WORLD-WIDE ENVIRONMENTAL SPECIALISTS

BBC INTERNATIONAL INCORPORATED

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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:

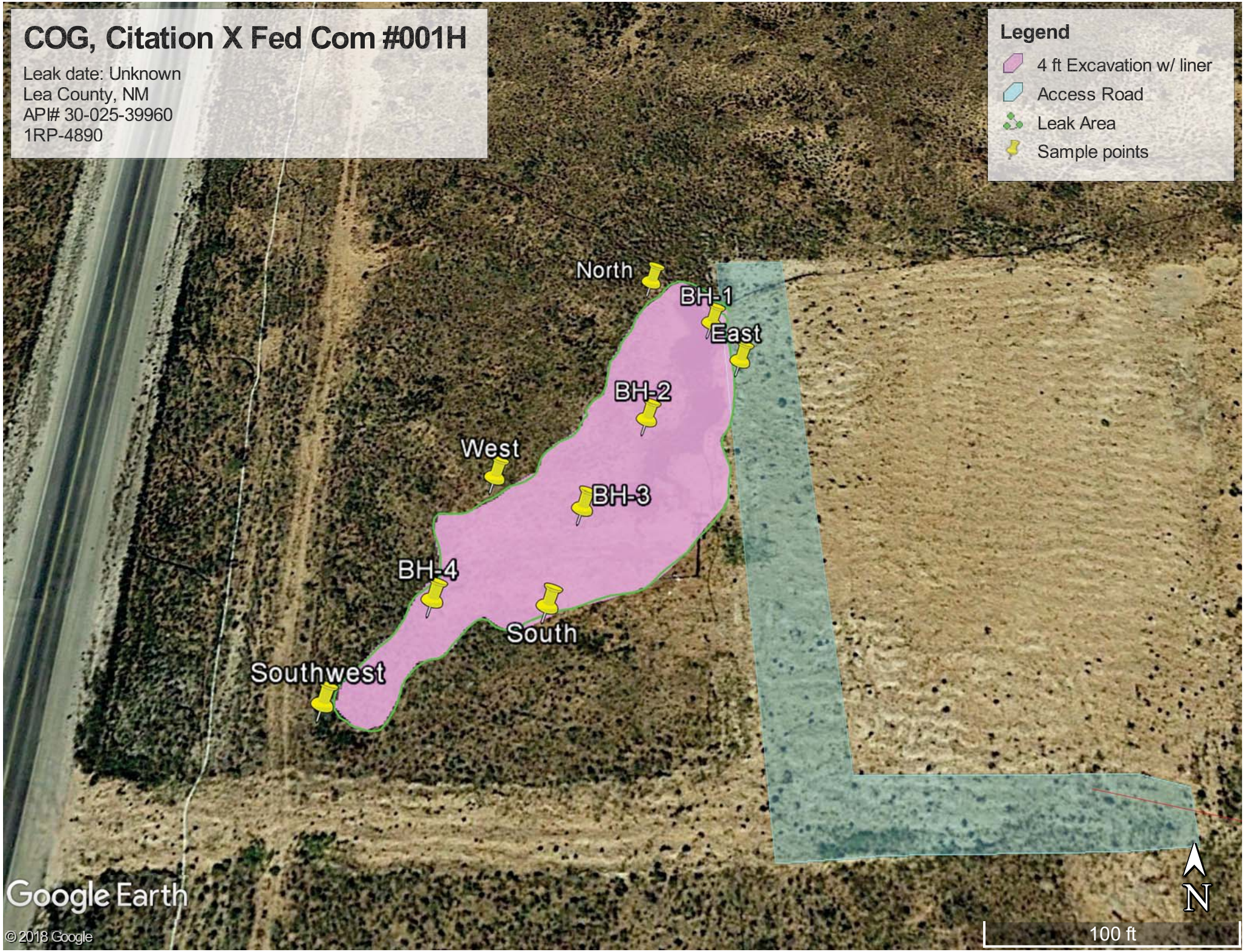
COG will excavate the spill area as depicted on the following site diagram. The entire leak area (pink shade on diagram) will be excavated to a depth of 4 feet then an impermeable liner will be installed in the excavation and backfilled.

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.

