



DELINEATION WORKPLAN

COG – PYGMY 27 STATE #3H (Leak Date: 9/23/17)

**RP # 1RP-4824
API # 30-025-42068**

This delineation workplan and remediation proposal addresses the release associated with RP # 1RP-4824.

The following information includes:

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

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

COG will excavate the spill area as depicted on the following site diagram. The leak area near SP1 – SP7, and Sp11 (pink shade on diagram) will be excavated to a depth of 6 inches. The leak area near SP8 – SP10 (yellow shade on diagram) will be excavated to a depth of 1.5 feet. Confirmation samples will be collected as depicted on the diagram to confirm remediation limits have been achieved.

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

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

APPROVED

By Olivia Yu at 11:08 am, Dec 20, 2017

NMOCD approves of the delineation completed and proposed remediation for 1RP-4824.

COG, Pygmy 27 State #3H

Leak date: 09/23/2017

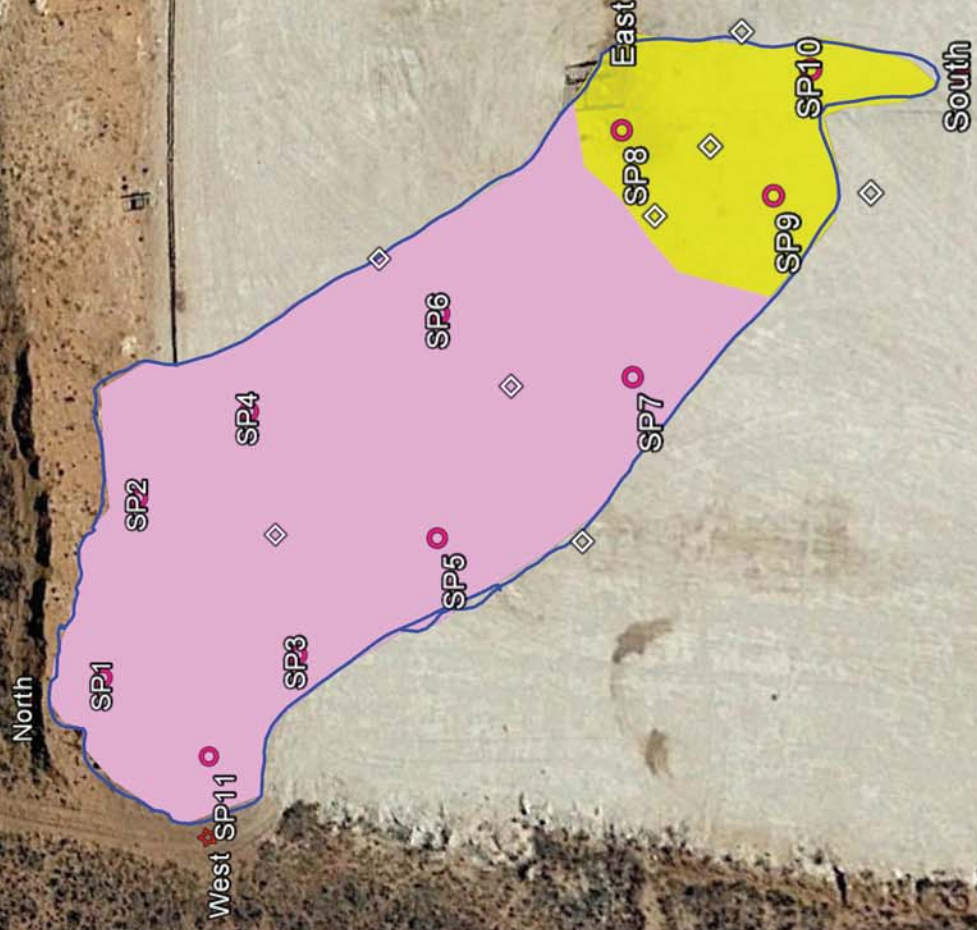
Lea County, NM

API# 30-025-42068

1RP-4824

Legend

- 6 Inch Excavation
- Cardinal sample points
- Confirmation sample points
- Leak Area (9/23/17)
- Sample points
- 1.5 ft Excavation



