

**APPROVED**

By Olivia Yu at 7:36 am, Feb 01, 2018

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## DELINEATION WORKPLAN

### CENTURION PIPELINE LP – CROSSROADS AWC 8" ML (Leak Date: 07/1/17)

**RP # 1RP-4756**

NMOCD approves of the proposed remedial activities for the southern portion and additional delineation for the northern portion of 1RP-4756. 2 more confirmation sample locations are required: between SP3/4 & SP5/6 and between SP6/10 & SP11.

This delineation workplan and remediation proposal addresses the release associated with RP # 1RP-4756.

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:***

***Centurion will excavate the spill area as depicted on the following site diagram. The leak area near SP2 (green shade on diagram) will be excavated to a depth of 8 feet. The leak area near SP3 and SP4 (pink shade on diagram) will be excavated to a depth of 3 feet. The leak area near SP5, SP6, SP9, and SP10 (light blue shade on diagram) will be excavated to a depth of 4 feet. The leak area near SP11 (purple shade on diagram) will be excavated to a depth of 6 feet. Bottom and sidewalls samples will be collected at the marked locations on the diagram.***

***The dark blue area to the north will be further delineated and a plan submitted for this area as soon as the south area is completed and all NMDOT permits are in place.***

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.

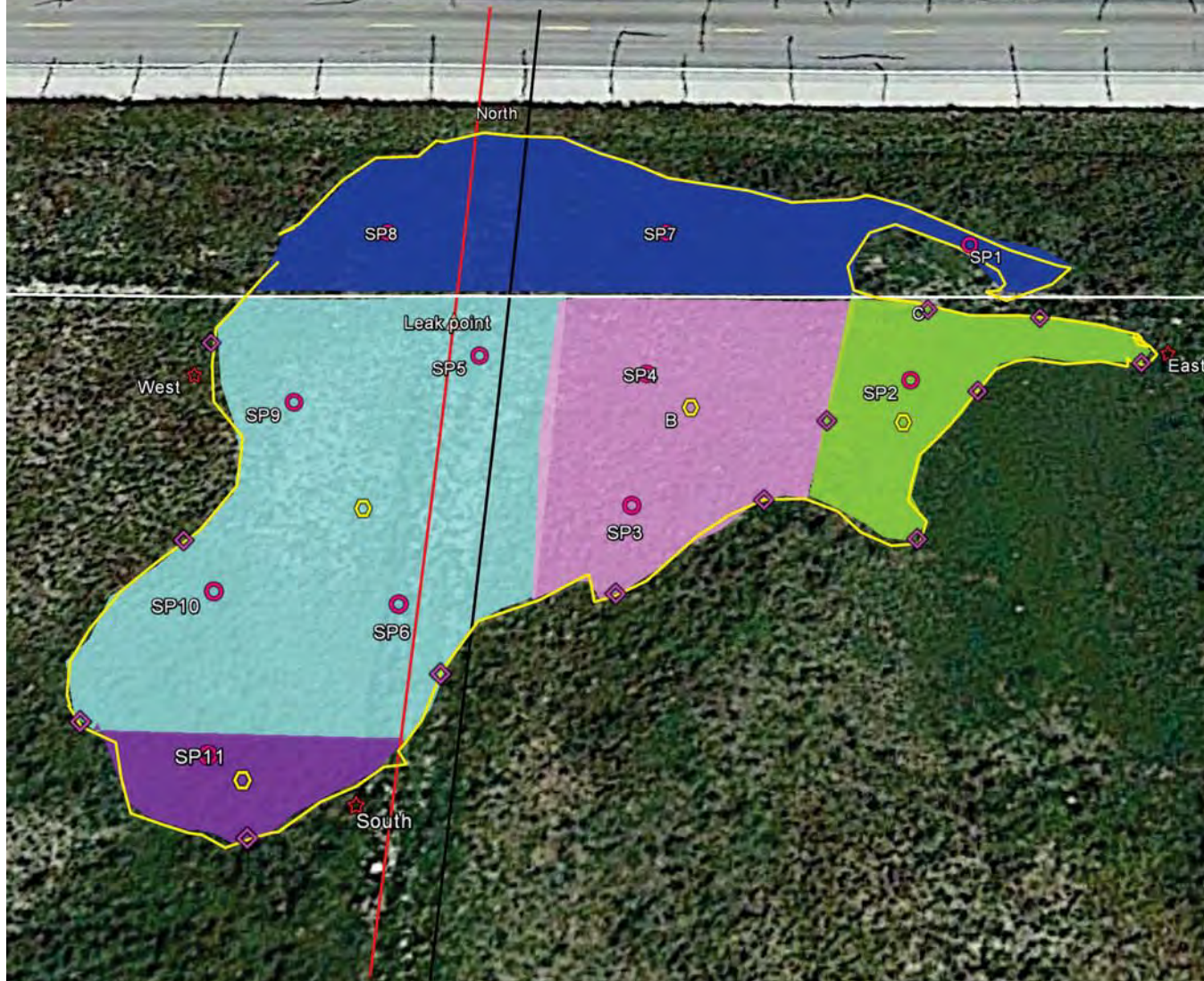


# Centurion, Crossroads AWC Pipeline

Leak date: 07/01/2017  
Lea County, NM  
1RP-4756

## Legend

- 3 ft Excavation
- 4 ft Excavation
- 6 ft Excavation
- 8 ft Excavation
- Active line
- Cardinal sample points
- Fence line
- Future remediation activities
- Inactive line
- Leak area
- Leak point
- Proposed bottom confirmation samples
- Proposed sidewall confirmation samples
- Sample points



Google Earth

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100 ft



## Centurion, Crossroads AWC Pipeline

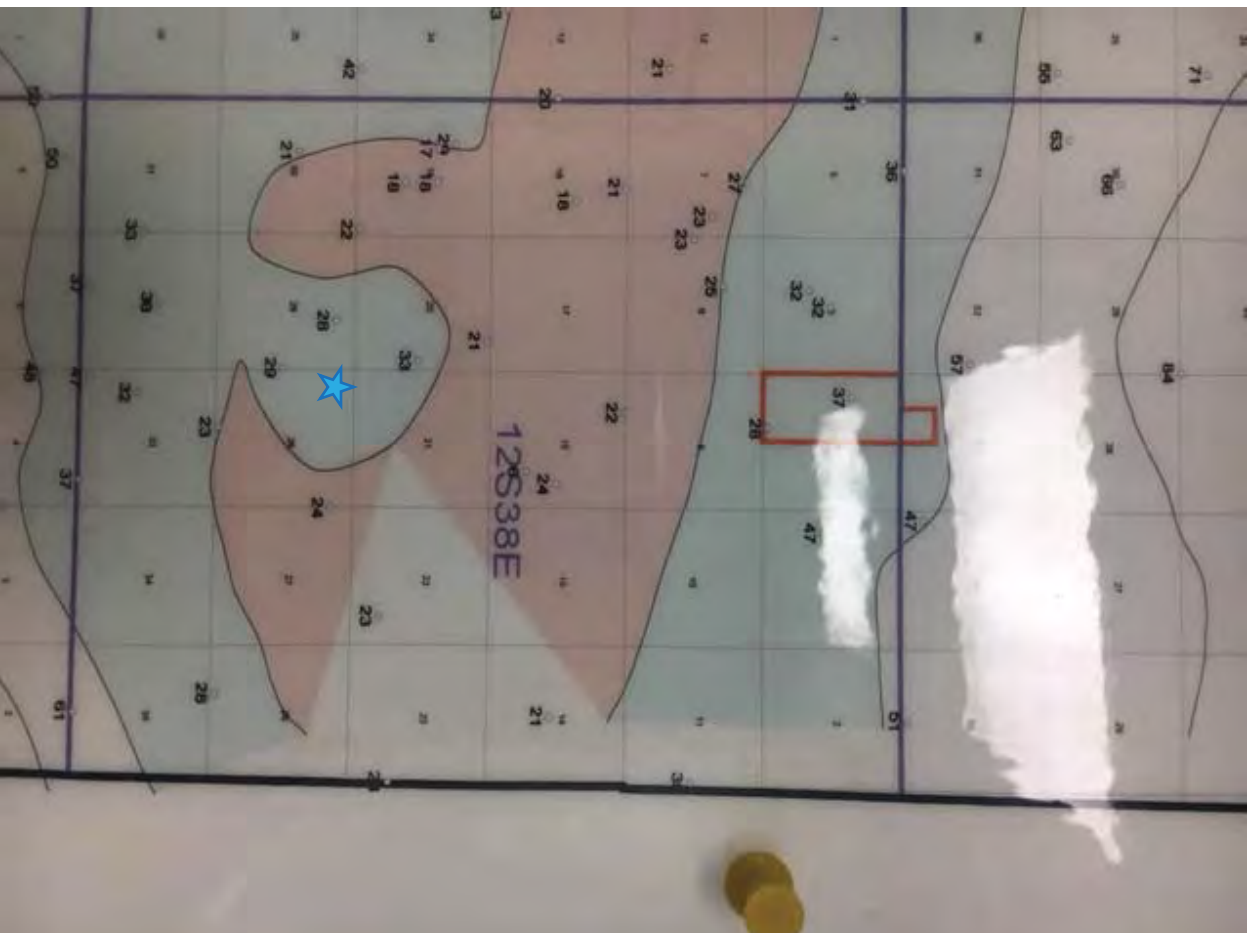
### Sample points, hand auger

SP1, N 33.25664 W-103.10971  
SP2, N 33.25654 W-103.10975  
SP3, N 33.25646 W-103.10993  
SP4, N 33.25654 W-103.10993  
SP5, N 33.25655 W-103.11004  
SP6, N 33.25640 W-103.11007  
SP7, N 33.25664 W-103.10992  
SP8, N 33.25664 W-103.11012  
SP9, N 33.25652 W-103.11016  
SP10, N 33.25640 W-103.11019  
SP11, N 33.25631 W-103.11017  
NORTH, N 33.25673 W-103.11005  
SOUTH, N 33.25628 W-103.11007  
EAST, N 33.25655 W-103.10956  
WEST, N 33.25654 W-103.11025

# Centurion Crossroads AWC Pipeline

U/L D, Section 28, T12S, R38E

Groundwater: <50'



