-135	
o-Terpheny	1		41.2	50.0	82	70-135	
Lab Batch	#: 3038360	Sample: 573366-047 S / MS	Batch:	: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 01/13/18 18:28	SUF	RROGATE R	ECOVERY S	STUDY	
	втех	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0308	0.0300	103	80-120	
4-Bromoflu	orobenzene		0.0286	0.0300	95	80-120	
Lab Batch	#: 3038367	Sample: 573485-001 S / MS	Batch:	: 1 Matrix	: Soil	1	
Units:	mg/kg	Date Analyzed: 01/15/18 14:22	SUF	RROGATE R	ECOVERY S	STUDY	
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene		0.0311	0.0300	104	80-120	
4-Bromoflu	orobenzene		0.0310	0.0300	103	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Or	ders : 57336	6, Somelar 572002 001 S / Mi	S Dotob	Project ID:	212C-MD-0	01056.200	
Lab Daten	#: 5056511	Date Analyzed: 01/16/18 23:40					
omes.	iiig/kg	Date Analyzeu: 01/10/18 25.40	SUF	RUGATE R	ECOVERYS	STUDY	
	TPHI	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[0]		
1-Chlorooct	ane		85.1	99.8	85	70-135	
o-Terpheny	l		36.0	49.9	72	70-135	
Lab Batch	#: 3038355	Sample: 5/3116-003 SD / N	MSD Batch:	: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 01/12/18 18:28	SUF	RROGATE R	ECOVERY S	STUDY	
	ВТЕХ	A by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluor	benzene	Amarytes	0.0252	0.0200	117	80.120	
4-Bromoflu	orobenzene		0.0332	0.0300	111/	80.120	
Lab Batch	#• 3038391	Sample: 572902-004 SD / N	MSD Batch	• 1 Matrix	· Soil	80-120	
Lab Daten	mg/kg	Date Analyzed: 01/13/18/06:29				OTH DV	
Cints.	ing/kg	Date Analyzeu. 01/15/10/00.25	SUF	KOGATE K	ECOVERYS	STUDY	
	TPHI	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane	1 Mary tes	80.7	100	01	70.125	
o-Terpheny			30.7	50.0	70	70-135	
Lab Batch	#: 3038360	Sample: 573366-047 SD / N	MSD Batch:	: 1 Matrix	: Soil	/0-155	
Unite.	mg/kg	Date Analyzed: 01/13/18 09:52				OTUDV	
Cints.	ing/kg	Date Analyzet. 01/15/10 09.52	50F	KOGATE K	ECOVERYS	STUDY	
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene		0.0317	0.0300	106	80-120	
4-Bromoflu	orobenzene		0.0294	0.0300	98	80-120	
Lab Batch	#: 3038399	Sample: 573366-055 SD / M	MSD Batch:	: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 01/13/18 16:25	SUF	RROGATE R	ECOVERY S	STUDY	
	TPHI	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	ane		70.6	100	71	70-135	
o-Terpheny	1		36.2	50.0	72	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B



Project Name: Citation X Fed Com #1

Work Ord	ers : 57336	6,		Project ID:	212C-MD-0	1056.200	
Lab Batch #:	3038367	Sample: 573485-001 SD / M	ASD Batch	n: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 01/15/18 14:41	SU	RROGATE RE	ECOVERY S	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
1 4 Difluoraba		Analytes	0.0209	0.0200		00.120	
1,4-Dilluorobe	enzene		0.0298	0.0300	99	80-120	
4-Bromofluoro	obenzene		0.0298	0.0300	99	80-120	
Lab Batch #:	3038511	Sample: 572902-001 SD / N	MSD Batch	n: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 01/17/18 00:03	SU	RROGATE RE	ECOVERY S	STUDY	
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctan	e		83.4	100	83	70-135	
o-Terphenyl			38.5	50.0	77	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B





Project Name: Citation X Fed Com #1

Work Order #: 573366							Proj	ject ID:	212C-MD-	01056.200	
Analyst: ALJ	D	ate Prepar	ed: 01/12/20	18			Date A	nalyzed: (01/12/2018		
Lab Batch ID: 3038355 Sample: 7637493-1-	BKS	Bate	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE /]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00201	0.100	0.0948	95	0.0998	0.0882	88	7	70-130	35	
Toluene	< 0.00201	0.100	0.0928	93	0.0998	0.0864	87	7	70-130	35	
Ethylbenzene	< 0.00201	0.100	0.0908	91	0.0998	0.0848	85	7	71-129	35	
m,p-Xylenes	< 0.00402	0.201	0.182	91	0.200	0.170	85	7	70-135	35	
o-Xylene	< 0.00201	0.100	0.0902	90	0.0998	0.0854	86	5	71-133	35	
Analyst: ALJ	D	ate Prepar	ed: 01/13/20	18			Date A	nalyzed: (01/13/2018	•	
Lab Batch ID: 3038360 Sample: 7637495-1-	BKS	Bate	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE /]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	< 0.00200	0.0998	0.104	104	0.100	0.104	104	0	70-130	35	
Toluene	< 0.00200	0.0998	0.103	103	0.100	0.103	103	0	70-130	35	
Ethylbenzene	< 0.00200	0.0998	0.101	101	0.100	0.101	101	0	71-129	35	
m,p-Xylenes	< 0.00399	0.200	0.203	102	0.200	0.203	102	0	70-135	35	
o-Xylene	< 0.00200	0.0998	0.100	100	0.100	0.101	101	1	71-133	35	