COG, Pygmy 27 State #003H

Sample points, hand auger

SP1, N 32.45699 W-103.55875

SP2, N 32.45696 W-103.55857

SP3, N 32.45681 W-103.55871

SP4, N 32.45686 W-103.55849

SP5, N 32.45669 W-103.55859

SP6, N 32.45669 W-103.55839

SP7, N 32.45654 W-103.55845

SP8, N 32.45654 W-103.55824

SP9, N 32.45643 W-103.55829

SP10, N 32.45640 W-103.55819

SP11, N 32.45690 W-103.55882

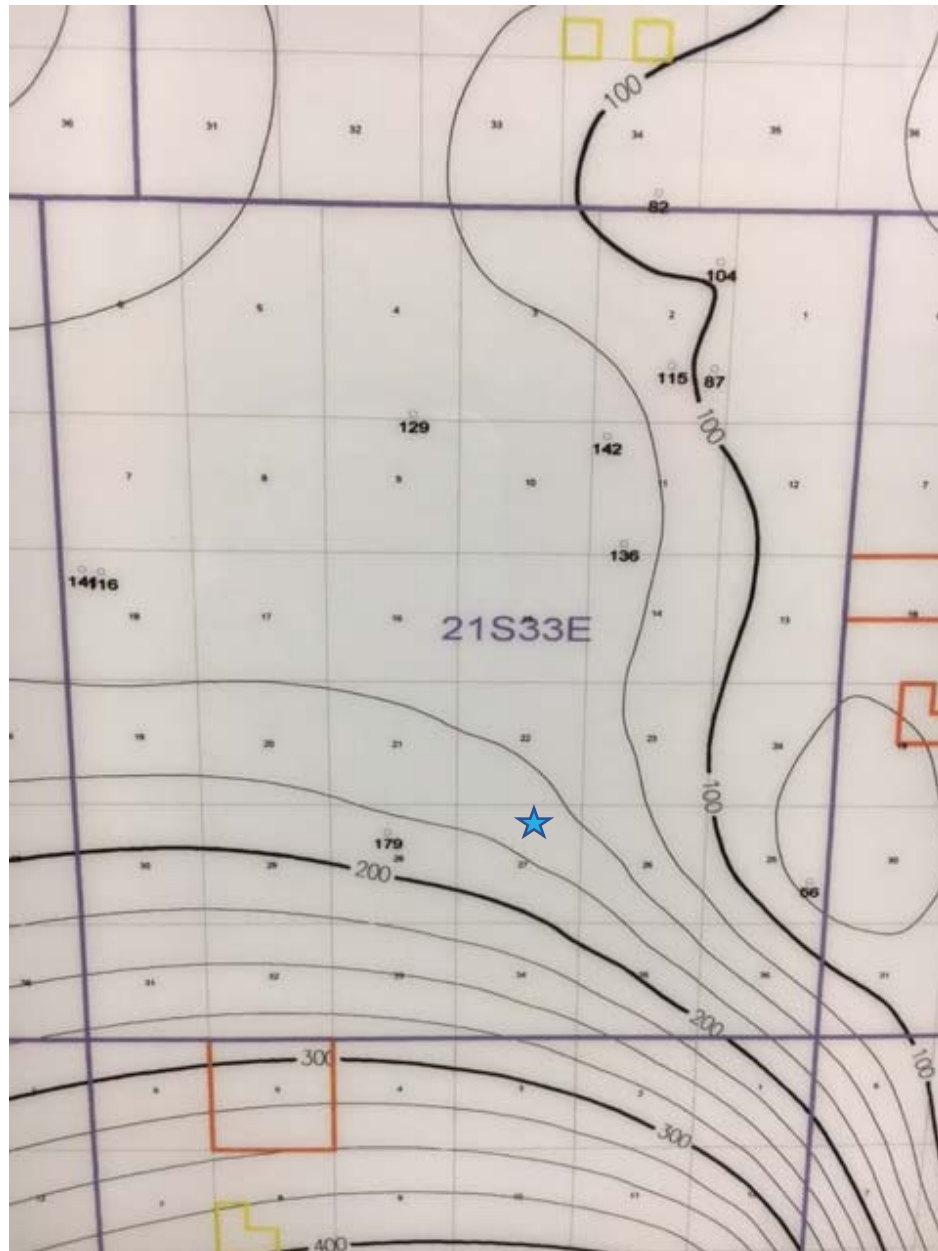
NORTH, N 32.45707 W-103.55878

SOUTH, N 32.45630 W-103.55820

EAST, N 32.45654 W-103.55815

WEST, N 32.45690 W-103.55889

COG, Pygmy 27 State #003H
U/L B, Section 27, T21S, R33E
Groundwater: 150'-175'