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CL W#### 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													Water		
POD Number	Code	Sub-basin	County	Q			Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Column
				64	16	4									
<a href="#">L 06965</a>		L	LE	2	4	20	12S	38E	675781	3681959*	<input type="checkbox"/>	899	65	39	26
<a href="#">L 0741Z</a>		L	LE	4	3	28	12S	38E	676622	3679963*	<input type="checkbox"/>	1271	40	18	22
Average Depth to Water:															28 feet
Minimum Depth:															18 feet
Maximum Depth:															39 feet

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 676198      Northing (Y): 3681162      Radius: 1700

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

7/12/17 10:59 AM

WATER COLUMN/ AVERAGE DEPTH TO  
WATER

Public Land Survey System (PLSS)

☐ Q64:  Q16:  NW Q4:  NW Sec:  28 Tws:  12S Rng:  38E

State Plane Coordinate System - NAD27

☐ X:  ft Y:  ft Zone:

State Plane Coordinate System - NAD83

☐ X:  ft Y:  ft Zone:

Degrees/Minutes/Seconds

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

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

UTM - NAD27

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

SUBMIT

All Conversion Results are displayed as NAD 1983 UTM Zone 13

Easting (X):  676198.0 mtrs Northing (Y):  3681162.0 mtrs

~~ Please keep screen open to copy UTM values for Reports. ~~

**Laboratory Analytical Results Summary**  
**Crossroads AWC Pipeline**

		Sample	SP1 @ 1'	SP1 @ 4'	SP1 @ 6'	SP1 @ 8'	SP1 @ 11'	SP1 @ 13'
Analyte	Method	Date	8/8/17	8/8/17	8/8/17	8/8/17	8/8/17	8/8/17
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.500	1.72	<0.400	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		5.71	16.7	6.25	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		7.17	13.3	9.79	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		46.7	72.1	43.6	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		59.6	104	59.7	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		64	368	336	256	176	192
GRO	TPH 8015M		2960	3020	4530	<10.0	<10.0	<10.0
DRO	TPH 8015M		13700	9230	17300	20.1	77.1	68.3
EXT DRO	TPH 8015M		1510	926	1750	21.5	13.5	12

		Sample	SP2 @ 1'	SP2 @ 4'	SP2 @ 6'	SP2 @ 8'	SP2 @ 11'	SP2 @ 13'	SP2 @ 18'
Analyte	Method	Date	8/8/17	8/8/17	8/8/17	8/8/17	8/8/17	8/8/17	1/17/18
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		0.51	0.603	0.544	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		8.26	8.76	7.43	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		10.4	10.9	10.5	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		52	53.6	45.8	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		71.2	73.8	64.3	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		32	336	384	240	240	160	176
GRO	TPH 8015M		4700	3580	4480	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		18100	11900	17600	29.3	28.5	69.7	<10.0
EXT DRO	TPH 8015M		1770	1220	1820	25.1	<10.0	11.6	<10.0

		Sample	SP3 @ 1'	SP3 @ 2'	SP3 @ 3'	SP3 @ 5'	SP3 @ 10'
Analyte	Method	Date	8/8/17	8/8/17	8/8/17	1/17/18	1/17/18
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	0.18	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		32	16	64	176	128
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		38.8	<10.0	51.7	<10.0	<10.0
EXT DRO	TPH 8015M		10.2	<10.0	14.9	<10.0	<10.0

		Sample	SP4 @ 1'	SP4 @ 2'	SP4 @ 3'	SP4 @ 5'	SP4 @ 10'
Analyte	Method	Date	8/8/17	8/8/17	8/8/17	1/17/18	1/17/18
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	0.178	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		16	<16.0	64	160	144
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		16.1	<10.0	45.5	<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0	12.8	<10.0	<10.0

		Sample	SP5 @ 1'	SP5 @ 2'	SP5 @ 3'	SP5 @ 4'	SP5 @ 5'	SP5 @ 10'	SP5 @ 15'
Analyte	Method	Date	8/9/17	8/9/17	8/9/17	1/18/18	1/18/18	1/18/18	1/18/18
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		13.3	5.52	6.77	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		103	59.3	41.7	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		78.1	41.1	25.1	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		276	207	136	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		470	313	209	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		32	16	32	16	32	16	32
GRO	TPH 8015M		12500	7350	3240	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		26400	20200	8680	<10.0	<10.0	<10.0	<10.0
EXT DRO	TPH 8015M		2590	2030	1100	<10.0	<10.0	<10.0	<10.0

		Sample	SP6 @ 1'	SP6 @ 2'	SP6 @ 3'	SP6 @ 4'	SP6 @ 5'	SP6 @ 10'	SP6 @ 15'
Analyte	Method	Date	8/9/17	8/9/17	8/9/17	1/18/18	1/18/18	1/18/18	1/18/18
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		0.064	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		0.163	0.263	0.347	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	0.347	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		16	<16.0	<16.0	<16.0	<16.0	<16.0	16
GRO	TPH 8015M		<10.0	<10.0	12.3	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		346	863	1350	<10.0	<10.0	<10.0	<10.0
EXT DRO	TPH 8015M		82.6	188	312	<10.0	<10.0	<10.0	<10.0

		Sample	SP7 @ 1'	SP7 @ 2'	SP7 @ 3'
Analyte	Method	Date	8/9/17	8/9/17	8/9/17
			mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		15.4	10.3	12.2
Toluene	BTEX 8021B		107	69.7	71.6
Ethylbenzene	BTEX 8021B		64.6	39.9	42.6
Total Xylenes	BTEX 8021B		267	198	212
Total BTEX	BTEX 8021B		454	318	338
Chloride	SM4500Cl-B		16	16	<16.0
GRO	TPH 8015M		10000	6910	6620
DRO	TPH 8015M		26100	24200	24400
EXT DRO	TPH 8015M		2840	2960	2930

		Sample	SP8 @ 1'	SP8 @ 2'	SP8 @ 3'
Analyte	Method	Date	8/9/17	8/9/17	8/9/17
			mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<5.00	5.9	6.05
Toluene	BTEX 8021B		40.4	44.2	51.1
Ethylbenzene	BTEX 8021B		26.8	30.5	34
Total Xylenes	BTEX 8021B		189	150	168
Total BTEX	BTEX 8021B		256	231	259
Chloride	SM4500Cl-B		<16.0	<16.0	16
GRO	TPH 8015M		7490	5360	5110
DRO	TPH 8015M		23400	19300	18000
EXT DRO	TPH 8015M		2530	2010	2000

**Laboratory Analytical Results Summary**  
**Crossroads AWC Pipeline**

		Sample	SP9 @ 1'	SP9 @ 2'	SP9 @ 3'	SP9 @ 4'	SP9 @ 5'	SP9 @ 10'	SP9 @ 15'
Analyte	Method	Date	8/9/17	8/9/17	8/9/17	1/19/18	1/19/18	1/19/18	1/19/18
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<b>0.059</b>	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		<16.0	<b>16</b>	<b>16</b>	<16.0	<b>16</b>	<16.0	<16.0
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		<b>736</b>	<b>170</b>	<b>172</b>	<10.0	<10.0	<10.0	<10.0
EXT DRO	TPH 8015M		<b>129</b>	<b>30.7</b>	<b>47.2</b>	<10.0	<10.0	<10.0	<10.0

		Sample	NORTH @ SURFACE	SOUTH @ SURFACE	EAST @ SURFACE	WEST @ SURFACE
Analyte	Method	Date	8/9/17	8/9/17	8/9/17	8/9/17
			mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<b>0.06</b>	<b>0.089</b>	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<b>0.063</b>	<b>0.075</b>	<0.050
Total Xylenes	BTEX 8021B		<0.150	<b>0.306</b>	<b>0.329</b>	<0.150
Total BTEX	BTEX 8021B		<0.300	<b>0.429</b>	<b>0.493</b>	<0.300
Chloride	SM4500Cl-B		<b>16</b>	<b>16</b>	<b>16</b>	<b>32</b>
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0

		Sample	SP10 @ 1'	SP10 @ 2'	SP10 @ 3'	SP10 @ 4'	SP10 @ 5'	SP10 @ 10'	SP10 @ 15'
Analyte	Method	Date	8/9/17	8/9/17	8/9/17	1/19/18	1/19/18	1/19/18	1/19/18
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		<b>16</b>	<16.0	<16.0	<b>32</b>	<b>16</b>	<b>32</b>	<16.0
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		<b>528</b>	<b>245</b>	<b>127</b>	<10.0	<10.0	<10.0	<10.0
EXT DRO	TPH 8015M		<b>90</b>	<b>43.1</b>	<b>37.3</b>	<10.0	<10.0	<10.0	<10.0

		Sample	SP11 @ 1'	SP11 @ 2'	SP11 @ 3'	SP11 @ 4'	SP11 @ 5'	SP11 @ 6'	SP11 @ 11'	SP11 @ 16'
Analyte	Method	Date	8/9/17	8/9/17	8/9/17	1/22/18	1/22/18	1/22/18	1/22/18	1/22/18
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.500	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<b>3.52</b>	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<b>4.82</b>	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<b>23.3</b>	<b>0.348</b>	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<b>31.6</b>	<b>0.348</b>	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		<16.0	<16.0	<16.0	<b>16</b>	<b>32</b>	<16.0	<b>16</b>	<b>16</b>
GRO	TPH 8015M		<10.0	<10.0	<10.0	<b>751</b>	<b>26.8</b>	<10.0	<10.0	<10.0
DRO	TPH 8015M		<b>549</b>	<b>252</b>	<b>117</b>	<b>2950</b>	<b>360</b>	<10.0	<10.0	<10.0
EXT DRO	TPH 8015M		<b>92.6</b>	<b>46.2</b>	<b>36.4</b>	<b>311</b>	<b>56.2</b>	<10.0	<10.0	<10.0





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PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

August 17, 2017

Cliff Brunson

BBC International, Inc.

P. O. Box 805

Hobbs, NM 88241

RE: CROSSROADS AWC PIPELINE

Enclosed are the results of analyses for samples received by the laboratory on 08/10/17 10:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Halocetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" being more prominent.

Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 1 @ 4' (H702104-02)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	1.72	0.500	08/14/2017	ND	2.06	103	2.00	1.69	
Toluene*	16.7	0.500	08/14/2017	ND	1.89	94.7	2.00	1.24	
Ethylbenzene*	13.3	0.500	08/14/2017	ND	1.97	98.7	2.00	0.866	
Total Xylenes*	72.1	1.50	08/14/2017	ND	5.87	97.9	6.00	0.735	
Total BTEx	104	3.00	08/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD) 121 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	08/14/2017	ND	400	100	400	3.92	
TPH 8015M		mg/kg	Analyzed By: MS						S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	3020	50.0	08/11/2017	ND	203	102	200	0.693	
DRO >C10-C28	9230	50.0	08/11/2017	ND	202	101	200	1.29	
EXT DRO >C28-C36	926	50.0	08/11/2017	ND					

Surrogate: 1-Chlorooctane 196 % 28.3-164

Surrogate: 1-Chlorodecane 222 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 1 @ 6' (H702104-03)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.400	0.400	08/12/2017	ND	1.92	95.8	2.00	2.15	QM-07, QR-03
Toluene*	6.25	0.400	08/12/2017	ND	1.76	87.9	2.00	1.78	QM-07, QR-03
Ethylbenzene*	9.79	0.400	08/12/2017	ND	1.84	92.0	2.00	2.23	QM-07, QR-03
Total Xylenes*	43.6	1.20	08/12/2017	ND	5.44	90.6	6.00	1.85	QM-07
Total BTEx	59.7	2.40	08/12/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD) 133 % 72-148

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	08/14/2017	ND	400	100	400	3.92	
TPH 8015M		mg/kg	Analyzed By: MS						S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	4530	50.0	08/11/2017	ND	203	102	200	0.693	
DRO >C10-C28	17300	50.0	08/11/2017	ND	202	101	200	1.29	
EXT DRO >C28-C36	1750	50.0	08/11/2017	ND					

Surrogate: 1-Chlorooctane 247 % 28.3-164

Surrogate: 1-Chlorooctadecane 442 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 1 @ 8' (H702104-04)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	<0.150	0.150	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	<0.300	0.300	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*107 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>256</b>	16.0	08/14/2017	ND	400	100	400	3.92	
<b>TPH 8015M</b>									

**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/11/2017	ND	203	102	200	0.693	
<b>DRO &gt;C10-C28</b>	<b>20.1</b>	10.0	08/11/2017	ND	202	101	200	1.29	
<b>EXT DRO &gt;C28-C36</b>	<b>21.5</b>	10.0	08/11/2017	ND					

*Surrogate: 1-Chlorooctane*
*79.3 %*
*28.3-164*
*Surrogate: 1-Chlorooctadecane*
*77.7 %*
*34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/08/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 1 @ 11' (H702104-05)**

BTEx 8021B		mg/ kg	Analyzed By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value	QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00		2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00		1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00		2.23	
Total Xylenes*	<0.150	0.150	08/12/2017	ND	5.44	90.6	6.00		1.85	
Total BTEx	<0.300	0.300	08/12/2017	ND						

Surrogate: 4-Bromofluorobenzene (PTD)		107 %	72-148						
Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	08/14/2017	ND	400	100	400	3.92	
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/11/2017	ND	203	102	200	0.693	
DRO >C10-C28	77.1	10.0	08/11/2017	ND	202	101	200	1.29	
EXT DRO >C28-C36	13.5	10.0	08/11/2017	ND					

Surrogate: 1-Chlorooctane	92.8 %	28.3-164							
Surrogate: 1-Chlorodecane	94.4 %	34.7-157							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 1 @ 13' (H702104-06)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	<0.150	0.150	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	<0.300	0.300	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*105 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>192</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						

GR0 C6-C10	<10.0	10.0	08/11/2017	ND	203	102	200	0.693	
<b>DRO &gt;C10-C28</b>	<b>68.3</b>	10.0	08/11/2017	ND	202	101	200	1.29	
<b>EXT DRO &gt;C28-C36</b>	<b>12.0</b>	10.0	08/11/2017	ND					

*Surrogate: 1-Chlorooctane*
*87.2 %*
*28.3-164*
*Surrogate: 1-Chlorodecane*
*91.3 %*
*34.7-157*

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 2 @ 1' (H702104-07)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**
**S-04**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.510</b>	0.200	08/12/2017	ND	1.92	95.8	2.00	2.15	
<b>Toluene*</b>	<b>8.26</b>	0.200	08/12/2017	ND	1.76	87.9	2.00	1.78	
<b>Ethylbenzene*</b>	<b>10.4</b>	0.200	08/12/2017	ND	1.84	92.0	2.00	2.23	
<b>Total Xylenes*</b>	<b>52.0</b>	0.600	08/12/2017	ND	5.44	90.6	6.00	1.85	
<b>Total BTEX</b>	<b>71.2</b>	1.20	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*172 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	08/14/2017	ND	400	100	400	3.92	
<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						<b>S-06</b>

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>4700</b>	50.0	08/11/2017	ND	203	102	200	0.693	
<b>DRO &gt;C10-C28</b>	<b>18100</b>	50.0	08/11/2017	ND	202	101	200	1.29	
<b>EXT DRO &gt;C28-C36</b>	<b>1770</b>	50.0	08/11/2017	ND					

*Surrogate: 1-Chlorooctane*
*248 %*
*28.3-164*
*Surrogate: 1-Chlorodecane*
*446 %*
*34.7-157*

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 2 @ 4' (H702104-08)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.603	0.500	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	8.76	0.500	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	10.9	0.500	08/12/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	53.6	1.50	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	73.8	3.00	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

<b>Chloride, SM4500Cl-B</b>	125 %	72-148						
	mg/kg		Analyzed By: AC					

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>336</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>	mg/kg		Analyzed By: MS						<b>S-06</b>

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>3580</b>	50.0	08/11/2017	ND	203	102	200	0.693	
<b>DRO &gt;C10-C28</b>	<b>11900</b>	50.0	08/11/2017	ND	202	101	200	1.29	
<b>EXT DRO &gt;C28-C36</b>	<b>1220</b>	50.0	08/11/2017	ND					

*Surrogate: 1-Chlorooctane*

	205 %	28.3-164						
<i>Surrogate: 1-Chlorooctadecane</i>	290 %	34.7-157						

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 2 @ 6' (H702104-09)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.544</b>	0.500	08/12/2017	ND	1.92	95.8	2.00	2.15	
<b>Toluene*</b>	<b>7.43</b>	0.500	08/12/2017	ND	1.76	87.9	2.00	1.78	
<b>Ethylbenzene*</b>	<b>10.5</b>	0.500	08/12/2017	ND	1.84	92.0	2.00	2.23	
<b>Total Xylenes*</b>	<b>45.8</b>	1.50	08/12/2017	ND	5.44	90.6	6.00	1.85	
<b>Total BTEX</b>	<b>64.3</b>	3.00	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

126 %

72-148

**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>384</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>	<b>mg/kg</b>		<b>Analyzed By: MS</b>						<b>S-06</b>

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>4480</b>	50.0	08/11/2017	ND	203	102	200	0.693	
<b>DRO &gt;C10-C28</b>	<b>17600</b>	50.0	08/11/2017	ND	202	101	200	1.29	
<b>EXT DRO &gt;C28-C36</b>	<b>1820</b>	50.0	08/11/2017	ND					

*Surrogate: 1-Chlorooctane*

249 %

28.3-164

*Surrogate: 1-Chlorodecane*

459 %

34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 2 @ 8' (H702104-10)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	<0.150	0.150	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	<0.300	0.300	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*104 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>240</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>									

**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/11/2017	ND	203	102	200	0.693	
<b>DRO &gt;C10-C28</b>	<b>29.3</b>	10.0	08/11/2017	ND	202	101	200	1.29	
<b>EXT DRO &gt;C28-C36</b>	<b>25.1</b>	10.0	08/11/2017	ND					

*Surrogate: 1-Chlorooctane*
*93.8 %*
*28.3-164*
*Surrogate: 1-Chlorodecane*
*94.1 %*
*34.7-157*

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 2 @ 11' (H702104-11)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	<0.150	0.150	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	<0.300	0.300	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

108 %

72-148

**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>240</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>									

**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/11/2017	ND	203	102	200	0.693	
<b>DRO &gt;C10-C28</b>	<b>28.5</b>	10.0	08/11/2017	ND	202	101	200	1.29	
EXT DRO >C28-C36	<10.0	10.0	08/11/2017	ND					

*Surrogate: 1-Chlorooctane*

97.8 %

28.3-164

*Surrogate: 1-Chlorooctadecane*

100 %

34.7-157

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 2 @ 13' (H702104-12)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	<0.150	0.150	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	<0.300	0.300	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*105 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>160</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>									

**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/11/2017	ND	203	102	200	0.693	
<b>DRO &gt;C10-C28</b>	<b>69.7</b>	10.0	08/11/2017	ND	202	101	200	1.29	
<b>EXT DRO &gt;C28-C36</b>	<b>11.6</b>	10.0	08/11/2017	ND					

*Surrogate: 1-Chlorooctane*
*97.8 %*
*28.3-164*
*Surrogate: 1-Chlorooctadecane*
*99.9 %*
*34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/08/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 3 @ 1' (H702104-13)**
**BTEX 8021B**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	<0.150	0.150	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	<0.300	0.300	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

<b>Chloride, SM4500Cl-B</b>	106 %	72-148	<b>Analyzed By: AC</b>						
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Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	08/17/2017	ND	432	108	400	3.77	

**TPH 8015M**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/11/2017	ND	203	102	200	0.693	
<b>DRO &gt;C10-C28</b>	<b>38.8</b>	10.0	08/11/2017	ND	202	101	200	1.29	
<b>EXT DRO &gt;C28-C36</b>	<b>10.2</b>	10.0	08/11/2017	ND					

*Surrogate: 1-Chlorooctane*

96.8 %

28.3-164

*Surrogate: 1-Chlorooctadecane*

96.4 %

34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 3 @ 2' (H702104-14)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	<0.150	0.150	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	<0.300	0.300	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*104 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						

GRO C6-C10	<10.0	10.0	08/11/2017	ND	203	102	200	0.693	
DRO >C10-C28	<10.0	10.0	08/11/2017	ND	202	101	200	1.29	
EXT DRO >C28-C36	<10.0	10.0	08/11/2017	ND					

*Surrogate: 1-Chlorooctane*
*86.2 %*
*28.3-164*
*Surrogate: 1-Chlorodecane*
*88.6 %*
*34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 3 @ 3' (H702104-15)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00	2.23	
<b>Total Xylenes*</b>	<b>0.180</b>	0.150	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEx	<0.300	0.300	08/12/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD) 104 % 72-148