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes





Project Name: Citation X Fed Com #1

Work Order #: 573366							Proj	ject ID:	212C-MD-	01056.200	
Analyst: ALJ	D	ate Prepar	ed: 01/15/20	18			Date A	nalyzed: (01/15/2018		
Lab Batch ID: 3038367 Sample: 7637511-1-	BKS	Batc	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / 1	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	< 0.00200	0.100	0.0986	99	0.100	0.0974	97	1	70-130	35	
Toluene	< 0.00200	0.100	0.0970	97	0.100	0.0958	96	1	70-130	35	
Ethylbenzene	< 0.00200	0.100	0.0953	95	0.100	0.0927	93	3	71-129	35	
m,p-Xylenes	< 0.00401	0.200	0.190	95	0.200	0.185	93	3	70-135	35	
o-Xylene	< 0.00200	0.100	0.0942	94	0.100	0.0931	93	1	71-133	35	
Analyst: ALJ	D	ate Prepar	ed: 01/17/20	18	•		Date A	nalyzed: (01/17/2018	•	
Lab Batch ID: 3038601 Sample: 7637671-1-	BKS	Batc	n #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE / 1	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	< 0.00200	0.0998	0.0755	76	0.100	0.0776	78	3	70-130	35	
Toluene	< 0.00200	0.0998	0.0757	76	0.100	0.0790	79	4	70-130	35	
Ethylbenzene	< 0.00200	0.0998	0.0784	79	0.100	0.0816	82	4	71-129	35	
m,p-Xylenes	< 0.00399	0.200	0.156	78	0.200	0.163	82	4	70-135	35	
o-Xylene	< 0.00200	0.0998	0.0808	81	0.100	0.0847	85	5	71-133	35	

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes





Project Name: Citation X Fed Com #1

Work Order	·#: 573366							Proj	ect ID: 2	212C-MD-0	01056.200	
Analyst:	OJS	D	ate Prepar	ed: 01/12/201	8			Date A	nalyzed: (01/15/2018		
Lab Batch ID	: 3038314 Sample: 7637422-1	-BKS	Batch	n#: 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUI	DY	
Analy	Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		<5.00	250	238	95	250	241	96	1	90-110	20	
Analyst:	OJS	D	ate Prepar	ed: 01/15/201	.8			Date A	nalyzed: (01/16/2018		
Lab Batch ID	: 3038452 Sample: 7637503-1	-BKS	Batch	n#: 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUI	DY	
Analy	Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride												
		<5.00	250	273	109	250	275	110	1	90-110	20	
Analyst:	OJS	<5.00 D	250 ate Prepar	273 ed: 01/15/201	109	250	275	110 Date A	1 nalyzed: (90-110 01/16/2018	20	
Analyst: Lab Batch ID	OJS : 3038453 Sample: 7637505-1	<5.00 -BKS	250 ate Prepar Batch	273 ed: 01/15/201	109 8	250	275	110 Date A	1 nalyzed: (Matrix: S	90-110)1/16/2018 Solid	20	
Analyst: Lab Batch ID Units:	OJS : 3038453 Sample: 7637505-1 mg/kg	<5.00 D-BKS	250 ate Prepar Batch BLAN	273 ed: 01/15/201 n #: 1 K /BLANK \$	109 8 SPIKE / 1	250 BLANK S	275 SPIKE DUPI	110 Date A	1 nalyzed: (Matrix: S RECOVI	90-110 01/16/2018 Solid E RY STUI	20 DY	
Analyst: Lab Batch ID Units: Analy	OJS : 3038453 Sample: 7637505-1- mg/kg Chloride by EPA 300	<5.00 D-BKS Blank Sample Result [A]	250 ate Prepar Batch BLAN Spike Added [B]	273 ed: 01/15/201 n #: 1 K /BLANK S Blank Spike Result [C]	109 8 SPIKE / I Blank Spike %R [D]	250 BLANK S Spike Added [E]	275 SPIKE DUPI Blank Spike Duplicate Result [F]	110 Date A LICATE Blk. Spk Dup. %R [G]	1 malyzed: () Matrix: S RECOVI	90-110 01/16/2018 Solid ERY STUI Control Limits %R	20 DY Control Limits %RPD	Flag

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100*(C)/[B]Blank Spike Duplicate Recovery [G] = 100*(F)/[E]All results are based on MDL and Validated for QC Purposes





Project Name: Citation X Fed Com #1

Work Order	r #: 573366							Proj	ect ID:	212C-MD-	01056.200	r.
Analyst:	OJS	D	ate Prepa	red: 01/16/201	8			Date A	nalyzed: (01/16/2018		
Lab Batch ID	Sample: 7637549-1	-BKS	Batc	h #: 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	NK /BLANK S	SPIKE /]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Anab	Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	,	<5.00	250	274	110	250	273	109	0	90-110	20	
Analyst:	ALJ	D	ate Prepa	red: 01/12/201	8	ļ	1	Date A	nalyzed: (01/13/2018	1	<u> </u>
Lab Batch ID	Sample: 7637444-1	-BKS	Batc	h #: 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	NK /BLANK S	SPIKE /]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	OY	
	TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analy	ytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Gasoline	Range Hydrocarbons (GRO)	<15.0	1000	1040	104	1000	993	99	5	70-135	35	
Diesel Ra	nge Organics (DRO)	<15.0	1000	1040	104	1000	1020	102	2	70-135	35	
Analyst:	ALJ	D	ate Prepa	red: 01/12/201	8			Date A	nalyzed: (01/13/2018		
Lab Batch ID	Sample: 7637445-1	-BKS	Batc	h #: 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	NK /BLANK S	SPIKE /]	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	ЭY	
Analy	TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline	Range Hydrocarbons (GRO)	<15.0	1000	860	86	1000	918	92	7	70-135	35	<u> </u>
Diesel Ra	nge Organics (DRO)	<15.0	1000	819	82	1000	860	86	5	70-135	35	

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes





Project Name: Citation X Fed Com #1

Work Order	#: 573366							Pro	ject ID:	212C-MD-(01056.200	
Analyst:	ARM	D	ate Prepa	red: 01/16/201	8			Date A	nalyzed: (01/16/2018		
Lab Batch ID:	3038511 Sample: 7637574	-1-BKS	Batc	h #: 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K /BLANK S	SPIKE / I	BLANK	SPIKE DUPI	LICATE	RECOV	ERY STUI	ΟY	
Analy	TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline R	ange Hydrocarbons (GRO)	<15.0	1000	923	92	1000	866	87	6	70-135	35	
Diesel Ran	ge Organics (DRO)	<15.0	1000	974	97	1000	925	93	5	70-135	35	