APPROVED
By CHernandez at 9:10 am, Jul 03, 2018

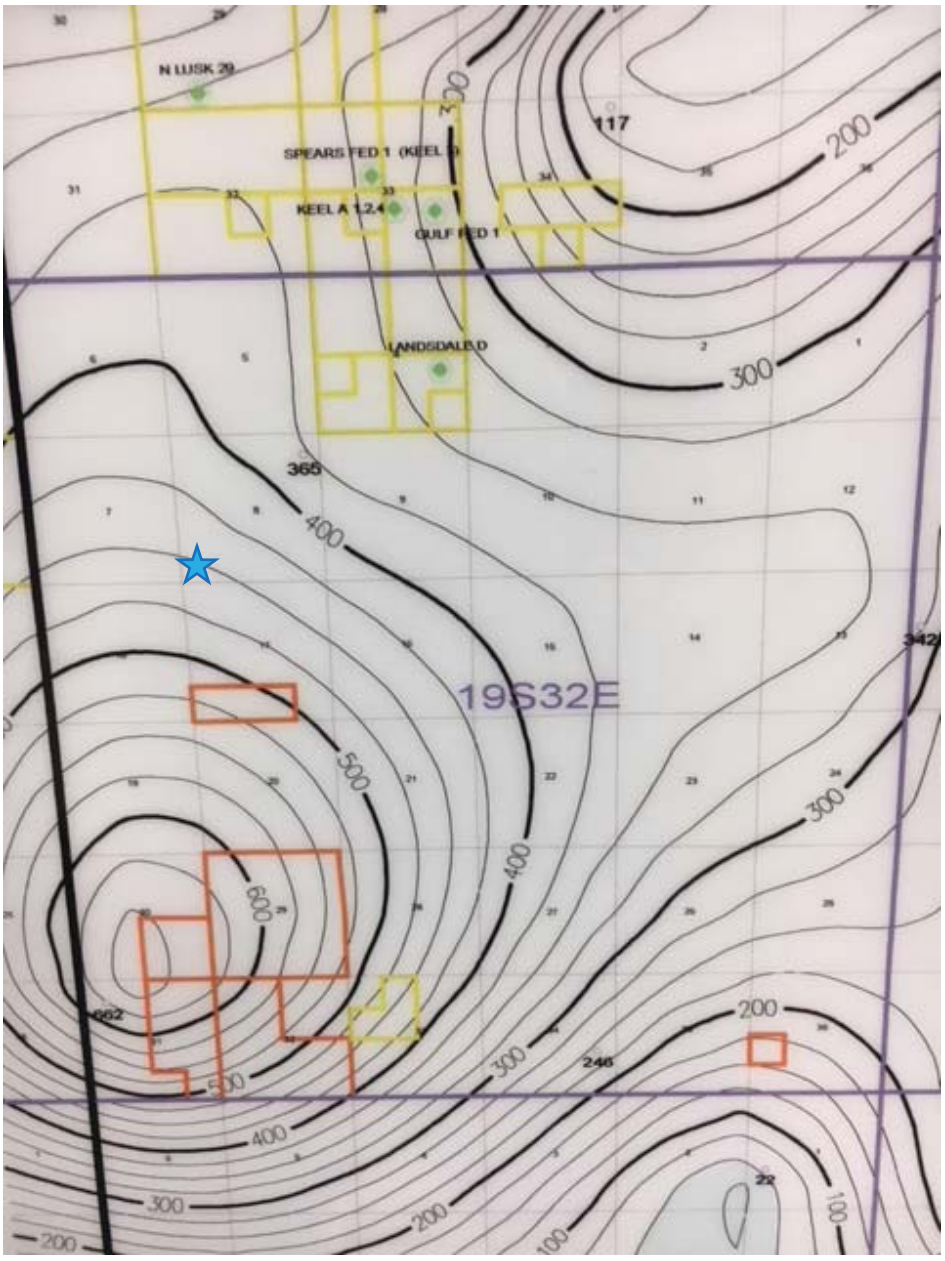
NMOCD approves of the delineation completed and proposed remediation for 1RP-4890 with one condition: representative confirmation samples from the bottom of the excavated area and sidewalls.


COG, Citation X Fed Com #001H
Leak date: Unknown
Lea County, NM
API# 30-025-39960
1RP-4890
Legend
4 ft Excavation w/ liner
Access Road
Leak Area
Sample points
North
BH-1
East
BH-2
West
BH-3
BH-4
South
Southwest
Google Earth
© 2018 Google
N
100 ft

COG, Citation X Fed Com #001H

U/L M, Section 8, T19S, R32E

Groundwater: 450’



New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 01656 POD1		CP	LE	3	4	3	17	19S	32E	613368	3613646	1688	70		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 612998 **Northing (Y):** 3615294 **Radius:** 1700

3/26/18 9:44 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

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

		Sample ID	BH3 @ 0'-1'	BH3 @ 2'-3'	BH3 @ 4'-5'	BH3 @ 6'-7'	BH3 @ 9'-10'	BH3 @ 14'-15'	BH3 @ 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

Laboratory Analytical Results Summary
Citation X Federal Com #001H

		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 0'-1'	NBH @ 2'-3'	NBH @ 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

		Sample ID	WBH 0'-1'	WBH @ 2'-3'	WBH @ 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 @ 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	<0.00199
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

Public Land Survey System (PLSS)

Q64: Q16: SW Q4: SW Sec: 08 Tws: 19S Rng: 32E

State Plane Coordinate System - NAD27

X: 0 ft Y: 0 ft Zone:

State Plane Coordinate System - NAD83

X: 0 ft Y: 0 ft Zone:

Degrees/Minutes/Seconds

Longitude (X): Degrees: 0 ° Minutes: 0 ' Seconds: 0 "

Latitude (Y): Degrees: 0 ° Minutes: 0 ' Seconds: 0 "

UTM - NAD27

Easting (X): 0 mtrs Northing (Y): 0 mtrs Zone:

SUBMIT

All Conversion Results are displayed as NAD 1983 UTM Zone 13

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,

Kelsey Brooks
Project Manager

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)	S	01-09-18 00:00	573366-046
North 2-3 (Borehole)	S	01-09-18 00:00	573366-047
North 4-5 (Borehole)	S	01-09-18 00:00	573366-048
West 0-1 (Borehole)	S	01-09-18 00:00	573366-049
West 2-3 (Borehole)	S	01-09-18 00:00	573366-050
West 4-5 (Borehole)	S	01-09-18 00:00	573366-051
South 0-1 (Borehole)	S	01-09-18 00:00	573366-052
South 2-3 (Borehole)	S	01-09-18 00:00	573366-053
South 4-5 (Borehole)	S	01-09-18 00:00	573366-054
East 0-1 (Borehole)	S	01-09-18 00:00	573366-055
East 2-3 (Borehole)	S	01-09-18 00:00	573366-056
East 4-5 (Borehole)	S	01-09-18 00:00	573366-057
BH-2 59-60	S	01-08-18 00:00	Not Analyzed
BH-2 69-70	S	01-08-18 00:00	Not Analyzed

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 accepted.