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>64.0</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>			Analyzed By: MS						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>51.7</b>	10.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>14.9</b>	10.0	08/12/2017	ND					

Surrogate: 1-Chlorooctane 80.6 % 28.3-164

Surrogate: 1-Chlorodecane 82.4 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/08/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 4 @ 1' (H702104-16)**

BTEx 8021B		mg/ kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	<0.150	0.150	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEx	<0.300	0.300	08/12/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD)		105 %	72-148						
Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	08/17/2017	ND	432	108	400	3.77	
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>16.1</b>	10.0	08/12/2017	ND	210	105	200	4.38	
EXT DRO >C28-C36	<10.0	10.0	08/12/2017	ND					

Surrogate: 1-Chlorooctane	91.3 %	28.3-164							
Surrogate: 1-Chlorodecane	93.0 %	34.7-157							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 4 @ 2' (H702104-17)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	<0.150	0.150	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	<0.300	0.300	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*102 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2017	ND	432	108	400	3.77	

**TPH 8015M**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/12/2017	ND	202	101	200	4.84	
DRO >C10-C28	<10.0	10.0	08/12/2017	ND	210	105	200	4.38	
EXT DRO >C28-C36	<10.0	10.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*
*92.2 %*
*28.3-164*
*Surrogate: 1-Chlorodecane*
*91.1 %*
*34.7-157*

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/08/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 4 @ 3' (H702104-18)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/12/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	<0.050	0.050	08/12/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/12/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	0.178	0.150	08/12/2017	ND	5.44	90.6	6.00	1.85	
Total BTEx	<0.300	0.300	08/12/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

Chloride, SM4500Cl-B		104 %	72-148	Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier

<b>Chloride</b>	<b>64.0</b>	16.0	08/17/2017	ND	432	108	400	3.77	
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TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>45.5</b>	10.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>12.8</b>	10.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*

	76.6 %	28.3-164							
<i>Surrogate: 1-Chlorooctadecane</i>	76.2 %	34.7-157							

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 5 @ 1' (H702104-19)**

BTEX 8021B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	13.3	10.0	08/14/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	103	10.0	08/14/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	78.1	10.0	08/14/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	276	30.0	08/14/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	470	60.0	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

Surrogate: 4-Bromofluorobenzene (P1D	106 %	72-148	
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AC

<b>Chloride</b>	<b>32.0</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>	<b>mg/kg</b>		<b>Analyzed By: MS</b>						<b>S-06</b>

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>12500</b>	50.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>26400</b>	50.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>2590</b>	50.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*

333 %

28.3-164

*Surrogate: 1-Chlorooctadecane*

645 %

34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 5 @ 2' (H702104-20)**

BTEX 8021B		mg/ kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	5.52	5.00	08/14/2017	ND	1.92	95.8	2.00	2.15	
Toluene*	59.3	5.00	08/14/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	41.1	5.00	08/14/2017	ND	1.84	92.0	2.00	2.23	
Total Xylenes*	207	15.0	08/14/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	313	30.0	08/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD) 106 % 72-148  
 Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	08/17/2017	ND	432	108	400	3.77	
TPH 8015M	mg/kg		Analyzed By: MS						S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	7350	50.0	08/12/2017	ND	202	101	200	4.84	
DRO >C10-C28	20200	50.0	08/12/2017	ND	210	105	200	4.38	
EXT DRO >C28-C36	2030	50.0	08/12/2017	ND					

Surrogate: 1-Chlorooctane 275 % 28.3-164  
 Surrogate: 1-Chlorooctadecane 499 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 5 @ 3' (H702104-21)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>6.77</b>	2.00	08/14/2017	ND	1.92	95.8	2.00	2.15	
<b>Toluene*</b>	<b>41.7</b>	2.00	08/14/2017	ND	1.76	87.9	2.00	1.78	
<b>Ethylbenzene*</b>	<b>25.1</b>	2.00	08/14/2017	ND	1.84	92.0	2.00	2.23	
<b>Total Xylenes*</b>	<b>136</b>	6.00	08/14/2017	ND	5.44	90.6	6.00	1.85	
<b>Total BTEX</b>	<b>209</b>	12.0	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*109 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						<b>S-06</b>

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>3240</b>	50.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>8680</b>	50.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>1100</b>	50.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*
*172 %*
*28.3-164*
*Surrogate: 1-Chlorodecane*
*195 %*
*34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 6 @ 1' (H702104-22)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.92	95.8	2.00	2.15	
<b>Toluene*</b>	<b>0.064</b>	0.050	08/14/2017	ND	1.76	87.9	2.00	1.78	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.84	92.0	2.00	2.23	
<b>Total Xylenes*</b>	<b>0.163</b>	0.150	08/14/2017	ND	5.44	90.6	6.00	1.85	
Total BTEX	<0.300	0.300	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*103 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>									

**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>346</b>	10.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>82.6</b>	10.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*
*84.1 %*
*28.3-164*
*Surrogate: 1-Chlorooctadecane*
*97.7 %*
*34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 6 @ 2' (H702104-23)**

BTEx 8021B		mg/ kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
<b>Total Xylenes*</b>	<b>0.263</b>	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEx	<0.300	0.300	08/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID		102 %	72-148						
Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2017	ND	432	108	400	3.77	
TPH 8015M		mg/kg	Analyzed By: MS						

GRO C6-C10	<10.0	10.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>863</b>	10.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>188</b>	10.0	08/12/2017	ND					

<i>Surrogate: 1-Chlorooctane</i>	90.0 %	28.3-164							
<i>Surrogate: 1-Chlorodecane</i>	104 %	34.7-157							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 6 @ 3' (H702104-24)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
<b>Total Xylenes*</b>	<b>0.347</b>	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
<b>Total BTEx</b>	<b>0.347</b>	0.300	08/14/2017	ND					

<i>Surrogate: 4-Bromofluorobenzene (PTD)</i>		102 %	72-148						
<b>Chloride, SM4500Cl-B</b>	<b>mg/kg</b>			<b>Analyzed By: AC</b>					

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>	<b>mg/kg</b>			<b>Analyzed By: MS</b>					

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>12.3</b>	10.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>1350</b>	10.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>312</b>	10.0	08/12/2017	ND					

<i>Surrogate: 1-Chlorooctane</i>	78.8 %	28.3-164							
<i>Surrogate: 1-Chlorodecane</i>	103 %	34.7-157							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 7 @ 1' (H702104-25)**

BTEX 8021B		mg/ kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	15.4	5.00	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	107	5.00	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	64.6	5.00	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	267	15.0	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	454	30.0	08/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD)		106 %	72-148						
Chloride, SM4500Cl-B	mg/kg			Analyzed By: AC					

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	08/17/2017	ND	432	108	400	3.77	
TPH 8015M	mg/kg			Analyzed By: MS					

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	10000	50.0	08/12/2017	ND	202	101	200	4.84	
DRO >C10-C28	26100	50.0	08/12/2017	ND	210	105	200	4.38	
EXT DRO >C28-C36	2840	50.0	08/12/2017	ND					

Surrogate: 1-Chlorooctane	321 %	28.3-164							
Surrogate: 1-Chlorooctadecane	631 %	34.7-157							

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 7 @ 2' (H702104-26)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>10.3</b>	5.00	08/14/2017	ND	1.95	97.4	2.00	1.41	
<b>Toluene*</b>	<b>69.7</b>	5.00	08/14/2017	ND	1.81	90.3	2.00	3.03	
<b>Ethylbenzene*</b>	<b>39.9</b>	5.00	08/14/2017	ND	1.89	94.6	2.00	2.37	
<b>Total Xylenes*</b>	<b>198</b>	15.0	08/14/2017	ND	5.66	94.3	6.00	2.51	
<b>Total BTEX</b>	<b>318</b>	30.0	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*107 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	08/17/2017	ND	432	108	400	3.77	
<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						<b>S-06</b>

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>6910</b>	50.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>24200</b>	50.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>2960</b>	50.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*
*274 %*
*28.3-164*
*Surrogate: 1-Chlorooctadecane*
*626 %*
*34.7-157*

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 7 @ 3' (H702104-27)**

BTEX 8021B		mg/ kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	12.2	5.00	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	71.6	5.00	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	42.6	5.00	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	212	15.0	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	338	30.0	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

Surrogate: 4-Bromofluorobenzene (P1D Chloride, SM4500Cl-B	106 %	72-148	Analyzed By: AC
	mg/kg		

Chloride	<16.0	16.0	08/17/2017	ND	416	104	400	0.00	
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TPH 8015M	mg/kg	Analyzed By: MS					S-06
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Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>6620</b>	50.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>24400</b>	50.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>2930</b>	50.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*

Surrogate: 1-Chlorooctadecane	281 %	28.3-164
	655 %	34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 8 @ 1' (H702104-28)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<5.00	5.00	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	40.4	5.00	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	26.8	5.00	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	189	15.0	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEx	256	30.0	08/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD)		106 %	72-148						
Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2017	ND	416	104	400	0.00	
TPH 8015M		mg/kg	Analyzed By: MS						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	7490	50.0	08/12/2017	ND	202	101	200	4.84	
DRO >C10-C28	23400	50.0	08/12/2017	ND	210	105	200	4.38	
EXT DRO >C28-C36	2530	50.0	08/12/2017	ND					

Surrogate: 1-Chlorooctane	311 %	28.3-164							
Surrogate: 1-Chlorooctadecane	596 %	34.7-157							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 8 @ 2' (H702104-29)**

BTEX 8021B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	5.90	5.00	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	44.2	5.00	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	30.5	5.00	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	150	15.0	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	231	30.0	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

Sutrogaite: 4-Bromofluorobenzene (PLD Chloride, SM4500Cl-B	106 %	72-148	Analyzed By: AC
	mg/kg		

TPH 8015M	mg/kg	Analyzed By: MS					S-06		
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Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>5360</b>	50.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>19300</b>	50.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>2010</b>	50.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*

	249 %	28.3-164
<i>Surrogate: 1-Chlorooctadecane</i>	482 %	34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 8 @ 3' (H702104-30)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	6.05	5.00	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	51.1	5.00	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	34.0	5.00	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	168	15.0	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	259	30.0	08/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD) 107 % 72-148