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



Project Name: Citation X Fed Com #1



Work Order # : 573366						Project II): 212C-N	MD-01056	5.200		
Lab Batch ID: 3038355	QC- Sample ID:	573116	-003 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed: 01/12/2018	Date Prepared:	01/12/2	018	An	alyst: A	ALJ					
Reporting Units: mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	[**]	[D]					[6]				
Benzene	< 0.00199	0.0996	0.0868	87	0.0994	0.0896	90	3	70-130	35	
Toluene	< 0.00199	0.0996	0.0852	86	0.0994	0.0865	87	2	70-130	35	
Ethylbenzene	< 0.00199	0.0996	0.0806	81	0.0994	0.0824	83	2	71-129	35	
m,p-Xylenes	< 0.00398	0.199	0.162	81	0.199	0.165	83	2	70-135	35	
o-Xylene	< 0.00199	0.0996	0.0818	82	0.0994	0.0824	83	1	71-133	35	
Lab Batch ID: 3038360	QC- Sample ID:	573366	-047 S	Ba	tch #:	1 Matrix	k: Soil				
Lab Batch ID: 3038360 Date Analyzed: 01/13/2018	QC- Sample ID: Date Prepared:	573366 01/13/2	-047 S 018	Ba An	tch #: alyst: A	1 Matri z ALJ	k: Soil				
Lab Batch ID:3038360Date Analyzed:01/13/2018Reporting Units:mg/kg	QC- Sample ID: Date Prepared:	573366 01/13/2 M	-047 S 018 I ATRIX SPIK I	Ba An E / MAT	tch #: alyst: A RIX SPI	1 Matrie ALJ KE DUPLICA	k: Soil TE REC	OVERY	STUDY		
Lab Batch ID: 3038360 Date Analyzed: 01/13/2018 Reporting Units: mg/kg BTEX by EPA 8021B Analytes	QC- Sample ID: Date Prepared: Parent Sample Result [A]	573366 01/13/2 M Spike Added [B]	-047 S 018 [ATRIX SPIK] Spiked Sample Result [C]	Ba An E / MAT Spiked Sample %R [D]	tch #: alyst: A RIX SPI Spike Added [E]	1 Matrix ALJ KE DUPLICA Duplicate Spiked Sample Result [F]	k: Soil TE RECO Spiked Dup. %R [G]	OVERY S RPD %	STUDY Control Limits %R	Control Limits %RPD	Flag
Lab Batch ID: 3038360 Date Analyzed: 01/13/2018 Reporting Units: mg/kg BTEX by EPA 8021B Analytes Benzene	QC- Sample ID: Date Prepared: Parent Sample Result [A] <0.00202	573366 01/13/2 M Spike Added [B] 0.101	-047 S 018 [ATRIX SPIK] Spiked Sample Result [C] 0.0970	Ba An E / MAT Spiked Sample %R [D] 96	tch #: alyst: A RIX SPI Spike Added [E] 0.100	1 Matrix ALJ KE DUPLICA Duplicate Spiked Sample Result [F] 0.0819	r: Soil TE REC Spiked Dup. %R [G] 82	OVERY S RPD % 17	STUDY Control Limits %R 70-130	Control Limits %RPD 35	Flag
Lab Batch ID: 3038360 Date Analyzed: 01/13/2018 Reporting Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene	QC- Sample ID: Date Prepared: Parent Sample Result [A] <0.00202 <0.00202	573366 01/13/2 M Spike Added [B] 0.101 0.101	-047 S 018 [ATRIX SPIK] Spiked Sample Result [C] 0.0970 0.0883	Ba An E / MAT Spiked Sample %R [D] 96 87	tch #: alyst: A RIX SPI Spike Added [E] 0.100 0.100	1 Matrix ALJ KE DUPLICA Duplicate Spiked Sample Result [F] 0.0819 0.0736	r: Soil TE RECO Spiked Dup. %R [G] 82 74	OVERY 5 RPD % 17 18	STUDY Control Limits %R 70-130 70-130	Control Limits %RPD 35 35	Flag
Lab Batch ID: 3038360 Date Analyzed: 01/13/2018 Reporting Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene	QC- Sample ID: Date Prepared: Parent Sample Result [A] <0.00202 <0.00202 <0.00202	573366 01/13/2 M Spike Added [B] 0.101 0.101 0.101	-047 S 018 [ATRIX SPIK] Spiked Sample Result [C] 0.0970 0.0883 0.0742	Ba An E / MAT Spiked Sample %R [D] 96 87 73	tch #: alyst: A RIX SPI Spike Added [E] 0.100 0.100 0.100	1 Matrix ALJ KE DUPLICA Duplicate Spiked Sample Result [F] 0.0819 0.0736 0.0662	 x: Soil TE RECO Spiked Dup. %R [G] 82 74 66 	OVERY 5 RPD % 17 18 11	STUDY Control Limits %R 70-130 70-130 71-129	Control Limits %RPD 35 35 35 35	Flag
Lab Batch ID: 3038360 Date Analyzed: 01/13/2018 Reporting Units: mg/kg BTEX by EPA 8021B Analytes Benzene Toluene Ethylbenzene mg-Xylenes	Parent Sample Parent Sample Result [A] <0.00202	573366 01/13/2 M Spike Added [B] 0.101 0.101 0.101 0.202	-047 S 018 [ATRIX SPIK] Spiked Sample Result [C] 0.0970 0.0883 0.0742 0.145	Ba An E / MAT Spiked Sample %R [D] 96 87 73 72	tch #: alyst: A RIX SPI Spike Added [E] 0.100 0.100 0.100 0.201	1MatrixALJKE DUPLICADuplicate Spiked Sample Result [F]0.08190.07360.06620.132	 k: Soil TE REC Spiked Dup. %R [G] 82 74 66 66 	OVERY 5 RPD % 17 18 11 9	STUDY Control Limits %R 70-130 70-130 71-129 70-135	Control Limits %RPD 35 35 35 35 35	Flag X X

Matrix Spike Percent Recovery $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E