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

Certificate of Analysis Summary 573366

Tetra Tech- Midland, Midland, TX

Project Name: Citation X Fed Com #1

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

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

Analysis Requested													
	Lab Id:	573366-001		573366-002		573366-003		573366-004		573366-005		573366-006	
	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	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Jan-13-18 08:00		Jan-13-18 08:00		Jan-12-18 16:00							
	Analyzed:	Jan-13-18 17:49		Jan-13-18 17:30		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	0.499	56.9	0.500	0.00844	0.00201						
m,p-Xylenes		87.4	0.998	87.0	1.00	0.0124	0.00402						
o-Xylene		31.9	0.499	32.3	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 15:00		Jan-12-18 15:00		Jan-12-18 15:00		Jan-12-18 15:00		Jan-12-18 15:00	
	Analyzed:	Jan-15-18 20:46		Jan-15-18 20:53		Jan-15-18 21:00		Jan-15-18 21:07		Jan-15-18 21:27		Jan-15-18 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 10:00		Jan-12-18 10:00							
	Analyzed:	Jan-13-18 08:09		Jan-13-18 09:32		Jan-13-18 07:29							
	Units/RL:	mg/kg	RL	mg/kg	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						

Kelsey Brooks
Project Manager

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Contact: Ike Tavarez
Project Location: Lea County,NM

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

Analysis Requested													
	Lab Id:	573366-007		573366-008		573366-009		573366-010		573366-011		573366-012	
	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	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 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 15:00		Jan-12-18 15:00		Jan-12-18 15:00		Jan-12-18 15:00		Jan-12-18 15:00		Jan-15-18 14:30	
	Analyzed:	Jan-15-18 21:41		Jan-15-18 21:48		Jan-15-18 21:55		Jan-15-18 22:02		Jan-15-18 22:09		Jan-16-18 01:11	
	Units/RL:	mg/kg	RL	mg/kg	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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Certificate of Analysis Summary 573366

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Contact: Ike Tavarez
Project Location: Lea County,NM

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

Analysis Requested													
	Lab Id:	573366-013		573366-014		573366-015		573366-016		573366-017		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	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00	
BTEX by EPA 8021B	***Extracted:***							Jan-17-18 09:00		Jan-17-18 09:00		Jan-12-18 16:00	
	Analyzed:							Jan-17-18 16:39		Jan-17-18 17:17		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 14:30		Jan-15-18 14:30		Jan-15-18 14:30		Jan-15-18 14:30		Jan-15-18 14:30	
	Analyzed:	Jan-16-18 01:18		Jan-16-18 01:25		Jan-16-18 01:32		Jan-16-18 01:53		Jan-16-18 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 10:00		Jan-12-18 10:00	
	Analyzed:							Jan-13-18 09:11		Jan-13-18 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

Kelsey Brooks
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Certificate of Analysis Summary 573366

Tetra Tech- Midland, Midland, TX

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

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

Analysis Requested													
	Lab Id:	573366-019		573366-020		573366-021		573366-022		573366-023		573366-024	
	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	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 00:00	
Chloride by EPA 300	***Extracted:***	Jan-15-18 14:30		Jan-15-18 14:30		Jan-15-18 14:30		Jan-15-18 14:30		Jan-15-18 14:30		Jan-15-18 14:30	
	Analyzed:	Jan-16-18 02:13		Jan-16-18 02:20		Jan-16-18 02:48		Jan-16-18 02:55		Jan-16-18 03:16		Jan-16-18 03:23	
	Units/RL:	mg/kg	RL	mg/kg	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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Tetra Tech- Midland, Midland, TX

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Project Location: Lea County,NM

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

Analysis Requested													
	Lab Id:	573366-025		573366-026		573366-027		573366-030		573366-031		573366-032	
	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	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-08-18 00:00		Jan-08-18 00:00		Jan-08-18 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 14:30		Jan-15-18 14:30		Jan-15-18 14:30		Jan-15-18 17:00	
	Analyzed:	Jan-16-18 03:30		Jan-16-18 03:37		Jan-16-18 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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Certificate of Analysis Summary 573366

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Contact: Ike Tavarez
Project Location: Lea County,NM

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

Analysis Requested													
	Lab Id:	573366-033		573366-034		573366-035		573366-036		573366-037		573366-038	
	Field Id:	BH-3 6-7		BH-3 9-10		BH-3 14-15		BH-3 19-20		BH-4 0-1		BH-4 2-3	
	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	
	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 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 05:01		Jan-16-18 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

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 573366

Tetra Tech- Midland, Midland, TX

Project Name: Citation X Fed Com #1

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

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

Analysis Requested													
	Lab Id:	573366-039		573366-040		573366-041		573366-042		573366-043		573366-044	
	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)	
	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							<0.00199	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 17:00		Jan-15-18 17:00		Jan-15-18 17:00	
	Analyzed:	Jan-16-18 05:57		Jan-16-18 06:04		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
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

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 573366

Tetra Tech- Midland, Midland, TX

Project Name: Citation X Fed Com #1

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

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

Analysis Requested													
	Lab Id:	573366-045		573366-046		573366-047		573366-048		573366-049		573366-050	
	Field Id:	Southwest 4-5 (Borehole)		North 0-1 (Borehole)		North 2-3 (Borehole)		North 4-5 (Borehole)		West 0-1 (Borehole)		West 2-3 (Borehole)	
	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	<0.00199	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	<0.00398	0.00398	<0.00399	0.00399	<0.00403	0.00403	<0.00398	0.00398	<0.00397	0.00397
o-Xylene		<0.00201	0.00201	<0.00199	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	85.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 573366

Tetra Tech- Midland, Midland, TX

Project Name: Citation X Fed Com #1

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

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

Analysis Requested													
	Lab Id:	573366-051		573366-052		573366-053		573366-054		573366-055		573366-056	
	Field Id:	West 4-5 (Borehole)		South 0-1 (Borehole)		South 2-3 (Borehole)		South 4-5 (Borehole)		East 0-1 (Borehole)		East 2-3 (Borehole)	
	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-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 12:44		Jan-13-18 13:03		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	<0.00201	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	<0.00402	0.00402	<0.00398	0.00398	<0.00396	0.00396	<0.00402	0.00402	<0.00398	0.00398
o-Xylene		<0.00202	0.00202	<0.00201	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 17:00		Jan-16-18 09:00		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 09:58		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 12:00		Jan-12-18 12:00		Jan-12-18 12:00		Jan-12-18 12:00		Jan-12-18 12:00		Jan-12-18 12:00	
	Analyzed:	Jan-13-18 22:01		Jan-13-18 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