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
	Analyzed By: MS								
Chloride	16.0	16.0	08/17/2017	ND	416	104	400	0.00	
TPH 8015M	mg/kg								S-06

S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	5110	50.0	08/12/2017	ND	202	101	200	4.84	
	DRO >C10-C28	18000	50.0	08/12/2017	ND	210	105	200	4.38
EXT DRO >C28-C36	2000	50.0	08/12/2017	ND					

Surrogate: 1-Chlorooctane 235 % 28.3-164

Surrogate: 1-Chlorodecane 456 % 34.7-157

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**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 9 @ 1' (H702104-31)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<b>0.059</b>	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	<0.150	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	<0.300	0.300	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
**108 %**
**72-148**
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2017	ND	416	104	400	0.00	
<b>TPH 8015M</b>		<b>mg/kg</b>		<b>Analyzed By: MS</b>					

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>736</b>	10.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>129</b>	10.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*
**75.7 %**
**28.3-164**
*Surrogate: 1-Chlorotetradecane*
**84.5 %**
**34.7-157**

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 9 @ 2' (H702104-32)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	<0.150	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	<0.300	0.300	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*104 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	08/17/2017	ND	416	104	400	0.00	
<b>TPH 8015M</b>									

**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>170</b>	10.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>30.7</b>	10.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*
*73.6 %*
*28.3-164*
*Surrogate: 1-Chlorooctadecane*
*81.5 %*
*34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 9 @ 3' (H702104-33)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	<0.150	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	<0.300	0.300	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*103 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	08/17/2017	ND	416	104	400	0.00	
<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						

GR0 C6-C10	<10.0	10.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>172</b>	10.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>47.2</b>	10.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*
*74.8 %*
*28.3-164*
*Surrogate: 1-Chlorooctadecane*
*76.1 %*
*34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 10 @ 1' (H702104-34)**
**BTEX 8021B**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	<0.150	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	<0.300	0.300	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

<b>Chloride, SM4500Cl-B</b>	<i>104 %</i>	<i>72-148</i>	<b>Analyzed By: AC</b>						
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Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	08/17/2017	ND	416	104	400	0.00	
<b>TPH 8015M</b>			<b>Analyzed By: MS</b>						

GR0 C6-C10	<10.0	10.0	08/12/2017	ND	202	101	200	4.84	
<b>DRO &gt;C10-C28</b>	<b>528</b>	10.0	08/12/2017	ND	210	105	200	4.38	
<b>EXT DRO &gt;C28-C36</b>	<b>90.0</b>	10.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane*
*Surrogate: 1-Chlorooctadecane*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 10 @ 2' (H702104-35)**
**BTEX 8021B** **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	<0.150	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	<0.300	0.300	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)* **104 %** **72-148**
**Chloride, SM4500Cl-B** **mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2017	ND	416	104	400	0.00	

**TPH 8015M** **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/12/2017	ND	218	109	200	9.71	
<b>DRO &gt;C10-C28</b>	<b>245</b>	10.0	08/12/2017	ND	234	117	200	11.9	
<b>EXT DRO &gt;C28-C36</b>	<b>43.1</b>	10.0	08/12/2017	ND					

*Surrogate: 1-Chlorooctane* **94.9 %** **28.3-164**
*Surrogate: 1-Chlorooctadecane* **109 %** **34.7-157**

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 10 @ 3' (H702104-36)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	<0.150	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	<0.300	0.300	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*103 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2017	ND	416	104	400	0.00	
<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/14/2017	ND	212	106	200	1.84	
<b>DRO &gt;C10-C28</b>	<b>127</b>	10.0	08/14/2017	ND	210	105	200	0.298	
<b>EXT DRO &gt;C28-C36</b>	<b>37.3</b>	10.0	08/14/2017	ND					

*Surrogate: 1-Chlorooctane*
*73.9 %*
*28.3-164*
*Surrogate: 1-Chlorooctadecane*
*80.6 %*
*34.7-157*

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 11 @ 1' (H702104-37)**

BTEx 8021B		mg/ kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value	QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00		1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00		3.03	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.89	94.6	2.00		2.37	
Total Xylenes*	<0.150	0.150	08/14/2017	ND	5.66	94.3	6.00		2.51	
Total BTEx	<0.300	0.300	08/14/2017	ND						

Surrogate: 4-Bromofluorobenzene (PTD)		104 %	72-148						
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2017	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					

GR0 C6-C10	<10.0	10.0	08/14/2017	ND	212	106	200	1.84	
<b>DRO &gt;C10-C28</b>	<b>549</b>	10.0	08/14/2017	ND	210	105	200	0.298	
<b>EXT DRO &gt;C28-C36</b>	<b>92.6</b>	10.0	08/14/2017	ND					

Surrogate: 1-Chlorooctane	87.0 %	28.3-164							
Surrogate: 1-Chlorodecane	95.3 %	34.7-157							

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**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 11 @ 2' (H702104-38)**
**BTEX 8021B mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	<0.150	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	<0.300	0.300	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

<b>Chloride, SM4500Cl-B</b>	<b>104 %</b>	<b>72-148</b>	<b>Analyzed By: AC</b>						
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Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2017	ND	416	104	400	0.00	

**TPH 8015M mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/14/2017	ND	212	106	200	1.84	
<b>DRO &gt;C10-C28</b>	<b>252</b>	10.0	08/14/2017	ND	210	105	200	0.298	
<b>EXT DRO &gt;C28-C36</b>	<b>46.2</b>	10.0	08/14/2017	ND					

*Surrogate: 1-Chlorooctane*

77.3 %

28.3-164

*Surrogate: 1-Chlorodecane*

81.2 %

34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SP 11 @ 3' (H702104-39)**
**BTEX 8021B**      **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	<0.150	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	<0.300	0.300	08/14/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*      *105 %*      *72-148*
**Chloride, SM4500Cl-B**      **mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2017	ND	416	104	400	0.00	

**TPH 8015M**      **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/14/2017	ND	212	106	200	1.84	
<b>DRO &gt;C10-C28</b>	<b>117</b>	10.0	08/14/2017	ND	210	105	200	0.298	
<b>EXT DRO &gt;C28-C36</b>	<b>36.4</b>	10.0	08/14/2017	ND					

*Surrogate: 1-Chlorooctane*      *94.4 %*      *28.3-164*
*Surrogate: 1-Chlorodecane*      *102 %*      *34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

08/10/2017

Sampling Date:

08/09/2017

Reported:

08/17/2017

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

CENTURION- LEA CO NM

**Sample ID: NORTH @ SURFACE (H702104-40)**
**BTEX 8021B**

mg/kg

Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<0.050	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<0.050	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	<0.150	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEX	<0.300	0.300	08/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD)

105 %

72-148

**Chloride, SM4500Cl-B**

mg/kg

Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	08/17/2017	ND	416	104	400	0.00	
<b>TPH 8015M</b>		mg/kg	Analyzed By: MS						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/14/2017	ND	212	106	200	1.84	
DRO >C10-C28	<10.0	10.0	08/14/2017	ND	210	105	200	0.298	
EXT DRO >C28-C36	<10.0	10.0	08/14/2017	ND					

Surrogate: 1-Chlorooctane

79.9 %

28.3-164

Surrogate: 1-Chlorodecane

81.0 %

34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SOUTH @ SURFACE (H702104-41)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/14/2017	ND	1.95	97.4	2.00	1.41	
Toluene*	<b>0.060</b>	0.050	08/14/2017	ND	1.81	90.3	2.00	3.03	
Ethylbenzene*	<b>0.063</b>	0.050	08/14/2017	ND	1.89	94.6	2.00	2.37	
Total Xylenes*	<b>0.306</b>	0.150	08/14/2017	ND	5.66	94.3	6.00	2.51	
Total BTEx	<b>0.429</b>	0.300	08/14/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD Chloride, SM4500Cl-B	103 %	72-148	Analyzed By: AC
mg/kg			

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>16.0</b>	16.0	08/17/2017	ND	416	104	400	0.00	
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/14/2017	ND	212	106	200	1.84	
DRO >C10-C28	<10.0	10.0	08/14/2017	ND	210	105	200	0.298	
EXT DRO >C28-C36	<10.0	10.0	08/14/2017	ND					

Surrogate: 1-Chlorooctane	77.8 %	28.3-164
Surrogate: 1-Chlorodecane	78.0 %	34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: EAST @ SURFACE (H702104-42)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/15/2017	ND	2.00	99.8	2.00	0.488	
Toluene*	<b>0.089</b>	0.050	08/15/2017	ND	1.87	93.5	2.00	1.49	
Ethylbenzene*	<b>0.075</b>	0.050	08/15/2017	ND	1.95	97.4	2.00	0.628	
Total Xylenes*	<b>0.329</b>	0.150	08/15/2017	ND	5.78	96.4	6.00	0.679	
Total BTEX	<b>0.493</b>	0.300	08/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD)		103 %	72-148						
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	08/17/2017	ND	416	104	400	0.00	
	mg/kg								
	Analyzed By: MS								
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/14/2017	ND	212	106	200	1.84	
DRO >C10-C28	<10.0	10.0	08/14/2017	ND	210	105	200	0.298	
EXT DRO >C28-C36	<10.0	10.0	08/14/2017	ND					

Surrogate: 1-Chlorooctane	80.8 %	28.3-164
Surrogate: 1-Chlorodecane	83.0 %	34.7-157

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Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 08/10/2017  
 Reported: 08/17/2017  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 08/09/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: WEST @ SURFACE (H702104-43)**
**BTEX 8021B**

mg/kg

Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/15/2017	ND	2.00	99.8	2.00	0.488	
Toluene*	<0.050	0.050	08/15/2017	ND	1.87	93.5	2.00	1.49	
Ethylbenzene*	<0.050	0.050	08/15/2017	ND	1.95	97.4	2.00	0.628	
Total Xylenes*	<0.150	0.150	08/15/2017	ND	5.78	96.4	6.00	0.679	
Total BTEX	<0.300	0.300	08/15/2017	ND					

Surrogate: 4-Bromofluorobenzene (PTD) 102 % 72-148

**Chloride, SM4500Cl-B**

mg/kg

Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	08/17/2017	ND	416	104	400	0.00	
<b>TPH 8015M</b>			<b>Analyzed By: MS</b>						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10	<10.0	10.0	08/14/2017	ND	212	106	200	1.84	
DRO >C10-C28	<10.0	10.0	08/14/2017	ND	210	105	200	0.298	
EXT DRO >C28-C36	<10.0	10.0	08/14/2017	ND					