New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 01349 POD1		CP	LE	2	3	1	27	21S	33E	635304	3591576	<input type="text"/>	317	1188	572 616
CP 01357 POD1		CP	LE	4	3	1	27	21S	33E	634782	3591347	<input type="text"/>	868	1286	578 708
CP 01355 POD1		CP	LE	2	1	3	27	21S	33E	634773	3591061	<input type="text"/>	1056	1192	582 610
CP 01411 POD2		CP	LE		1	2	34	21S	33E	635534	3590380	<input type="text"/>	1433	1125	
CP 01411 POD1		CP	LE	2	2	34	21S	33E	635968	3590386	<input type="text"/>	1498	1149		

Average Depth to Water: **577 feet**

Minimum Depth: **572 feet**

Maximum Depth: **582 feet**

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 635515

Northing (Y): 3591814

Radius: 1700

The data is furnished by the NMOSE/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.

8/2/17 9:13 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Public Land Survey System (PLSS)

☐

Q64:

Q16:

NW

Q4:

NE

Sec:

27

Tws:

21S

Rng:

33E

State Plane Coordinate System - NAD27

☐

X:

0

ft

Y:

0

ft

Zone:

State Plane Coordinate System - NAD83

☐

X:

0

ft

Y:

0

ft

Zone:

Degrees/Minutes/Seconds

☐

Longitude (X):

Degrees:

0

°

Minutes:

0

'

Seconds:

0

"

Latitude (Y):

Degrees:

0

°

Minutes:

0

'

Seconds:

0

"

UTM - NAD27

☐

Easting (X):

0

mtrs

Northing (Y):

0

mtrs

Zone:

SUBMIT

All Conversion Results are displayed as NAD 1983 UTM Zone 13

Easting (X):

635515.0

mtrs

Northing (Y):

3591814.0

mtrs

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

http://nmwrrs.ose.state.nm.us/nmwrrs/ConvertUTMDispatcher[8/2/2017 9:14:54 AM]

Analyte	Method	SP1 @ SURFACE		SP1 @ 1'		SP1 @ 6'		SP1 @ 11'	
		Sample ID	Date	mg/kg	10/16/17	mg/kg	10/16/17	mg/kg	10/16/17
Benzene	BTEX 8021B			mg/kg	<0.050	n/a	n/a	mg/kg	n/a
Toluene	BTEX 8021B			0.124	<0.050	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B			<0.050	<0.050	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B			<0.150	<0.150	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B			<0.300	<0.300	n/a	n/a	n/a	n/a
Chloride	SM4500C1-B			<16.0	48	32	32	32	32
GRO	TPH 8015M			<10.0	<10.0	n/a	n/a	n/a	n/a
DRO	TPH 8015M			480	<10.0	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M			230	<10.0	n/a	n/a	n/a	n/a

Analyte	Method	SP2 @ SURFACE		SP2 @ 1'		SP2 @ 6'		SP2 @ 11'	
		Sample ID	Date	mg/kg	10/16/17	mg/kg	10/16/17	mg/kg	10/16/17
Benzene	BTEX 8021B			mg/kg	<0.050	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B			0.064	<0.050	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B			<0.050	<0.050	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B			<0.150	<0.150	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B			<0.300	<0.300	n/a	n/a	n/a	n/a
Chloride	SM4500C1-B			<16.0	<16.0	<16.0	<16.0	<16.0	<16.0
GRO	TPH 8015M			<10.0	<10.0	n/a	n/a	n/a	n/a
DRO	TPH 8015M			465	<10.0	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M			225	<10.0	n/a	n/a	n/a	n/a

Analyte	Method	SP3 @ SURFACE		SP3 @ 1'		SP3 @ 6'		SP3 @ 11'	
		Sample ID	Date	mg/kg	10/17/16	mg/kg	10/17/16	mg/kg	10/17/16
Benzene	BTEX 8021B			mg/kg	<0.050	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B			0.195	<0.050	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B			<0.050	<0.050	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B			<0.150	<0.150	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B			<0.300	<0.300	n/a	n/a	n/a	n/a
Chloride	SM4500C1-B			368	<16.0	<16.0	<16.0	32	32
GRO	TPH 8015M			<10.0	<10.0	n/a	n/a	n/a	n/a
DRO	TPH 8015M			2110	<10.0	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M			796	<10.0	n/a	n/a	n/a	n/a