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 573366

Tetra Tech- Midland, Midland, TX

Project Name: Citation X Fed Com #1

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

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

Analysis Requested							
	Lab Id:	573366-057					
	Field Id:	East 4-5 (Borehole)					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Jan-09-18 00:00					
BTEX by EPA 8021B	***Extracted:***	Jan-15-18 11:00					
	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				

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 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

\+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038355 **Sample:** 573366-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/12/18 20:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	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

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 3038355 **Sample:** 573366-037 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 00:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	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

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	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

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	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

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038355 **Sample:** 573366-043 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 01:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 3038355 **Sample:** 573366-044 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 01:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 3038355 **Sample:** 573366-045 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 01:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0266	0.0300	89	80-120	

Lab Batch #: 3038391 **Sample:** 573366-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 07:29

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.6	100	83	70-135	
o-Terphenyl	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.0	100	83	70-135	
o-Terphenyl	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
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038391 **Sample:** 573366-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 08:09

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	43.2	50.0	86	70-135	

Lab Batch #: 3038391 **Sample:** 573366-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 08:30

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.5	100	91	70-135	
o-Terphenyl	39.7	50.0	79	70-135	

Lab Batch #: 3038391 **Sample:** 573366-030 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 08:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.7	100	83	70-135	
o-Terphenyl	36.7	50.0	73	70-135	

Lab Batch #: 3038391 **Sample:** 573366-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 09:11

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.3	100	80	70-135	
o-Terphenyl	35.2	50.0	70	70-135	

Lab Batch #: 3038391 **Sample:** 573366-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 09:32

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	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
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038391 **Sample:** 573366-032 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 10:35

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.1	100	93	70-135	
o-Terphenyl	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

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 3038391 **Sample:** 573366-037 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 11:16

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.0	100	97	70-135	
o-Terphenyl	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.4	100	87	70-135	
o-Terphenyl	46.0	50.0	92	70-135	

Lab Batch #: 3038360 **Sample:** 573366-048 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 11:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0281	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
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038391 **Sample:** 573366-039 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 11:57

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.7	100	84	70-135	
o-Terphenyl	44.0	50.0	88	70-135	

Lab Batch #: 3038360 **Sample:** 573366-049 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 12:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 3038391 **Sample:** 573366-043 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 12:19

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.3	100	96	70-135	
o-Terphenyl	48.4	50.0	97	70-135	

Lab Batch #: 3038360 **Sample:** 573366-050 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 12:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 3038391 **Sample:** 573366-044 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 12:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.1	100	82	70-135	
o-Terphenyl	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
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038360 **Sample:** 573366-051 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 12:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 3038391 **Sample:** 573366-045 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 13:02

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.8	100	86	70-135	
o-Terphenyl	44.6	50.0	89	70-135	

Lab Batch #: 3038360 **Sample:** 573366-052 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 13:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 3038360 **Sample:** 573366-053 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 13:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 3038391 **Sample:** 573366-046 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 13:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.6	100	81	70-135	
o-Terphenyl	41.2	50.0	82	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
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038360 **Sample:** 573366-054 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 13:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.7	100	76	70-135	
o-Terphenyl	35.4	50.0	71	70-135	

Lab Batch #: 3038360 **Sample:** 573366-055 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 14:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	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

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.1	100	88	70-135	
o-Terphenyl	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

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038399 **Sample:** 573366-056 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 16:48

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.1	100	86	70-135	
o-Terphenyl	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.8	100	87	70-135	
o-Terphenyl	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

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 3038360 **Sample:** 573366-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 17:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.8	100	88	70-135	
o-Terphenyl	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

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038399 **Sample:** 573366-052 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 22:23

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.2	100	88	70-135	
o-Terphenyl	46.3	50.0	93	70-135	

Lab Batch #: 3038399 **Sample:** 573366-053 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 22:44

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.5	100	91	70-135	
o-Terphenyl	46.9	50.0	94	70-135	

Lab Batch #: 3038399 **Sample:** 573366-054 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 23:06

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	55.9	50.0	112	70-135	

Lab Batch #: 3038399 **Sample:** 573366-050 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 23:48

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.0	100	73	70-135	
o-Terphenyl	36.0	50.0	72	70-135	

Lab Batch #: 3038399 **Sample:** 573366-048 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/14/18 00:09

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	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
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038367 **Sample:** 573366-032 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/15/18 17:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0243	0.0300	81	80-120	
4-Bromofluorobenzene	0.0256	0.0300	85	80-120	

Lab Batch #: 3038367 **Sample:** 573366-046 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/15/18 17:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 3038367 **Sample:** 573366-057 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/15/18 17:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.3	99.9	90	70-135	
o-Terphenyl	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.8	100	88	70-135	
o-Terphenyl	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
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038601 **Sample:** 573366-031 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/17/18 13:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	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	0.0264	0.0300	88	80-120	

Lab Batch #: 3038601 **Sample:** 573366-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/17/18 16:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 3038601 **Sample:** 573366-030 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/17/18 16:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	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

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 3038355 **Sample:** 7637493-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/12/18 19:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	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

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038391 **Sample:** 7637444-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/13/18 04:48

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.8	100	95	70-135	
o-Terphenyl	49.9	50.0	100	70-135	

Lab Batch #: 3038360 **Sample:** 7637495-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/13/18 10:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 3038399 **Sample:** 7637445-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/13/18 14:32

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.2	100	71	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 3038367 **Sample:** 7637511-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/15/18 15:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0244	0.0300	81	80-120	

Lab Batch #: 3038511 **Sample:** 7637574-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/16/18 22:08

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.9	100	93	70-135	
o-Terphenyl	49.9	50.0	100	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
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038601 **Sample:** 7637671-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/17/18 09:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	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

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	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 Found [A]	True Amount [B]	Recovery %R [D]	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