Surrogate: 1-Chlorooctane 71.5 % 28.3-164

Surrogate: 1-Chlorodecane 71.9 %

34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500C-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager







# **CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

## **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

2 of 5

<b>Company Name:</b> BBC International, Inc. <b>Project Manager:</b> Cliff Brunson <b>Address:</b> P.O. Box 805 <b>City:</b> Hobbs <b>State:</b> NM <b>Zip:</b> 88241 <b>Phone #:</b> 575-397-6388 <b>Fax #:</b> 575-397-0397 <b>Project #:</b> <b>Project Owner:</b> Centurion <b>Project Name:</b> Crossroads AWC Pipeline <b>Project Location:</b> Lea County, NM <b>Sampler Name:</b> Roger Hernandez				<b>BILL TO</b> <b>P.O. #:</b> <b>Company:</b> Centurion <b>Attn:</b> Clayton McDonald <b>Address:</b> <b>City:</b> <b>State:</b> <b>Zip:</b> <b>Phone #:</b> <b>Fax #:</b>		<b>ANALYSIS REQUEST</b>															
<b>FOR LAB USE ONLY</b>				<b>MATRIX</b> GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER:		<b>PRESERV.</b> ACID/BASE: ICE / COOL OTHER:		<b>SAMPLING</b> DATE TIME		BTEX CI TPH EXT											
<b>Lab I.D.</b> H702104		<b>Sample I.D.</b>		<b>G/RAB OR (C)OMP.</b> # CONTAINERS		GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER:		ACID/BASE: ICE / COOL OTHER:		DATE TIME		BTEX CI TPH EXT									
11		SP2 @ 11' ✓		G		✓		✓		8/8/17 2:36 PM		✓									
12		SP2 @ 13' ✓		G		✓		✓		8/8/17 2:41 PM		✓									
13		SP3 @ 1' ✓		G		✓		✓		8/8/17 3:00 PM		✓									
14		SP3 @ 2' ✓		G		✓		✓		8/8/17 3:05 PM		✓									
15		SP3 @ 3' ✓		G		✓		✓		8/8/17 3:12 PM		✓									
16		SP4 @ 1' ✓		G		✓		✓		8/8/17 3:23 PM		✓									
17		SP4 @ 2' ✓		G		✓		✓		8/8/17 3:29 PM		✓									
18		SP4 @ 3' ✓		G		✓		✓		8/8/17 3:37 PM		✓									
19		SP5 @ 1' ✓		G		✓		✓		8/8/17 9:42 AM		✓									
20		SP5 @ 2' ✓		G		✓		✓		8/8/17 9:55 AM		✓									

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<b>Relinquished By:</b> Roger Hernandez Date: 8/9/17 Time: 5:30pm		<b>Received By:</b> Julie Doney, Jr. Date: 8/10/17 Time: 10:45		<b>Phone Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Phone #:</b> <b>Fax Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Fax #:</b> <b>REMARKS:</b>	
<b>Relinquished By:</b> Julie Doney, Jr. Date: 8/10/17 Time: 10:45		<b>Received By:</b> Jodi Henson Date: 8/10/17 Time: 10:45		<b>Sample Condition</b> Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <b>CHECKED BY:</b> (Initials)	

Delivered By: (Circle One)  
 Sampler - UPS - Bus - Other: # 75

1.75%  
 2.0% corrected +.25%

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



**CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

3 of 5

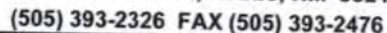
Company Name: BBC International, Inc.										<b>BILL TO</b>										<b>ANALYSIS REQUEST</b>											
Project Manager: Cliff Brunson										P.O. #:																					
Address: P.O. Box 805										Company: <i>Cardinal</i>																					
City: Hobbs State: NM Zip: 88241										Attn: <i>Clayton McDonald</i>																					
Phone #: 575-397-6388 Fax #: 575-397-0397										Address:																					
Project #: Project Owner: <i>Cardinal</i>										City:																					
Project Name: Crossroads AWC Pipeline										State: Zip:																					
Project Location: Lea County, NM										Phone #:																					
Sampler Name: Roger Hernandez										Fax #:																					
FOR LAB USE ONLY																															
Lab I.D.		Sample I.D.		G/RAB OR (COMP. # CONTAINERS)		MATRIX				PRESERV.		SAMPLING		DATE		TIME		BTEX		CI		TPH EXT									
H702104																															
21		SP5 @ 3' ✓		6										8/9/17		10:20 AM		✓		✓		✓									
22		SP6 @ 1' ✓		6										8/9/17		10:48 AM		✓		✓		✓									
23		SP6 @ 2' ✓		6										8/9/17		11:25 AM		✓		✓		✓									
24		SP6 @ 3' ✓		6										8/9/17		11:47 AM		✓		✓		✓									
25		SP7 @ 1' ✓		6										8/9/17		12:50 PM		✓		✓		✓									
26		SP7 @ 2' ✓		6										8/9/17		1:15 PM		✓		✓		✓									
27		SP7 @ 3' ✓		6										8/9/17		1:32 PM		✓		✓		✓									
28		SP8 @ 1' ✓		6										8/9/17		2:00 PM		✓		✓		✓									
29		SP8 @ 2' ✓		6										8/9/17		2:20 PM		✓		✓		✓									
30		SP8 @ 3' ✓		6										8/9/17		2:42 PM		✓		✓		✓									

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Relinquished By: <i>Roger Hernandez</i>		Date: <i>8/9/17</i>		Received By: <i>Julius Honey Jr.</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
Time: <i>5:30pm</i>						Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By: <i>Julius Honey Jr.</i>		Date: <i>8/10/17</i>		Received By: <i>Jodi Henson</i>		REMARKS:			
Time: <i>10:45</i>									
Delivered By: (Circle One)						Sample Condition		CHECKED BY:	
Sampler - UPS - Bus - Other: <i>#75</i>						Cool Intact		(Initials)	
						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		<i>1.75% corrected + .25%</i>	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

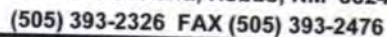




4085

2.0% corrected +.25%





5085

2.0% corrected + .25%



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PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

January 25, 2018

Cliff Brunson

BBC International, Inc.

P. O. Box 805

Hobbs, NM 88241

RE: CROSSROADS AWC PIPELINE

Enclosed are the results of analyses for samples received by the laboratory on 01/23/18 12:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Halocetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Celest D. Keene", written in a cursive style.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018

Reported: 01/25/2018

Project Name: CROSSROADS AWC PIPELINE

Project Number: NONE GIVEN

Project Location: CENTURION- LEA CO NM

Sampling Date:

01/17/2018

Sampling Type:

Soil

Sampling Condition:

Cool &amp; Intact

Sample Received By:

Tamara Oldaker

**Sample ID: SP 2 @ 18 (H800243-01)**
**BTEX 8021B** **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	QR-03
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (P1D)* *109 %* *72-148*
**Chloride, SM4500Cl-B** **mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>176</b>	16.0	01/24/2018	ND	416	104	400	3.92	
<b>TPH 8015M</b>	<b>mg/kg</b>		<b>Analyzed By: MS</b>						

GR0 C6-C10*	<10.0	10.0	01/24/2018	ND	208	104	200	6.61	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	171	85.7	200	6.70	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane* *104 %* *41-142*
*Surrogate: 1-Chlorodecane* *102 %* *37.6-147*

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/17/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 3 @ 5 (H800243-02)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

**Surrogate: 4-Bromofluorobenzene (PTD)**
**106 %**
**72-148**
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>176</b>	16.0	01/24/2018	ND	416	104	400	3.92	
<b>TPH 8015M</b>			<b>Analyzed By: MS</b>						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	208	104	200	6.61	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	171	85.7	200	6.70	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

**Surrogate: 1-Chlorooctane**
**77.7 %**
**41-142**
**Surrogate: 1-Chlorooctadecane**
**75.4 %**
**37.6-147**

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/17/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 3 @ 10 (H800243-03)**
**BTEX 8021B** **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)* *108 %* *72-148*
**Chloride, SM4500Cl-B** **mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>128</b>	16.0	01/24/2018	ND	416	104	400	3.92	
<b>TPH 8015M</b>			<b>Analyzed By: MS</b>						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10*	<10.0	10.0	01/24/2018	ND	208	104	200	6.61	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	171	85.7	200	6.70	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane* *92.0 %* *41-142*
*Surrogate: 1-Chlorodecane* *89.1 %* *37.6-147*

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

01/23/2018

Sampling Date:

01/17/2018

Reported:

01/25/2018

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Tamara Oldaker

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 4 @ 5 (H800243-04)**
**BTEX 80218**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*104 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>160</b>	16.0	01/24/2018	ND	416	104	400	3.92	
<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						

GR0 C6-C10*	<10.0	10.0	01/24/2018	ND	208	104	200	6.61	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	171	85.7	200	6.70	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane*
*79.6 %*
*41-142*
*Surrogate: 1-Chlorodecane*
*78.1 %*
*37.6-147*

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/17/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 4 @ 10 (H800243-05)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

106 %

72-148

**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>144</b>	16.0	01/24/2018	ND	416	104	400	3.92	
<b>TPH 8015M</b>			<b>Analyzed By: MS</b>						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	208	104	200	6.61	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	171	85.7	200	6.70	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane*

94.7 %

41-142

*Surrogate: 1-Chlorodecane*

92.5 %

37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/18/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 5 @ 4 (H800243-06)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

106 %

72-148

**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	01/24/2018	ND	416	104	400	3.92	
<b>TPH 8015M</b>			<b>Analyzed By: MS</b>						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	208	104	200	6.61	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	171	85.7	200	6.70	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane*

96.1 %

41-142

*Surrogate: 1-Chlorodecane*

95.6 %

37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:

01/23/2018

Sampling Date:

01/18/2018

Reported:

01/25/2018

Sampling Type:

Soil

Project Name:

CROSSROADS AWC PIPELINE

Sampling Condition:

Cool &amp; Intact

Project Number:

NONE GIVEN

Sample Received By:

Tamara Oldaker

Project Location:

CENTURION- LEA CO NM

**Sample ID: SP 5 @ 5 (H800243-07)**
**BTEX 80218**

mg/kg

Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

107 %

72-148

**Chloride, SM4500Cl-B**

mg/kg

Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	01/24/2018	ND	416	104	400	3.92	
<b>TPH 8015M</b>									

mg/kg

Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane*

88.3 %

41-142

*Surrogate: 1-Chlorodecane*

82.5 %

37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/18/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 5 @ 10 (H800243-08)**
**BTEX 8021B** **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)* *103 %* *72-148*
**Chloride, SM4500Cl-B** **mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	01/24/2018	ND	416	104	400	3.92	
<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						

GR0 C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane* *93.0 %* *41-142*
*Surrogate: 1-Chlorodecane* *85.5 %* *37.6-147*

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**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/18/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 5 @ 15 (H800243-09)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*
*107 %*
*72-148*
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	01/24/2018	ND	416	104	400	3.92	
<b>TPH 8015M</b>			<b>Analyzed By: MS</b>						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane*
*94.5 %*
*41-142*
*Surrogate: 1-Chlorodecane*
*87.2 %*
*37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/18/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 6 @ 4 (H800243--10)**
**BTEX 80218**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

107 % 72-148

**Analyzed By: AC**
**Chloride, SM4500Cl-B**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/24/2018	ND	416	104	400	3.92	

**TPH 8015M**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane*

90.2 %

41-142

*Surrogate: 1-Chlorooctadecane*

83.0 %

37.6-147

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/18/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 6 @ 5 (H800243-11)**
**BTEX 8021B**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

**Surrogate: 4-Bromofluorobenzene (PTD)**
**109 %**
**72-148**
**Chloride, SM4500Cl-B**
**mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/24/2018	ND	416	104	400	3.92	

**TPH 8015M**
**mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

**Surrogate: 1-Chlorooctane**
**85.5 %**
**41-142**
**Surrogate: 1-Chlorooctadecane**
**78.5 %**
**37.6-147**

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**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:	01/23/2018	Sampling Date:	01/18/2018
Reported:	01/25/2018	Sampling Type:	Soil
Project Name:	CROSSROADS AWC PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CENTURION- LEA CO NM		

**Sample ID: SP 6 @ 10 (H800243-12)**
**BTEX 8021B**      **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

**Surrogate: 4-Bromofluorobenzene (PTD)**      **103 %**      **72-148**
**Chloride, SM4500Cl-B**      **mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/24/2018	ND	416	104	400	0.00	

**TPH 8015M**      **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

**Surrogate: 1-Chlorooctane**      **83.8 %**      **41-142**
**Surrogate: 1-Chlorodecane**      **76.8 %**
**37.6-147**

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/18/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 6 @ 15 (H800243-13)**
**BTEX 80218** **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)* *107 %* *72-148*
**Chloride, SM4500Cl-B** **mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	01/24/2018	ND	416	104	400	0.00	
<b>TPH 8015M</b>			<b>Analyzed By: MS</b>						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane* *82.2 %* *41-142*
*Surrogate: 1-Chlorodecane* *75.2 %* *37.6-147*

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/19/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 9 @ 4 (H800243-14)**
**BTEX 80218** **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)* *109 %* *72-148*
**Chloride, SM4500Cl-B** **mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/24/2018	ND	416	104	400	0.00	

**TPH 8015M** **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane* *90.5 %* *41-142*
*Surrogate: 1-Chlorodecane* *83.7 %*
*37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/19/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 9 @ 5 (H800243-15)**
**BTEX 80218** **mg/kg** **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)* *102 %* *72-148*
**Chloride, SM4500Cl-B** **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	01/24/2018	ND	416	104	400	0.00	
<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						

GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane* *89.3 %* *41-142*
*Surrogate: 1-Chlorooctadecane* *82.0 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/19/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 9 @ 10 (H800243-16)**
**BTEX 80218**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

<b>Chloride, SM4500Cl-B</b>	<i>111 %</i>	<i>72-148</i>	<b>Analyzed By: AC</b>						
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Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/24/2018	ND	416	104	400	0.00	

<b>TPH 8015M</b>	<b>Analyzed By: MS</b>								
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane*

	85.8 %	41-142							
<i>Surrogate: 1-Chlorooctadecane</i>	78.8 %	37.6-147							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/19/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 9 @ 15 (H800243-17)**
**BTEX 80218** **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)* *105 %* *72-148*
**Chloride, SM4500Cl-B** **mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/24/2018	ND	416	104	400	0.00	

**TPH 8015M** **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GR0 C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane* *86.2 %* *41-142*
*Surrogate: 1-Chlorodecane* *79.5 %*
*37.6-147*

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:	01/23/2018	Sampling Date:	01/19/2018
Reported:	01/25/2018	Sampling Type:	Soil
Project Name:	CROSSROADS AWC PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CENTURION- LEA CO NM		

**Sample ID: SP 10 @ 4 (H800243-18)**
**BTEX 80218** **mg/kg** **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)* *105 %* *72-148*
**Chloride, SM4500Cl-B** **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	01/24/2018	ND	416	104	400	0.00	
<b>TPH 8015M</b>			<b>Analyzed By: MS</b>						

GR0 C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane* *93.3 %* *41-142*
*Surrogate: 1-Chlorooctadecane* *86.0 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:	01/23/2018	Sampling Date:	01/19/2018
Reported:	01/25/2018	Sampling Type:	Soil
Project Name:	CROSSROADS AWC PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CENTURION- LEA CO NM		

**Sample ID: SP 10 @ 5 (H800243-19)**

<b>BTEX 80218</b>	<b>mg/kg</b>	<b>Analyzed By: MS</b>
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Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

<i>Surrogate: 4-Bromofluorobenzene (PTD)</i>	<i>108 %</i>	<i>72-148</i>
<b>Chloride, SM4500Cl-B</b>	<b>mg/kg</b>	<b>Analyzed By: AC</b>

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	01/24/2018	ND	416	104	400	0.00	
<b>TPH 8015M</b>			<b>Analyzed By: MS</b>						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

<i>Surrogate: 1-Chlorooctane</i>	<i>85.0 %</i>	<i>41-142</i>
<i>Surrogate: 1-Chlorodecane</i>	<i>78.4 %</i>	<i>37.6-147</i>

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/19/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 10 @ 10 (H800243-20)**
**BTEX 80218**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.12	106	2.00	5.87	
Toluene*	<0.050	0.050	01/24/2018	ND	2.15	108	2.00	5.39	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.18	109	2.00	5.25	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.34	106	6.00	4.37	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)*

	108 %	72-148							
<b>Chloride, SM4500Cl-B</b>	<b>mg/kg</b>		<b>Analyzed By: AC</b>						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	01/24/2018	ND	416	104	400	0.00	
<b>TPH 8015M</b>	<b>mg/kg</b>		<b>Analyzed By: MS</b>						

GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane*

	83.6 %	41-142							
<i>Surrogate: 1-Chlorooctadecane</i>	76.7 %	37.6-147							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received:	01/23/2018	Sampling Date:	01/19/2018
Reported:	01/25/2018	Sampling Type:	Soil
Project Name:	CROSSROADS AWC PIPELINE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CENTURION- LEA CO NM		

**Sample ID: SP 10 @ 15 (H800243-21)**

BTEx 80218		mg/ kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value	QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.00	99.9	2.00		0.282	
Toluene*	<0.050	0.050	01/24/2018	ND	2.05	103	2.00		0.742	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.07	104	2.00		0.664	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.41	107	6.00		0.203	
Total BTEx	<0.300	0.300	01/24/2018	ND						

<i>Surrogate: 4-Bromofluorobenzene (PTD)</i>		112 %	72-148						
Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier

Chloride	<16.0	16.0	01/24/2018	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier

GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane*      85.5 %      41-142  
*Surrogate: 1-Chlorodecane*      77.7 %      37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/22/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 11 @ 4 (H800243-22)**

BTEx 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	01/24/2018	ND	2.00	99.9	2.00	0.282	
Toluene*	3.52	0.500	01/24/2018	ND	2.05	103	2.00	0.742	
Ethylbenzene*	4.82	0.500	01/24/2018	ND	2.07	104	2.00	0.664	
Total Xylenes*	23.3	1.50	01/24/2018	ND	6.41	107	6.00	0.203	
Total BTEx	31.6	3.00	01/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PTD)		127 %	72-148						
Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/24/2018	ND	416	104	400	0.00	
TPH 8015M		mg/kg	Analyzed By: MS						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	751	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	2950	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	311	10.0	01/24/2018	ND					

Surrogate: 1-Chlorooctane	180 %	41-142							
Surrogate: 1-Chlorodecane	196 %	37.6-147							

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/22/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 11 @ 5 (H800243-23)**

BTEx 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.00	99.9	2.00	0.282	
Toluene*	<0.050	0.050	01/24/2018	ND	2.05	103	2.00	0.742	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.07	104	2.00	0.664	
<b>Total Xylenes*</b>	<b>0.348</b>	0.150	01/24/2018	ND	6.41	107	6.00	0.203	
<b>Total BTEx</b>	<b>0.348</b>	0.300	01/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PLD Chloride, SM4500Cl-B	119 %	72-148	Analyzed By: AC
mg/kg			

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	01/24/2018	ND	416	104	400	0.00	
<b>TPH 8015M</b>	<b>mg/kg</b>	<b>Analyzed By: MS</b>							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>26.8</b>	10.0	01/24/2018	ND	203	101	200	0.384	
<b>DRO &gt;C10-C28*</b>	<b>360</b>	10.0	01/24/2018	ND	199	99.5	200	0.234	
<b>EXT DRO &gt;C28-C36</b>	<b>56.2</b>	10.0	01/24/2018	ND					

<i>Surrogate: 1-Chlorooctane</i>	99.7 %	41-142							
<i>Surrogate: 1-Chlorodecane</i>	101 %	37.6-147							

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/22/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 11 @ 6 (H800243-24)**
**BTEX 80218** **mg/kg** **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.00	99.9	2.00	0.282	
Toluene*	<0.050	0.050	01/24/2018	ND	2.05	103	2.00	0.742	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.07	104	2.00	0.664	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.41	107	6.00	0.203	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)* *112 %* *72-148*
**Chloride, SM4500Cl-B** **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/24/2018	ND	416	104	400	0.00	

**TPH 8015M** **mg/kg** **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane* *88.6 %* *41-142*
*Surrogate: 1-Chlorodecane* *81.8 %* *37.6-147*
**Cardinal Laboratories**

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/22/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 11 @ 11 (H800243-25)**

BTEx 8021B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.00	99.9	2.00	0.282	
Toluene*	<0.050	0.050	01/24/2018	ND	2.05	103	2.00	0.742	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.07	104	2.00	0.664	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.41	107	6.00	0.203	
Total BTEx	<0.300	0.300	01/24/2018	ND					

Surrogate: 4-Bromofluorobenzene (PLD Chloride, SM4500Cl-B	115 %	72-148	Analyzed By: AC
mg/kg			

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	01/24/2018	ND	416	104	400	0.00	
TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane* 78.5 % 41-142  
*Surrogate: 1-Chlorodecane* 72.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

BBC International, Inc.