Project Name: Citation X Fed Com #1



Work Order # : 573366						Project IE): 212C-N	MD-0105	6.200		
Lab Batch ID: 3038367	QC- Sample ID:	573485	-001 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed: 01/15/2018	Date Prepared:	01/15/2	018	An	alyst: A	АLJ					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]		נטן	[E]		ե				
Benzene	< 0.00201	0.100	0.0771	77	0.0998	0.0778	78	1	70-130	35	
Toluene	< 0.00201	0.100	0.0758	76	0.0998	0.0767	77	1	70-130	35	
Ethylbenzene	< 0.00201	0.100	0.0719	72	0.0998	0.0733	73	2	71-129	35	
m,p-Xylenes	< 0.00402	0.201	0.146	73	0.200	0.147	74	1	70-135	35	
o-Xylene	< 0.00201	0.100	0.0743	74	0.0998	0.0737	74	1	71-133	35	
Lab Batch ID: 3038314	QC- Sample ID:	573359	-002 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed: 01/15/2018	Date Prepared:	01/12/2	018	An	alyst: (DJS					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Chloride by EPA 300	Parent Sample Bosult	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%K	Added	Result [F]	%K	70	%0K	% KPD	
				լոյ	[E]		[G]				
Chloride	181	249	440	[D] 104	[E] 249	432	101	2	90-110	20	
Chloride Lab Batch ID: 3038314	181 QC- Sample ID:	249 573370	440 -023 S	[D] 104 Ba	[E] 249 tch #:	432 1 Matrix	101 c: Soil	2	90-110	20	
Chloride Lab Batch ID: 3038314 Date Analyzed: 01/15/2018	181 QC- Sample ID: Date Prepared:	249 573370 01/12/2	440 -023 S 018	[D] 104 Ba An	[E] 249 tch #: alyst: (432 1 Matrix DJS	101 x: Soil	2	90-110	20	
ChlorideLab Batch ID:3038314Date Analyzed:01/15/2018Reporting Units:mg/kg	181 QC- Sample ID: Date Prepared:	249 573370 01/12/2 M	440 -023 S 018 IATRIX SPIK	[D] 104 Ba An E / MAT	[E] 249 tch #: nalyst: (RIX SPI	432 1 Matrix DJS KE DUPLICA	101 c: Soil TE REC	2 OVERY	90-110 STUDY	20	
Chloride Lab Batch ID: 3038314 Date Analyzed: 01/15/2018 Reporting Units: mg/kg Chloride by EPA 300	181 QC- Sample ID: Date Prepared: Parent Sample Result	249 573370 01/12/2 M Spike	440 -023 S 018 IATRIX SPIK Spiked Sample Result	IDJ 104 Ba An E / MAT Spiked Sample	[E] 249 tch #: nalyst: (RIX SPI Spike	432 1 Matrix DJS KE DUPLICA' Duplicate Spiked Sample Pospite [5]	IO1 101 C: Soil TE REC Spiked Dup. % B	2 OVERY RPD	90-110 STUDY Control Limits %B	20 Control Limits % PPD	Flag
Chloride Lab Batch ID: 3038314 Date Analyzed: 01/15/2018 Reporting Units: mg/kg Chloride by EPA 300 Analytes	181 QC- Sample ID: Date Prepared: Parent Sample Result [A]	249 573370 01/12/2 M Spike Added [B]	440 -023 S 018 IATRIX SPIKI Spiked Sample Result [C]	[D] 104 Ba An E / MAT Spiked Sample %R [D]	[E] 249 atch #: aalyst: (RIX SPI Spike Added [E]	432 1 Matrix DJS KE DUPLICA Duplicate Spiked Sample Result [F]	IO1 101 C: Soil TE REC Spiked Dup. %R [G]	2 OVERY RPD %	90-110 STUDY Control Limits %R	20 Control Limits %RPD	Flag

Matrix Spike Percent Recovery $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E



Project Name: Citation X Fed Com #1



Work Order # :	573366						Project II): 212C-N	MD-0105	6.200		
Lab Batch ID:	3038452	QC- Sample ID:	573366	-030 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	01/16/2018	Date Prepared:	01/15/2	018	An	alyst: (OJS					
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Posult	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	E]	Kesuit [F]	%R [G]	70	%0K	%KPD	
Chloride		106	247	363	104	247	367	106	1	90-110	20	
Lab Batch ID:	3038452	QC- Sample ID:	573366	-031 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	01/16/2018	Date Prepared:	01/15/2	018	An	alyst: (DJS					
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup. % P	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	[B]		/0K [D]	[E]	Result [F]	/6K [G]	/0	/0K	70KI D	
Chloride		17.6	250	289	109	250	284	107	2	90-110	20	
Lab Batch ID:	3038453	QC- Sample ID:	573366	-032 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	01/16/2018	Date Prepared:	01/15/2	018	An	alyst: (DJS					
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample Posult [E]	Spiked Dup. %P	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	[B]		/or [D]	[E]	result [r]	/0K [G]	/0	/01	/0KF D	
Chloride		966	245	1170	83	245	1180	87	1	90-110	20	X

Matrix Spike Percent Recovery $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E



Project Name: Citation X Fed Com #1



Work Order # : 573366						Project II	D: 212C-1	MD-0105	6.200		
Lab Batch ID: 3038453	QC- Sample ID:	573366	-042 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed: 01/16/2018	Date Prepared:	01/15/2	018	An	alyst: (DJS					
Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	- %o	%K	%RPD	
Chloride	112	249	371	104	249	380	108	2	90-110	20	
Lab Batch ID: 3038476	QC- Sample ID:	573366	-052 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed: 01/16/2018	Date Prepared:	01/16/2	018	An	alyst: (DJS					
Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	% 0	%K	%RPD	
Chloride	184	249	444	104	249	441	103	1	90-110	20	
Lab Batch ID: 3038476	QC- Sample ID:	573366	-053 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed: 01/17/2018	Date Prepared:	01/16/2	018	An	alyst: (DJS					
Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[U]	%к [D]	E]	Kesuit [F]	%к [G]	70	70K	70KFD	
Chloride	149	247	405	104	247	419	109	3	90-110	20	

Matrix Spike Percent Recovery $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E