BTEX by EPA 8021B

Analytes	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 RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.6	100	71	70-135	
o-Terphenyl	42.2	50.0	84	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

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038367 **Sample:** 7637511-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/15/18 13:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 3038511 **Sample:** 7637574-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/16/18 22:31

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.7	100	91	70-135	
o-Terphenyl	44.6	50.0	89	70-135	

Lab Batch #: 3038601 **Sample:** 7637671-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/17/18 08:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 3038355 **Sample:** 7637493-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/12/18 17:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 3038391 **Sample:** 7637444-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/13/18 05:29

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.1	100	92	70-135	
o-Terphenyl	55.8	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
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038360 **Sample:** 7637495-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/13/18 09:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 3038399 **Sample:** 7637445-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/13/18 15:17

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.4	100	73	70-135	
o-Terphenyl	38.8	50.0	78	70-135	

Lab Batch #: 3038367 **Sample:** 7637511-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/15/18 14:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 3038511 **Sample:** 7637574-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/16/18 22:54

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.7	100	89	70-135	
o-Terphenyl	44.6	50.0	89	70-135	

Lab Batch #: 3038601 **Sample:** 7637671-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/17/18 08:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	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
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038355 **Sample:** 573116-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/12/18 18:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.8	100	79	70-135	
o-Terphenyl	43.4	50.0	87	70-135	

Lab Batch #: 3038399 **Sample:** 573366-055 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 16:02

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.1	100	82	70-135	
o-Terphenyl	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

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 3038367 **Sample:** 573485-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/15/18 14:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	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

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038511 **Sample:** 572902-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/16/18 23:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.1	99.8	85	70-135	
o-Terphenyl	36.0	49.9	72	70-135	

Lab Batch #: 3038355 **Sample:** 573116-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/12/18 18:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0352	0.0300	117	80-120	
4-Bromofluorobenzene	0.0334	0.0300	111	80-120	

Lab Batch #: 3038391 **Sample:** 572902-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 06:29

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.7	100	81	70-135	
o-Terphenyl	39.5	50.0	79	70-135	

Lab Batch #: 3038360 **Sample:** 573366-047 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 09:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 3038399 **Sample:** 573366-055 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/13/18 16:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.6	100	71	70-135	
o-Terphenyl	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

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Citation X Fed Com #1

Work Orders : 573366,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038367 **Sample:** 573485-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/15/18 14:41

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 3038511 **Sample:** 572902-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/17/18 00:03

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	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
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Citation X Fed Com #1

Work Order #: 573366 **Project ID:** 212C-MD-01056.200

Analyst: ALJ **Date Prepared:** 01/12/2018 **Date Analyzed:** 01/12/2018

Lab Batch ID: 3038355 **Sample:** 7637493-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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 **Date Prepared:** 01/13/2018 **Date Analyzed:** 01/13/2018

Lab Batch ID: 3038360 **Sample:** 7637495-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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

BS / BSD Recoveries

Project Name: Citation X Fed Com #1

Work Order #: 573366 **Project ID:** 212C-MD-01056.200

Analyst: ALJ **Date Prepared:** 01/15/2018 **Date Analyzed:** 01/15/2018

Lab Batch ID: 3038367 **Sample:** 7637511-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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 **Date Prepared:** 01/17/2018 **Date Analyzed:** 01/17/2018

Lab Batch ID: 3038601 **Sample:** 7637671-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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

BS / BSD Recoveries

Project Name: Citation X Fed Com #1

Work Order #: 573366 **Project ID:** 212C-MD-01056.200

Analyst: OJS **Date Prepared:** 01/12/2018 **Date Analyzed:** 01/15/2018

Lab Batch ID: 3038314 **Sample:** 7637422-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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
Chloride	<5.00	250	238	95	250	241	96	1	90-110	20	

Analyst: OJS **Date Prepared:** 01/15/2018 **Date Analyzed:** 01/16/2018

Lab Batch ID: 3038452 **Sample:** 7637503-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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
Chloride	<5.00	250	273	109	250	275	110	1	90-110	20	

Analyst: OJS **Date Prepared:** 01/15/2018 **Date Analyzed:** 01/16/2018

Lab Batch ID: 3038453 **Sample:** 7637505-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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
Chloride	<5.00	250	254	102	250	251	100	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

BS / BSD Recoveries

Project Name: Citation X Fed Com #1

Work Order #: 573366 **Project ID:** 212C-MD-01056.200

Analyst: OJS **Date Prepared:** 01/16/2018 **Date Analyzed:** 01/16/2018

Lab Batch ID: 3038476 **Sample:** 7637549-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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
Chloride	<5.00	250	274	110	250	273	109	0	90-110	20	

Analyst: ALJ **Date Prepared:** 01/12/2018 **Date Analyzed:** 01/13/2018

Lab Batch ID: 3038391 **Sample:** 7637444-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod 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
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1040	104	1000	993	99	5	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1040	104	1000	1020	102	2	70-135	35	

Analyst: ALJ **Date Prepared:** 01/12/2018 **Date Analyzed:** 01/13/2018

Lab Batch ID: 3038399 **Sample:** 7637445-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod 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
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	860	86	1000	918	92	7	70-135	35	
Diesel Range 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

BS / BSD Recoveries

Project Name: Citation X Fed Com #1

Work Order #: 573366 **Project ID:** 212C-MD-01056.200

Analyst: ARM **Date Prepared:** 01/16/2018 **Date Analyzed:** 01/16/2018

Lab Batch ID: 3038511 **Sample:** 7637574-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod 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
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	923	92	1000	866	87	6	70-135	35	
Diesel Range 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