Analyte	Method	SP4 @ SURFACE		SP4 @ 1'		SP4 @ 6'		SP4 @ 11'	
		Sample ID	Date	mg/kg	10/17/16	mg/kg	10/17/16	mg/kg	10/17/16
Benzene	BTEX 8021B			mg/kg	<0.050	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B			0.109	<0.050	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B			<0.050	<0.050	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B			<0.150	<0.150	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B			<0.300	<0.300	n/a	n/a	n/a	n/a
Chloride	SM4500C1-B			320	<16.0	<16.0	<16.0	16	16
GRO	TPH 8015M			<10.0	<10.0	n/a	n/a	n/a	n/a
DRO	TPH 8015M			2300	<10.0	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M			900	<10.0	n/a	n/a	n/a	n/a

Analyte	Method	SP5 @ SURFACE		SP5 @ 1'		SP5 @ 6'		SP5 @ 11'	
		Sample ID	Date	mg/kg	10/17/16	mg/kg	10/17/16	mg/kg	10/17/16
Benzene	BTEX 8021B			mg/kg	<0.050	n/a	n/a	mg/kg	n/a
Toluene	BTEX 8021B			0.113	<0.050	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B			<0.050	<0.050	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B			<0.150	<0.150	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B			<0.300	<0.300	n/a	n/a	n/a	n/a
Chloride	SM4500C1-B			384	<16.0	<16.0	<16.0	<16.0	<16.0
GRO	TPH 8015M			<10.0	<10.0	n/a	n/a	n/a	n/a
DRO	TPH 8015M			9070	<10.0	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M			2660	<10.0	n/a	n/a	n/a	n/a

Analyte	Method	SP6 @ SURFACE		SP6 @ 1'		SP6 @ 6'		SP6 @ 11'	
		Sample ID	Date	mg/kg	10/17/16	mg/kg	10/17/16	mg/kg	10/17/16
Benzene	BTEX 8021B			mg/kg	0.058	<0.050	n/a	n/a	n/a
Toluene	BTEX 8021B			0.263	<0.050	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B			0.108	<0.050	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B			1	<0.150	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B			1.43	<0.300	n/a	n/a	n/a	n/a
Chloride	SM4500C1-B			336	<16.0	<16.0	<16.0	<16.0	<16.0
GRO	TPH 8015M			<10.0	<10.0	n/a	n/a	n/a	n/a
DRO	TPH 8015M			9210	<10.0	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M			2780	<10.0	n/a	n/a	n/a	n/a

Analyte	Method	SP7 @ SURFACE		SP7 @ 1'		SP7 @ 6'		SP7 @ 11'	
		Sample ID	Date	mg/kg	10/17/16	mg/kg	10/17/16	mg/kg	10/17/16
Benzene	BTEX 8021B			mg/kg	<0.050	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B			0.051	<0.050	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B			<0.050	<0.050	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B			<0.150	<0.150	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B			<0.300	<0.300	n/a	n/a	n/a	n/a
Chloride	SM4500C1-B			352	<16.0	<16.0	<16.0	<16.0	<16.0
GRO	TPH 8015M			<10.0	<10.0	n/a	n/a	n/a	n/a
DRO	TPH 8015M			9140	<10.0	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M			2660	<10.0	n/a	n/a	n/a	n/a

Analyte	Method	SP8 @ SURFACE		SP8 @ 1'		SP8 @ 2'		SP8 @ 7'		SP8 @ 12'	
		Sample ID	Date	mg/kg	10/17/16	mg/kg	10/17/16	mg/kg	10/17/16	mg/kg	10/17/16
Benzene	BTEX 8021B			mg/kg	<0.200	<0.050	n/a	n/a	n/a	n/a	n/a
Toluene	BTEX 8021B			0.627	<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B			2.07	<0.050	n/a	n/a	n/a	n/a	n/a	n/a
Total Xylenes	BTEX 8021B			8.65	<0.150	n/a	n/a	n/a	n/a	n/a	n/a
Total BTEX	BTEX 8021B			11.3	<0.300	n/a	n/a	n/a	n/a	n/a	n/a
Chloride	SM4500C1-B			560	<16.0	80	96	320	320	320	320
GRO	TPH 8015M			431	<10.0	n/a	n/a	n/a	n/a	n/a	n/a
DRO	TPH 8015M			20000	<10.0	n/a	n/a	n/a	n/a	n/a	n/a
EXT DRO	TPH 8015M			5140	<10.0	n/a	n/a	n/a	n/a	n/a	n/a