Project Name: Citation X Fed Com #1



Work Order # : 573366						Project II	D: 212C-N	MD-01050	5.200		
Lab Batch ID: 3038391	QC- Sample ID:	572902	-004 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 01/13/2018	Date Prepared:	01/12/2	018	An	alyst: A	ALJ					
Reporting Units: mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH by SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	687	69	1000	703	70	2	70-135	35	Х
Diesel Range Organics (DRO)	<15.0	1000	725	73	1000	742	74	2	70-135	35	
Lab Batch ID: 3038399	QC- Sample ID:	573366	-055 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 01/13/2018	Date Prepared:	01/12/2	018	An	alyst: A	ALJ					
Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH by SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[~]	[D]	[E]	[-]	[G]	, -	,		
Gasoline Range Hydrocarbons (GRO)	<15.0	500	476	95	500	525	105	10	70-135	35	
Diesel Range Organics (DRO)	<15.0	500	499	100	500	557	111	11	70-135	35	
Lab Batch ID: 3038511	QC- Sample ID:	572902	-001 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 01/16/2018	Date Prepared:	01/16/2	018	An	alyst: A	ARM					
Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH by SW8015 Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[~]	[D]	[E]		[G]				
Gasoline Range Hydrocarbons (GRO)	<15.0	998	836	84	1000	837	84	0	70-135	35	
Diesel Range Organics (DRO)	<15.0	998	965	97	1000	964	96	0	70-135	35	

Matrix Spike Percent Recovery $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

T	Tetra Tech, Inc.			400 40	00 N. E 01 Mi Tel Fax	Big Sprin Iidland, To (432) 68 (432) 68	ig Street, exas 7970 12-4559 12-3946	Ste 05					C	5	7	3	3		2(,	Pag	e			of	6
Client Name:	COG	Site Manager:		lke Ta	ava	rez					Г		_	_		LYS	IS I	REQ	UES	ST	_				
Project Name:	COG - Citation X Fed Com #1			-							1.	a -	(C	ircle	or	Spe	cif	уM	eth	od	Nc).)			
Project Location (county, state)	n: Lea County, NM	Project #:		21	2C-	MD-0	01056	.200																	
invoice to:	COG								_													d list)			
Receiving Labor	ratory: Xenco	Sampler Signatur	re:	Cla	air G	Gonza	ales						So Lo	Se Hg								ttached			
Comments:	Run deeper samples if total TPH exceeds 5,000 mg/kg. Run deeper samples if benzene exceeds 10 mg/kg, or total B	TEX exceeds 50	0 mg/kg								8260B	RO - ORC	DH Cr Dh	Cd Cr Pb			4)C/625	2			SC	ry (see a			
		SAMPLIN	IG	MATR	RIX	PR	ESERVAT	TIVE	RS	(N/)	BTEX	GRO - D	De Bal	g As Ba	latiles	00/0000	/ol. 8270	808			fate TI	Chemist	0101		
LAB #	SAMPLE IDENTIFICATION	YEAR: ULYO	TIME	VATER		HCL ND	с Ш		CONTAINE	LTERED (Y	TEX 8021B	PH 8015M (NH 8270C	LP Metals A	LP Volatiles LP Semi Vo	ANS Vol or	MS Semi. \	B's 8082 / 6	M (Asbestos	oride	loride Sul	neral Water			
	BH-1 0-1	1/8/2018	-	> 0) X		<u> </u>	. ≝ X	+-	**	Ē		: E	PP 01	2 2 1	2 2	22	8 8	5	N 1	- HO	ਓ	Gei		\square	P
	BH-1 2-3	01/08/18		x			X	-			~	X	+	++		\vdash	+	++	+	X	\vdash	_	++	\square	
	BH-1 4-5	01/08/18		X			1				$\frac{1}{\sqrt{2}}$	X	+	++		\vdash	-	+	+	X	\vdash	+	++	\square	
	BH-1 6-7	01/08/18		x			X	-			^	^	+	++	-		+	++	+	X	\vdash	+	44	\square	
	BH-1 9-10	01/08/18		x			X		- 1		+	+	-	++	-		+	++	+	X	\vdash	+	++	\square	_
	BH-1 14-15	01/08/18		x			X	+	- 1		+	+	+	++	+		+	++	+	X	\vdash	-	++	\square	
	BH-1 19-20	01/08/18		x	-		1¢ –		- 1		+	+	+	++	+	-	+	\vdash	+	X	\vdash	+	\square	\vdash	
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Ŧ	Tetra Tech, Inc.			4000 401	N. B Mie Tel (Fax (Big Sprir idland,T (432) 68 (432) 68	ng Street, exas 7970 32-4559 32-3946	Ste 05							2	5	7	2	33	,4	e Ć	R				1
Client Name:	COG	Site Manage	:	Ike Ta	var	rez					Г				AN	IAL	YSIS	RE	QUI	EST					_	+
Project Name:	COG - Citation X Fed Com #1						_				1.	T	(C	ircl	e oi	r Sj	pec	ify	Met	ho	d N	lo.)				
Project Location (county, state)	Lea County, NM	Project #:		212	2C-	MD-	01056	5.200	-																	B
Invoice to:	COG										1			_								ed list)				nal 1.0
Receiving Labor	atory: Xenco	Sampler Sigr	ature:	Clai	ir G	Gonz	ales			-	1	0		Se Hg								attache				F
Comments:	Run deeper samples if total TPH exceeds 5,000 mg/kg. Run deeper samples if benzene exceeds 10 mg/kg, or total	BTEX exceed	s 50 mg/kg)							(8260B	C35) DRO - OR		Cd Cr Pb a Cd Cr Pt			524	70C/625			TDC	istry (see				
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	SAMPLE IDENTIFICATION	TEAH:	TIME	NATER SOIL		4CL	CE		CONTAIN	ILTERED (TEX 8021B	PH TX1005 PH 8015M	AH 8270C	otal Metals / CLP Metals	CLP Volatile	CLP Semi V	C/MS Vol. 8	C/MS Semi.	DRM	M (Asbesto	Iloride Si	eneral Wate	lion/Cation		I.I.	
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Ŧ] Tetra Tech,	Inc.		4000 N. 401 M Tel Fax	Big Spring Street, lidland,Texas 797((432) 682-4559 (432) 682-3946	Ste 05							<	5	75	33	36	ϕ]
Client Name:	COG	Site Manager:		Ike Tava	irez			Γ			AN	AL	SIS	REC	UES	T	_				┨
Project Name:	COG - Citation X Fed Com #1							1.	ЕĒ	(Circ	le o	r Sp	peci	fy N	leth	od	No.)		e vi	
Project Location (county, state)	Lea County, NM	Project #:		212C	-MD-01056	.200															
Invoice to:	COG							1									14-11 -	(1SII De			
Receiving Labo	pratory: Xenco	Sampler Signa	ture:	Clair	Gonzales			1	(0	Se Hg	Se Ho							attacne			ľ
Comments:	Run deeper samples if total TPH exceeds 5,00 Run deeper samples if benzene exceeds 10 m	00 mg/kg. ng/kg, or total BTEX exceeds	50 mg/kg					K 8260B C35)	DRO - OR	Cd Cr Pb			524	70C/625			TDS	istry (see			
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	SawFLE IDENTIFICATION	DATE	TIME	NATER SOIL	LCL LNO3 CE	CONTAIN	ILTERED	TEX 8021 PH TX100	PH 8015N	otal Metals	CLP Volati	CLP Semi CI	C/MS Vol.	C/MS Sem CB's 8082	ORM	hloride	hloride	eneral vva nion/Catiol		믿	2
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Client Name:	COG	Site Manager	r:	lke [·]	Tava	arez					Т				A	NAL	YSI	S RI	EQU	EST	-					-
Project Name:	COG - Citation X Fed Com #1											E F	(Circ	le	or S	pe	cify	Me	tho	dN	lo.)	l	ī		
Project Location (county, state)	n: Lea County, NM	Project #:		2	12C	-MD	0-010	56.200)		1															
Invoice to:	202			-	-																	d list)	1			
Receiving Labor	ratory: Xenco	Sampler Sigr	nature:	C	lair	Gon	zales	3					6	Se Hg	Serig							attache				į
Comments:	Run deeper samples if total TPH exceeds 5,000 mg/kg. Run deeper samples if benzene exceeds 10 mg/kg, or total E	3TEX exceed	ls 50 mg/kg								8260B	35)	DRO - OR	Cd Cr Pb			24	0C/625				stry (see	Cap			
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LAB #	SAMPLE IDENTIFICATION	DATE DATE	TIME	WATER		HCL	HNO ₃	L.	¢ CONTAINI	ILTERED (3TEX 8021B	PH TX1005	PH 8015M	otal Metals	CLP Volatile	CLP Semi V	ICI SC/MS Vol.	C/MS Semi.	CB's 8082 / ORM	LM (Asbesto	hloride	eneral Wate	nion/Cation			old
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Project Name:	COG - Citation X Fed Com #1		-									1	1 1	(Cire	le	or	Sp	ecif	yⅣ	leth	lod	No))	1		ų.
Project Location (county, state)	Lea County, NM	Project #:			2120	-M	D-01	056.	200																		
Invoice to:	COG					-						1												ed list)			
Receiving Labor	atory: Xenco	Sampler Sign	ature:		Clair	Go	nzal	es				1		0	Se Hg	o Se Hg								attache			
Comments:	Run deeper samples if total TPH exceeds 5,000 mg/kg. Run deeper samples if benzene exceeds 10 mg/kg, or total E	3TEX exceed	s 50 mg/kg									(8260B	35)	DRO - OR	Cd Cr Pb	a Cd Cr Pt			24	00000			TDS	stry (see			
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Project Location (county, state)	n: Lea County, NM	Project #:			2120	C-M	1D-0	105	6.200																			
invoice to:	COG											1				-								ad list)	1011 00			
Receiving Labo	ratory: Run deeper samples if total TPH exceeds 5,000 mg/kg.	Sampler Sign	nature:		Clair	Gc	onza	les				1		6	Se Hg	Se H								attachi	allaci			4
Comments:	Bun deeper samples if total TPH exceeds 5,000 mg/kg, ben;	zene exceeds	s 10 mg/kg,	or to	otal B	TE	X exc	ceed	s 50 m	g/kg		8260B	35)	RO - OR	Cd Cr Pb	Cd Cr Pb			54	0C/625				DS thu (see a				
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XENCO Laboratories