Form 3 - MS / MSD Recoveries

Project Name: Citation X Fed Com #1

Work Order # : 573366 **Project ID:** 212C-MD-01056.200

Lab Batch ID: 3038355 **QC- Sample ID:** 573116-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/12/2018 **Date Prepared:** 01/12/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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 **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/13/2018 **Date Prepared:** 01/13/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0970	96	0.100	0.0819	82	17	70-130	35	
Toluene	<0.00202	0.101	0.0883	87	0.100	0.0736	74	18	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0742	73	0.100	0.0662	66	11	71-129	35	X
m,p-Xylenes	<0.00403	0.202	0.145	72	0.201	0.132	66	9	70-135	35	X
o-Xylene	<0.00202	0.101	0.0742	73	0.100	0.0661	66	12	71-133	35	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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Citation X Fed Com #1

Work Order # : 573366 **Project ID:** 212C-MD-01056.200

Lab Batch ID: 3038367 **QC- Sample ID:** 573485-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/15/2018 **Date Prepared:** 01/15/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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 **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/15/2018 **Date Prepared:** 01/12/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	181	249	440	104	249	432	101	2	90-110	20	

Lab Batch ID: 3038314 **QC- Sample ID:** 573370-023 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/15/2018 **Date Prepared:** 01/12/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	189	250	445	102	250	456	107	2	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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Citation X Fed Com #1

Work Order # : 573366 **Project ID:** 212C-MD-01056.200

Lab Batch ID: 3038452 **QC- Sample ID:** 573366-030 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/16/2018 **Date Prepared:** 01/15/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	106	247	363	104	247	367	106	1	90-110	20	

Lab Batch ID: 3038452 **QC- Sample ID:** 573366-031 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/16/2018 **Date Prepared:** 01/15/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	17.6	250	289	109	250	284	107	2	90-110	20	

Lab Batch ID: 3038453 **QC- Sample ID:** 573366-032 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/16/2018 **Date Prepared:** 01/15/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	966	245	1170	83	245	1180	87	1	90-110	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Citation X Fed Com #1

Work Order # : 573366 **Project ID:** 212C-MD-01056.200

Lab Batch ID: 3038453 **QC- Sample ID:** 573366-042 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/16/2018 **Date Prepared:** 01/15/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	112	249	371	104	249	380	108	2	90-110	20	

Lab Batch ID: 3038476 **QC- Sample ID:** 573366-052 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/16/2018 **Date Prepared:** 01/16/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	184	249	444	104	249	441	103	1	90-110	20	

Lab Batch ID: 3038476 **QC- Sample ID:** 573366-053 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/17/2018 **Date Prepared:** 01/16/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Citation X Fed Com #1

Work Order # : 573366 **Project ID:** 212C-MD-01056.200

Lab Batch ID: 3038391 **QC- Sample ID:** 572902-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/13/2018 **Date Prepared:** 01/12/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	687	69	1000	703	70	2	70-135	35	X
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 **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/13/2018 **Date Prepared:** 01/12/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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 **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/16/2018 **Date Prepared:** 01/16/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

5733606

Client Name: COG	Site Manager: Ike Tavarez
Project Name: COG - Citation X Fed Com #1	
Project Location: (county, state) Lea County, NM	Project #: 212C-MD-01056.200
Invoice to: COG	
Receiving Laboratory: Xenco	Sampler Signature: Clair Gonzales

Comments: Run deeper samples if total TPH exceeds 5,000 mg/kg.
Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: DATE	TIME	MATRIX WATER	SOIL	PRESERVATIVE METHOD HCL	HNO_3	ICE	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
	BH-1 0-1	1/8/2018			X			X	1		X		X												X				
	BH-1 2-3	01/08/18			X			X	1		X		X												X				
	BH-1 4-5	01/08/18			X			X	1		X		X												X				
	BH-1 6-7	01/08/18			X			X	1																X				
	BH-1 9-10	01/08/18			X			X	1																X				
	BH-1 14-15	01/08/18			X			X	1																X				
	BH-1 19-20	01/08/18			X			X	1																X				
	BH-1 24-25	01/08/18			X			X	1																X				
	BH-1 29-30	01/08/18			X			X	1																X				
	BH-1 34-35	01/08/18			X			X	1																X				

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Clair Gonzales	1/11/18	4PM	[signature]	1.11.18	16:14
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature

REMARKS: Standard

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

DELIVERED FEDEX UPS Tracking #: _____

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Temp: 0.4 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 0.2

Final 1.000

Page 45 of 51

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

5733646

Client Name: COG	Site Manager: Ike Tavarez
Project Name: COG - Citation X Fed Com #1	
Project Location: (county, state) Lea County, NM	Project #: 212C-MD-01056.200
Invoice to: COG	
Receiving Laboratory: Xenco	Sampler Signature: Clair Gonzales

Comments: Run deeper samples if total TPH exceeds 5,000 mg/kg.
Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
	BH-1 39-40	01/08/18			X				X		1																	X							
	BH-1 49-50	01/08/18			X				X		1																	X							
	BH-1 59-60	01/08/18			X				X		1																	X							
	BH-1 69-70	01/08/18			X				X		1																	X							
	BH-1 74-75	01/08/18			X				X		1																	X							
	BH-2 0-1	01/08/18			X				X		1		X		X													X							
	BH-2 2-3	01/08/18			X				X		1		X		X													X							
	BH-2 4-5	01/08/18			X				X		1		X		X													X							
	BH-2 6-7	01/08/18			X				X		1																	X							
	BH-2 9-10	01/08/18			X				X		1																	X							

Relinquished by: Clair Gonzales	Date: 1/11/18	Time: 414	Received by: [illegible] Date: 1.11.18 Time: 16:14
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY
Sample Temperature

REMARKS:

☐ RUSH: Same Day 24 hr 48 hr 72 hr
☐ Rush Charges Authorized
☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

5733606

Client Name:	COG	Site Manager:	Ike Tavarez
Project Name:	COG - Citation X Fed Com #1		
Project Location: (county, state)	Lea County, NM	Project #:	212C-MD-01056.200
Invoice to:	COG		
Receiving Laboratory:	Xenco	Sampler Signature:	Clair Gonzales