Cliff Brunson

P.O. Box 805

Hobbs NM, 88241

Fax To: (575) 397-0397

Received: 01/23/2018  
 Reported: 01/25/2018  
 Project Name: CROSSROADS AWC PIPELINE  
 Project Number: NONE GIVEN  
 Project Location: CENTURION- LEA CO NM

Sampling Date: 01/22/2018  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP 11 @ 16 (H800243-26)**
**BTEX 80218** **mg/kg**
**Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/24/2018	ND	2.00	99.9	2.00	0.282	
Toluene*	<0.050	0.050	01/24/2018	ND	2.05	103	2.00	0.742	
Ethylbenzene*	<0.050	0.050	01/24/2018	ND	2.07	104	2.00	0.664	
Total Xylenes*	<0.150	0.150	01/24/2018	ND	6.41	107	6.00	0.203	
Total BTEX	<0.300	0.300	01/24/2018	ND					

*Surrogate: 4-Bromofluorobenzene (PTD)* *113 %* *72-148*
**Chloride, SM4500Cl-B** **mg/kg**
**Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	01/24/2018	ND	416	104	400	0.00	
<b>TPH 8015M</b>		<b>mg/kg</b>	<b>Analyzed By: MS</b>						

GR0 C6-C10*	<10.0	10.0	01/24/2018	ND	203	101	200	0.384	
DRO >C10-C28*	<10.0	10.0	01/24/2018	ND	199	99.5	200	0.234	
EXT DRO >C28-C36	<10.0	10.0	01/24/2018	ND					

*Surrogate: 1-Chlorooctane* *82.4 %* *41-142*
*Surrogate: 1-Chlorodecane* *76.1 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager





# CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240  
(505) 393-2326 FAX (505) 393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

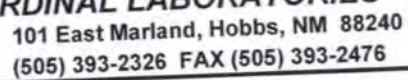
BILL TO										ANALYSIS REQUEST																									
Company Name: BBC International, Inc.										P.O. #:																									
Project Manager: Cliff Brunson										Company: BBC																									
Address: P.O. Box 805										Attn: Jennifer Gilkey																									
City: Hobbs										Address:																									
State: NM Zip: 88241										City:																									
Phone #: 575-397-6388										State: Zip:																									
Fax #: 575-397-0397										Phone #:																									
Project #:										Fax #:																									
Project Name: Crossroads AWC Pipeline																																			
Project Location:																																			
Sampler Name: Jeff Ornelas																																			
FOR LAB USE ONLY																																			
Lab I.D.		Sample I.D.		GRAB OR (COMP. #) CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER:		ACID/BASE:		ICE / COOL		OTHER:		DATE		TIME		CI		BTX		TPH		Ext	
H800243		1 SP 2 @ 18		5						✓								✓		✓		✓		1-17-18		10:45		✓		✓		✓			
		2 SP 3 @ 5		5						✓								✓		✓		✓				12:01		✓		✓		✓			
		3 SP 3 @ 10		5						✓								✓		✓		✓				12:55		✓		✓		✓			
		4 SP 4 @ 5		5						✓								✓		✓		✓				1:49		✓		✓		✓			
		5 SP 4 @ 10		5						✓								✓		✓		✓				1:03		✓		✓		✓			
		6 SP 5 @ 4		5						✓								✓		✓		✓				11:18-18		9:30		✓		✓		✓	
		7 SP 5 @ 5		5						✓								✓		✓		✓				10:01		✓		✓		✓			
		8 SP 5 @ 10		5						✓								✓		✓		✓				11:11		✓		✓		✓			
		9 SP 5 @ 15		5						✓								✓		✓		✓				12:54		✓		✓		✓			
		10 SP 6 @ 4		5						✓								✓		✓		✓				1:30		✓		✓		✓			

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Relinquished By: <i>Voss/Koneles</i>		Date: 1/22/18		Received By: <i>Julie Ramsey</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
Relinquished By: <i>Julie Ramsey</i>		Time: 5:00p		Received By: <i>Jamara Oldaker</i>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Delivered By: (Circle One) <i>3.5e</i>		Date: 1-23-18		Sample Condition		CHECKED BY: (Initials)		REMARKS: <i>Rush! added 1/23 TO</i>	
Sampler - UPS - Bus - Other: <i>Corrected 3.75e</i>		Time: 12:00		Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		10-#75		Has some head space.	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476





## Page 30 of 31

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Received By: \_\_\_\_\_ Phone Result: \_\_\_\_\_

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476





101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Mainway (505) 393-2326 FAX (505) 393-2476										<b>BILL TO</b>										<b>ANALYSIS REQUEST</b>																													
Company Name: BBC International, Inc.										P.O. #:										Empty space for analysis request details																													
Project Manager: Cliff Brunson										Company: <i>BBC</i>																																							
Address: P.O. Box 805										Attn: <i>Gilkey</i>																																							
City: Hobbs State: NM Zip: 88241										Address:																																							
Phone #: 575-397-6388 Fax #: 575-397-0397										City:																																							
Project #:										State: Zip:																																							
Project Name: <i>Crossroads AWC Pipeline</i>										Project Location:										Phone #:																													
Project Owner: <i>Centurion</i>										Fax #:																																							
Sampler Name: <i>Jeff Ornelas</i>																																																	
FOR LAB USE ONLY																																																	
Lab I.D.										Sample I.D.																																							
										MATRIX										PRESERV										SAMPLING																			
										GROUNDWATER										ACID/BASE:										DATE										TIME									
										WASTEWATER										ICE / COOL										1-19-18										3:30									
										SOIL										OTHER :										1-22-18										4:11									
										OIL										OTHER :										↓										4:33									
										SLUDGE										OTHER :										↓										4:49									
										OTHER :										OTHER :										↓										10:33									
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**PLEASE NOTE:** Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <i>Vassilios</i>		Date: <i>1/22/18</i>	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Time: <i>5:00pm</i>			<i>Heather Boney for</i>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:		Date: <i>1/23/18</i>	Received By:	REMARKS:	
Time: <i>12:00</i>			<i>Samara Aldred</i>	<i>Rush! Add'l 1/23/18 to-</i>	
Delivered By: (Circle One) <i>3.5E</i>		Sample Condition	CHECKED BY:		
Sampler - UPS - Bus - Other: <i>Corrected 3.75E</i>		Cool Intact	(Initials)		
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>TO #5</i>	<i>Has some headspace.</i>	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



## 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

HOBBS COO

Form C-141  
Revised August 8, 2011

Oil Conservation Division

1220 South St. Francis Dr.

Santa Fe, NM 87505

JUL 1 10 58 AM

Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

RECEIVED

## Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Centurion Pipeline LP	Contact	CLAYTON MCDONALD
Address	P O Box 51790 Midland, TX 79710	Telephone No.	432-699-4338
Facility Name	Crossroads - Texas State Line	Facility Description	Crossroads-AWC 8" ML
Surface Owner	Jeff & Jenna Decker	Mineral Owner	API No.

## LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	28	12S	38E					LEA

Latitude 33.25647 Longitude -103.11006

## NATURE OF RELEASE

Type of Release	Sweet Crude Oil	Volume of Release	25 BARRELS	Volume Recovered	2 BARRELS
Source of Release	INTERNAL CORROSION	Date and Hour of Occurrence:	7/1/17 11:50 AM	Date and Hour of Discovery:	Jul 1, 2017 12:00 AM
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Olivia Yu email		
By Whom?	CLAYTON MCDONALD	Date and Hour	7/2/17 12:38 PM		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

No watercourse impacted

RECEIVED

By Olivia Yu at 2:10 pm, Jul 14, 2017

Describe Cause of Problem and Remedial Action Taken.

Internal Corrosion caused leak. Pipe replacement in progress.

Describe Area Affected and Cleanup Action Taken.

Pasture was area affected. Clean-up will follow maintenance.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCOD 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 NMOCOD 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, NMOCOD 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:		OIL CONSERVATION DIVISION	
Printed Name:	CLAYTON MCDONALD	Approved by Environmental Specialist:	
Title:	ENVIRONMENTAL SPECIALIST	Approval Date:	7/14/2017
E-mail Address:	Clayton_McDonald@oxy.com	Conditions of Approval:	see attached directive
Date:	07/06/2017	Phone:	432-699-4338
		Attached:	✓

\* Attach Additional Sheets If Necessary

1RP-4756

fOY1719551546

nOY1719551654

pOY1719551648





**Centurion Pipeline L.P.**

P.O. Box 51790 Midland, Texas 79710  
Phone (432) 686-1482 Fax (432) 686-1425

**HOBBS OCC**

**JUL 10 2017**

July 06, 2017

**RECEIVED**

New Mexico Oil Conservation Division Dist 1  
1625 N French Dr.  
Hobbs, New Mexico 88240

Leak located at referenced Legal Description:  
Section: 28, Township: 12S, Range: 38E  
LEA County, NEW MEXICO  
Centurion Leak Number CP55139857

Attached for further handling, is the NMC141 pertaining to the leak that occurred on 7/1/17 in, Section: 28, Township: 12S, Range: 38E. Any correspondence regarding this leak needs to be directed to Centurion Pipeline L.P. ; P.O. Box 51790 ; Midland, TX 79710 ; Phone (432) 686-1482 or Fax (432) 686-1425.

If further information is required, please advise.

Sincerely,

CLAYTON MCDONALD  
ENVIRONMENTAL SPECIALIST  
432-699-4338

Attachments

Operator/Responsible Party,

The OCD has received the form C-141 you provided on \_7/10/2017\_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number \_1RP-4756\_ 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 \_8/14/2017\_. 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<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), 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<sub>6</sub> thru C<sub>36</sub>), 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