ABORATORIES Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland	Acceptable Temperature Range: 0 - 6 degC
Date/ Time Received: 01/11/2018 04:14:00 PM	Air and Metal samples Acceptable Range: Ambient
Work Order #: 573366	Temperature Measuring device used : R8
Sample Rec	eipt 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 container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	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 relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes

#17 Subcontract of sample(s)?

#18 Water VOC samples have zero headspace?

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

Analyst:

PH Device/Lot#:

Date: 01/12/2018

No

N/A

Checklist completed by: Shawnee Smith Checklist reviewed by: Maw Moak Kelsey Brooks

Date: 01/12/2018

Analytical Report 580038

for COG Operating, LLC

Project Manager: Becky Haskell Citation X Federal COm #001H

27-MAR-18

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

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

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12) Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176)



27-MAR-18

Project Manager: **Becky Haskell COG Operating, LLC** 600 W Illinois Midland, TX 79701

Reference: XENCO Report No(s): **580038** Citation X Federal COm #001H Project Address: Citation X Federal Com #001H

Becky Haskell:

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) 580038. 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. 580038 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,

Jession KRAMER

Jessica Kramer Project Assistant

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

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



Sample Cross Reference 580038

COG Operating, LLC, Midland, TX

Citation X Federal COm #001H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB1 @ 75	S	03-20-18 10:05		580038-001
SB1 @ 80	S	03-20-18 10:30		580038-002
SB1 @ 85	S	03-20-18 11:11		580038-003
SB1 @ 90	S	03-20-18 12:45		580038-004



CASE NARRATIVE

Client Name: COG Operating, LLC Project Name: Citation X Federal COm #001H

Project ID: Work Order Number(s): 580038 Report Date: 27-MAR-18 Date Received: 03/22/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3044820 Inorganic Anions by EPA 300

Lab Sample ID 580038-001 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: 580038-001, -002, -003, -004. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analysis Summary 580038

COG Operating, LLC, Midland, TX

Project Name: Citation X Federal COm #001H

Date Received in Lab:Thu Mar-22-18 09:10 amReport Date:27-MAR-18Project Manager:Jessica Kramer

Project Id: Contact:

Becky Haskell

Project Location: Citation X Federal Com #001H

	Lab Id:	580038-00)1	580038-0	02	580038-0	03	580038-0	04			
Analysis Paguested	Field Id:	SB1 @ 7	5	SB1 @ 8	30	SB1 @ 8	5	SB1 @ 9	0			
Anuiysis Kequesieu	Depth:											
	Matrix:	SOIL		SOIL		SOIL		SOIL				
	Sampled:	Mar-20-18 1	0:05	Mar-20-18	0:30	Mar-20-18 1	1:11	Mar-20-18 1	2:45			
Chloride by EPA 300	Extracted:	Mar-26-18 09:30		Mar-26-18 09:30		Mar-26-18 09:30		Mar-26-18 0	9:30	l .		
	Analyzed:	Mar-26-18 1	Mar-26-18 17:47		8:37	Mar-26-18 1	8:49	Mar-26-18 1	9:02			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Chloride		1210 D	125	3050	250	1510	125	<25.0	25.0			

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 - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Version: 1.%

Jession Vermer

Jessica Kramer Project Assistant



Flagging Criteria

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

SMP Clie	nt Sample	BLK	Method Blank								
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	atory 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



Project Name: Citation X Federal COm #001H

Work Order	#: 580038						Project ID:										
Analyst:	RNL		Da	ate Prepar	red: 03/26/201	8	Date Analyzed: 03/26/2018										
Lab Batch ID:	3044820 Sa	ample: 7641494-1-	h #: 1		Matrix: Solid												
Units:	mg/kg		SPIKE / I	IKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
Analy	Chloride by EPA 3	00	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Chloride			<25.0	250	269	108	250	267	107	1	90-110	20					

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes



Project Name: Citation X Federal COm #001H

Work Order # :	580038						Project II):					
Lab Batch ID:	3044820	QC- Sample ID:	580037	-001 S	Ba	tch #:	1 Matrix	k: Soil					
Date Analyzed:	03/26/2018	Date Prepared:	03/26/2	018	An	alyst: F	RNL						
Reporting Units:	mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag	
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD		
Chloride		5390	250	6150	304	250	6350	384	3	80-120	20	Х	
Lab Batch ID:	3044820	QC- Sample ID:	580038	-001 S	Ba	tch #:	1 Matrix	k: Soil					
Date Analyzed:	03/26/2018	Date Prepared:	03/26/2	018	An	alyst: F	RNL						
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY			
	Chloride by EPA 300	Parent Sample Bosult	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag	
	Analytes	[A]	Added [B]	[C]	%к [D]	Added [E]	Kesuit [F]	%к [G]	% 0	%K	%KPD		
Chloride		1080	250	1440	144	250	1470	156	2	80-120	20	Х	

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

				Cł	IA	IN Page	C)F	C	U	ST	0	D	Y										F	Revision 201	6.1
Setting the Standard since 1990 Stafford, TX (281) 240-4200 Dallas, TX (214) 902-0300	El Paso, TX (915) Lubbock, TX (806)	585-3443) 794-129	Midland, TX (432) 704-5440 San Antonio, TX (210) 509-3334 www.xenco.com							Phoenix, AZ (480) 355-0900 Service Center- Baton Rouge, L. Xenco Quote #								Service Center- Amarillo, T) LA (832) 712-8143 Service Center- Hobbs, NM Xenco Job #							678-4514 392-7550	
Client / Reporting Information	T)							A	nalytica	l inform	ation		1	~	10 E	N.C.) (] Matrix Code	
Company Name / Branch: COG Operating LLC Company Address: Attn: Robert McNeill 600 W. Illinois Ave, Midland, Texas 79701 Email: rhaskell@concho.com, dneel2@concho.com, cbrunson@bbcinternational.com Project Contact: Becky Haskell	Phone No: 432-818-2 slhitchcock@concho.com	2372 n	Project Na Citation) Project Lo Citation X Invoice To:	roject Name/Number: <u>Station X Federal Com #001H</u> roject Location: <u>itation X Federal Com #001H</u> voice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois																				W S G D P S S S O	/ = Water = Soil/Sed/: W =Ground W = Drinkin = Product W = Surface L = Sludge W =Occean/S	Solid Water g Water water
Samplers's Name: Jeff Ornelas			PO Numbe	r:	land, T	exas /s	9701		1					-										Ŵ	I = Wipe	iea watei
No. Field ID / Point of Collec	stion		Collectio	n				Numl	ber of	prese	rved b	ottles		ORIDE										A	W= Waste V = Air	Vater
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2 Day EMERGENCY	Contract TAT						orms	ן ר			Level	IV 							_							
3 Day EMERGENCY								L			RG -4	11												·····		
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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 enforced unless previously negotiated under a fully executed client contract.

Page 9 of 10

Final 1.000



XENCO Laboratories



BORATORIES Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating, LLC	Acceptable Temperature Range: 0 - 6 degC										
Date/ Time Received: 03/22/2018 09:10:00 AM	Air and Metal samples Acceptable Range: Ambien										
Work Order #: 580038	Temperature Measuring device used : IR-3										
Sample Rece	ipt Checklist Comments										
#1 *Temperature of cooler(s)?	3.9										
#2 *Shipping container in good condition?	Yes										
#3 *Samples received on ice?	Yes										
#4 *Custody Seals intact on shipping container/ cooler?	N/A										
#5 Custody Seals intact on sample bottles?	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 relinquished/ received?	Yes										
#10 Chain of Custody agrees with sample labels/matrix?	Yes										
#11 Container label(s) legible and intact?	Yes										
#12 Samples in proper container/ bottle?	Yes										
#13 Samples properly preserved?	Yes										
#14 Sample container(s) intact?	Yes										
#15 Sufficient sample amount for indicated test(s)?	Yes										
#16 All samples received within hold time?	Yes										
#17 Subcontract of sample(s)?	Νο										

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

Analyst:

PH Device/Lot#:

#18 Water VOC samples have zero headspace?

Date: 03/22/2018

N/A

Checklist completed by: Brenda Ward Brenda Ward Checklist reviewed by: Jessica MAMER Jessica Kramer Jessica Kramer

Date: 03/22/2018

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised April 3, 2017

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.