Comments: Run deeper samples if total TPH exceeds 5,000 mg/kg.
Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	BH-2 14-15	01/08/18			X				X		1																X								
	BH-2 19-20	01/08/18			X				X		1																X								
	BH-2 24-25	01/08/18			X				X		1																X								
	BH-2 29-30	01/08/18			X				X		1																X								
	BH-2 34-35	01/08/18			X				X		1																X								
	BH-2 39-40	01/08/18			X				X		1																X								
	BH-2 49-50	01/08/18			X				X		1																X								
	BH-2 59-60	01/08/18			X				X		1																								X
	BH-2 69-70	01/08/18			X				X		1																								X
	BH-3 0-1	01/09/18			X				X		1		X		X												X								

Relinquished by: Clair Gonzales	Date: 1/11/18	Time: 414	Received by: Brianne Smith
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Received by: Brianne Smith Date: 1.11.18 Time: 16:14

LAB USE ONLY

Sample Temperature

REMARKS:

- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Final 1.000

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

573366

Client Name:	COG	Site Manager:	Ike Tavarez
Project Name:	COG - Citation X Fed Com #1		
Project Location: (county, state)	Lea County, NM	Project #:	212C-MD-01056.200
Invoice to:	COG		
Receiving Laboratory:	Xenco	Sampler Signature:	Clair Gonzales

Comments: Run deeper samples if total TPH exceeds 5,000 mg/kg.
Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	BH-3 2-3	01/09/18			X				X			1		X		X												X								
	BH-3 4-5	01/09/18			X				X			1		X		X												X								
	BH-3 6-7	01/09/18			X				X			1																X								
	BH-3 9-10	01/09/18			X				X			1																X								
	BH-3 14-15	01/09/18			X				X			1																X								
	BH-3 19-20	01/09/18			X				X			1																X								
	BH-4 0-1	01/09/18			X				X			1		X		X												X								
	BH-4 2-3	01/09/18			X				X			1		X		X												X								
	BH-4 4-5	01/09/18			X				X			1		X		X												X								
	BH-4 6-7	01/09/18			X				X			1																X								

Relinquished by: Clair Gonzales	Date: 1/11/18	Time: 414	Received by:	Date: 1-11-18	Time: 16:14
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY
Sample Temperature

REMARKS:

☐ RUSH: Same Day 24 hr 48 hr 72 hr
☐ Rush Charges Authorized
☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Final 1.000

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

5733646

Client Name:	COG	Site Manager:	Ike Tavarez
Project Name:	COG - Citation X Fed Com #1		
Project Location: (county, state)	Lea County, NM	Project #:	212C-MD-01056.200
Invoice to:	COG		
Receiving Laboratory:	Xenco	Sampler Signature:	Clair Gonzales

Comments: Run deeper samples if total TPH exceeds 5,000 mg/kg.
Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: DATE	TIME	MATRIX WATER	SOIL		PRESERVATIVE METHOD HCL	HNO_3	ICE			# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
	BH-4 9-10	01/09/18			x				X			1																X							
	BH-4 14-15	01/09/18			x				X			1																X							
	Southwest 0-1 (Borehole)	01/09/18			x				X			1		X		X												X							
	Southwest 2-3 (Borehole)	01/09/18			x				X			1		X		X												X							
	Southwest 4-5 (Borehole)	01/09/18			x				X			1		X		X												X							
	North 0-1 (Borehole)	01/09/18			x				X			1		X		X												X							
	North 2-3 (Borehole)	01/09/18			x				X			1		X		X												X							
	North 4-5 (Borehole)	01/09/18			x				X			1		X		X												X							
	West 0-1 (Borehole)	01/09/18			x				X			1		X		X												X							
	West 2-3 (Borehole)	01/09/18			x				X			1		X		X												X							

Relinquished by: Clair Gonzales	Date: 1/10/18	Time: 414	Received by: Maynedlinth	Date: 1-11-18	Time: 16:14
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY
Sample Temperature

REMARKS:
- RUSH: Same Day 24 hr 48 hr 72 hr
- Rush Charges Authorized
- Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

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Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

5733660

Client Name:	COG	Site Manager:	Ike Tavarez
Project Name:	COG - Citation X Fed Com #1		
Project Location: (county, state)	Lea County, NM	Project #:	212C-MD-01056.200
Invoice to:	COG		
Receiving Laboratory:	Run deeper samples if total TPH exceeds 5,000 mg/kg.	Sampler Signature:	Clair Gonzales

Comments: Run deeper samples if total TPH exceeds 5,000 mg/kg, benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance			Hold
	West 4-5 (Borehole)	01/09/18			x				x			1		X		X												X							
	South 0-1 (Borehole)	01/09/18			x				x			1		X		X												X							
	South 2-3 (Borehole)	01/09/18			x				x			1		X		X												X							
	South 4-5 (Borehole)	01/09/18			x				x			1		X		X												X							
	East 0-1 (Borehole)	01/09/18			x				x			1		X		X												X							
	East 2-3 (Borehole)	01/09/18			x				x			1		X		X												X							
	East 4-5 (Borehole)	01/09/18			x				x			1		X		X												X							

Relinquished by: Clair Gonzales Date: 1/11/18 Time: 414
Received by: [signature] Date: 1.11.18 Time: 16:14

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

LAB USE ONLY
Sample Temperature

REMARKS:
☐ RUSH: Same Day 24 hr 48 hr 72 hr
☐ Rush Charges Authorized
☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Final 1.000

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 01/11/2018 04:14:00 PM

Work Order #: 573366

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping 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)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Shawnee Smith Date: 01/12/2018

Shawnee Smith

Checklist reviewed by: Kelsey Brooks Date: 01/12/2018

Kelsey Brooks

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,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Project Id:

Contact: Becky Haskell

Project Location: Citation X Federal Com #001H

Date Received in Lab: Thu Mar-22-18 09:10 am

Report Date: 27-MAR-18

Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	580038-001		580038-002		580038-003		580038-004			
	Field Id:	SB1 @ 75		SB1 @ 80		SB1 @ 85		SB1 @ 90			
	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Mar-20-18 10:05		Mar-20-18 10:30		Mar-20-18 11:11		Mar-20-18 12:45			
Chloride by EPA 300	***Extracted:***	Mar-26-18 09:30		Mar-26-18 09:30		Mar-26-18 09:30		Mar-26-18 09:30			
	Analyzed:	Mar-26-18 17:47		Mar-26-18 18:37		Mar-26-18 18:49		Mar-26-18 19:02			
	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		

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 Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

BS / BSD Recoveries

Project Name: Citation X Federal COm #001H

Work Order #: 580038 **Project ID:**

Analyst: RNL **Date Prepared:** 03/26/2018 **Date Analyzed:** 03/26/2018

Lab Batch ID: 3044820 **Sample:** 7641494-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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
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

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: Citation X Federal COm #001H

Work Order # : 580038 **Project ID:**

Lab Batch ID: 3044820 **QC- Sample ID:** 580037-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/26/2018 **Date Prepared:** 03/26/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	5390	250	6150	304	250	6350	384	3	80-120	20	X

Lab Batch ID: 3044820 **QC- Sample ID:** 580038-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/26/2018 **Date Prepared:** 03/26/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1080	250	1440	144	250	1470	156	2	80-120	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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

CHAIN OF CUSTODY

XENCO LABORATORIES

Setting the Standard since 1990

Page 1 Of 1

Revision 2016.1

Stafford, TX (281) 240-4200 | Dallas, TX (214) 902-0300 | El Paso, TX (915) 585-3443 | Lubbock, TX (806) 794-1296 | Midland, TX (432) 704-5440 | San Antonio, TX (210) 509-3334 | Phoenix, AZ (480) 355-0900 | Service Center- Baton Rouge, LA (832) 712-8143 | Service Center- Amarillo, TX (806) 678-4514 | Service Center- Hobbs, NM (575) 392-7550

www.xenco.com

580038

Xenco Quote #

Xenco Job # 580038

Client / Reporting Information

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, slhitchcock@concho.com
cbrunson@bbcinternational.com

Phone No: 432-818-2372

Project Contact: Becky Haskell

Samplers's Name: Jeff Ornelas

Project Information

Project Name/Number: Citation X Federal Com #001H

Project Location:

Citation X Federal Com #001H

Invoice To: COG Operating LLC
Attn: Robert McNeill
600 W. Illinois
Midland, Texas 79701

PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	CHLORIDE	Field Comments
1	SB1 @	75	3-20	1005	S	1								X	X	1
2	SB1 @	80	3-20	1030	S	1								X	X	2
3	SB1 @	85	3-20	1111	S	1								X	X	3
4	SB1 @	90	3-20	1245	S	1								X	X	4
5																
6																
7																
8																
9																
10																

Turnaround Time (Business days)

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
- ☐ Contract TAT
- ☐ 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- ☐ Level II Std QC
- ☐ Level IV (Full Data Pkg /raw data)
- ☐ Level III Std QC+ Forms
- ☐ TRRP Level IV
- ☐ Level 3 (CLP Forms)
- ☐ UST / RG -411
- ☐ Level II Report with TRRP checklist

Notes:

FED-EX / UPS: Tracking # 660639162701

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Jeff Ornelas	3-21-18 14:19	1	2	3/21/18 4:30	2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time: 3/22/18 9:10	Received By: 5 Brenda Ward	Custody Seal #	Preserved where applicable	On Ice ☒ Cooler Temp. -0.9°C Thermo. Corr. Factor 3.9/3.9

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating, LLC

Date/ Time Received: 03/22/2018 09:10:00 AM

Work Order #: 580038

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

Temperature Measuring device used : IR-3

Sample Receipt 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)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Brenda Ward Date: 03/22/2018
Brenda Ward

Checklist reviewed by: Jessica Kramer Date: 03/22/2018
Jessica Kramer

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: **COG Operating, LLC** (OGRID# 229137)	Contact: **Robert McNeill**
Address: **600 West Illinois Avenue, Midland TX 79701**	Telephone No.: **432-683-7443**
Facility Name: **Citation X Federal Com #001H**	Facility Type: **Flowline**

Surface Owner: BLM	Mineral Owner: Federal	API No.: 30-025-39960

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	8	19S	32E					Lea

Latitude: 32.669795 **Longitude:** -103.795431 NAD83

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 267bbls	Volume Recovered: 0bbls
Source of Release: Flowline	Date and Hour of Occurrence: Unknown	Date and Hour of Discovery: 12/6/2017 3:00pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Olivia Yu-NMOCD Shelly Tucker-BLM	
By Whom? Dakota Neel	Date and Hour: 12/7/2017 7:56am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED
By Olivia Yu at 7:41 am, Dec 08, 2017

Describe Cause of Problem and Remedial Action Taken.*

The release was caused by a flowline rupture.

Describe Area Affected and Cleanup Action Taken.*

The release impacted the pasture 0.5mi west of the Citation X Federal Com #001H location. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

Signature: Sheldon Hitchcock	OIL CONSERVATION DIVISION
Printed Name: Sheldon L. Hitchcock	Approved by Environmental Specialist:
Title: HSE Coordinator	Approval Date: 12/8/2017 Expiration Date:
E-mail Address: slhitchcock@concho.com	Conditions of Approval: see attached directive Attached ☑
Date: 12/7/2017 Phone: 575-746-2010	

* Attach Additional Sheets If Necessary

1RP-4890 nOY1734227772 pOY1734228543

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 division-approved corrective action 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; C_6 thru C_{36}), 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

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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

From: Cliff Brunson <cbrunson@bbcinternational.com>
Sent: Wednesday, June 6, 2018 6:51 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; 'Shelly Tucker' <stucker@blm.gov>
Cc: Hernandez, Christina, EMNRD <Christina.Hernandez@state.nm.us>; '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: 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
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World-Wide Environmental Specialists
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