1220 S. St. Fran	icis Dr., Sant	a re, NM 8750	2	S	anta Fe	e, NM 875	05	<u></u>					
			Rel	ease Notifi	catior	and Co	orre	ctive A	ction		_		
						OPERA	ΓOR		\boxtimes	Initia	al Report		Final Report
Name of Co	ompany: C	OG Operat	ting, LLC	C (OGRID# 229	137)	Contact: Ro	bert I	McNeill					
Address: 6	West II	linois Avenu	ue, Midla	ind TX 79701		Telephone I	No.: 4.	32-683-7 4	143		_	_	_
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Surface Ow	ner: BLM			Mineral C	Dwner: 1	Federal				API No	.: 30-025-	39960)
				LOC	ATIO	N OF REI	LEAS	SE					
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If a Watercon	arse was Im	pacted, Descr	ibe Fully.										
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should their o	perations h	ave failed to a	adequately	investigate and r	emediate	contaminati	on that	pose a thr	eat to groun	id water	, surface wa	ater, h	uman health
federal, state,	or local lay	vs and/or regu	ulations.	lance of a C-141	герот ас	bes not reliev	e the o	perator of	responsibili	ty for co	ompliance v	vith ar	ly other
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Printed Name	: Sheldon I	Hitchcock						annentar o	peetanst.				
Title: HSE C	oordinator					Approval Dat	et 12	2/8/201	7 _{Exp}	iration I			
					1	-PProvide Lette		32	entr				,
E-mail Addre	ss: slhitche	ock@concho.	com			Conditions of	Appro	val:			Attached		
Date: 12/7/20	17		Pho	ne: 575-746-2010	0	see attac	ched	directiv	/e				
Attach Addi	tional Shee	ets If Necess	ary		1								Man of a star
					P	IRP-4890		DOV 4	7240077	770		470	1000540
					L				1342211	12	<u></u> μουγ	1734	1228543

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _12/7/2017_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4890_ has been assigned. Please refer to this case number in all future correspondence.

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete <u>division-approved corrective action</u> for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _1/8/2018_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

• Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

• Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

• Nominal detection limits for field and laboratory analyses must be provided.

• Composite sampling is not generally allowed.

• Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

•Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

• If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

• Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold OCD Environmental Bureau Chief 1220 South St. Francis Drive Santa Fe, New Mexico 87505 505-476-3465 jim.griswold@state.nm.us
From:	Hernandez, Christina, EMNRD
To:	"Cliff Brunson"; Yu, Olivia, EMNRD; "Shelly Tucker"
Cc:	"Becky Haskell"; "Dakota Neel"; "Sheldon Hitchcock"; "DeAnn Grant"; "Ken Swinney"; "Jennifer Gilkey"; "Kathy
	Purvis"
Subject:	RE: COG-Citation X Federal Com #001H (1RP-4890) - Delineation Workplan
Date:	Tuesday, July 3, 2018 9:19:00 AM
Attachments:	approved1RP-4890Delineation Workplan Citation X Federal Com #001H (003).pdf

From: Hernandez, Christina, EMNRD

Sent: Tuesday, July 3, 2018 9:08 AM

To: 'Cliff Brunson' <cbrunson@bbcinternational.com>; Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; 'Shelly Tucker' <stucker@blm.gov>

Cc: 'Becky Haskell' <rhaskell@concho.com>; 'Dakota Neel' <DNeel2@concho.com>; 'Sheldon Hitchcock' <SLHitchcock@concho.com>; DeAnn Grant <agrant@concho.com>; 'Ken Swinney' <kswinney@bbcinternational.com>; 'Jennifer Gilkey' <jgilkey@bbcinternational.com>; 'Kathy Purvis' <kathy@bbcinternational.com>

Subject: RE: COG-Citation X Federal Com #001H (1RP-4890) - Delineation Workplan

Dear Mr. Brunson:

NMOCD approves of the delineation completed and proposed remediation for 1RP-4890 with one condition: confirmation bottom and sidewall samples of the proposed 4 ft. bgs excavation are required. Additionally, please provide GPS coordinates for all delineation and remediation sample locations. Please be advised, confirmation sample points must not be no more than 50 ft apart and to be tested for BTEX, TPH Extended, and chlorides (sidewalls). Please provide photos for documentation including properly placed liner and soil bore logs in the remediation/closure report.

BLM like approval required.

Thanks,

Christina Hernandez EMNRD-OCD Environmental Specialist 1625 N. French Drive Hobbs, NM 88240 575-393-6161 x111 Christina.Hernandez@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 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: Cliff Brunson < <u>cbrunson@bbcinternational.com</u>>

Sent: Wednesday, June 6, 2018 6:51 PM

To: Yu, Olivia, EMNRD <<u>Olivia.Yu@state.nm.us</u>>; 'Shelly Tucker' <<u>stucker@blm.gov</u>> Cc: Hernandez, Christina, EMNRD <<u>Christina.Hernandez@state.nm.us</u>>; 'Becky Haskell' <<u>rhaskell@concho.com</u>>; 'Dakota Neel' <<u>DNeel2@concho.com</u>>; 'Sheldon Hitchcock' <<u>SLHitchcock@concho.com</u>>; DeAnn Grant <<u>agrant@concho.com</u>>; 'Ken Swinney' <<u>kswinney@bbcinternational.com</u>>; 'Jennifer Gilkey' <<u>jgilkey@bbcinternational.com</u>>; 'Kathy Purvis' <<u>kathy@bbcinternational.com</u>> Subject: COC Citation X Endered Com #00111 (1PD, 4200) _ Deligned to P. Warkelen

Subject: COG-Citation X Federal Com #001H (1RP-4890) - Delineation Workplan

Olivia and Shelly,

Please find the attached Delineation Workplan and remediation proposal for the COG Citation X Federal Com #001H (1RP-4890). COG is requesting that you review this plan and is looking forward to the OCD's and BLM's approval.

If you have any questions, please let me know.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS President BBC International, Inc. World-Wide Environmental Specialists Mailing Address: P. O. Box 805 Hobbs, NM 88241-0805 USA Shipping Address: 1324 W. Marland St. Hobbs, NM 88240 USA Phone: (575) 397-6388 Fax: (575) 397-0397 E-Mail: cbrunson@bbcinternational.com



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