		Sample ID	SP9 @ SURFACE	SP9 @ 1'	SP9 @ 2'	SP9 @ 7'	SP9 @ 12'
Analyte	Method	Date	10/17/16 mg/kg	10/17/16 mg/kg	10/17/16 mg/kg	10/17/16 mg/kg	10/17/16 mg/kg
Benzene	BTEX 8021B		<0.200	<0.050	n/a	n/a	n/a
Toluene	BTEX 8021B		0.57	<0.050	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		2.08	<0.050	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		8.82	<0.150	n/a	n/a	n/a
Total BTEX	BTEX 8021B		11.5	<0.300	n/a	n/a	n/a
Chloride	SM4500C1-B		592	2040	96	80	<16.0
GRO	TPH 8015M		411	<10.0	n/a	n/a	n/a
DRO	TPH 8015M		17100	67.2	n/a	n/a	n/a
EXT DRO	TPH 8015M		3900	50.7	n/a	n/a	n/a

		Sample ID	SP10 @ SURFACE	SP10 @ 1'	SP10 @ 2'	SP10 @ 7'	SP10 @ 12'
Analyte	Method	Date	10/17/16 mg/kg	10/17/16 mg/kg	10/17/16 mg/kg	10/17/16 mg/kg	10/17/16 mg/kg
Benzene	BTEX 8021B		<0.200	<0.050	n/a	n/a	n/a
Toluene	BTEX 8021B		0.684	<0.050	n/a	n/a	n/a
Ethylbenzene	BTEX 8021B		2.47	<0.050	n/a	n/a	n/a
Total Xylenes	BTEX 8021B		10.4	<0.150	n/a	n/a	n/a
Total BTEX	BTEX 8021B		13.6	<0.300	n/a	n/a	n/a
Chloride	SM4500C1-B		512	1190	16	16	16
GRO	TPH 8015M		476	<10.0	n/a	n/a	n/a
DRO	TPH 8015M		18100	24.1	n/a	n/a	n/a
EXT DRO	TPH 8015M		4480	14.2	n/a	n/a	n/a

		Sample ID	SP11 @ SURFACE	SP11 @ 1'	SP11 @ 6'	SP11 @ 11'
Analyte	Method	Date	10/17/16 mg/kg	10/17/16 mg/kg	10/17/16 mg/kg	10/17/16 mg/kg
Benzene	BTEX 8021B		0.059	<0.050	n/a	n/a
Toluene	BTEX 8021B		0.258	<0.050	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Total Xylenes	BTEX 8021B		0.217	<0.150	n/a	n/a
Total BTEX	BTEX 8021B		0.534	<0.300	n/a	n/a
Chloride	SM4500C1-B		352	80	48	48
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a
DRO	TPH 8015M		1650	<10.0	n/a	n/a
EXT DRO	TPH 8015M		600	18.5	n/a	n/a

		Sample ID	NORTH @ SURFACE	EAST @ SURFACE	WEST @ SURFACE	SOUTH @ SURFACE
Analyte	Method	Date	10/17/16 mg/kg	10/17/16 mg/kg	10/17/16 mg/kg	10/17/16 mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300
Chloride	SM4500C1-B		16	16	<16.0	<16.0
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

October 27, 2017

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: PYGMY 27 STATE #3H

Enclosed are the results of analyses for samples received by the laboratory on 10/20/17 15:40.

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.

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

Method EPA 552.2	Haloacetic 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,



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: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ SURFACE (H702885-01)

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	10/24/2017	ND	2.01	101	2.00	2.59	
Toluene*	0.124	0.050	10/24/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	<0.050	0.050	10/24/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	<0.150	0.150	10/24/2017	ND	6.00	99.9	6.00	3.56	
Total BTEX	<0.300	0.300	10/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 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	10/25/2017	ND	432	108	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	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	480	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	230	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 83.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 104 % 34.7-157

Cardinal Laboratories

*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 1 (H702885-02)

BTX 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	10/24/2017	ND	2.01	101	2.00	2.59		
Toluene*	<0.050	0.050	10/24/2017	ND	2.02	101	2.00	3.05		
Ethylbenzene*	<0.050	0.050	10/24/2017	ND	2.01	101	2.00	2.84		
Total Xylenes*	<0.150	0.150	10/24/2017	ND	6.00	99.9	6.00	3.56		
Total BTX	<0.300	0.300	10/24/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 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	48.0	16.0	10/25/2017	ND	432	108	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	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	<10.0	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	<10.0	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 81.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 93.1 % 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: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 6 (H702885-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 1 @ 11 (H702885-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/25/2017	ND	432	108	400	0.00		

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ SURFACE (H702885-05)

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	10/24/2017	ND	2.01	101	2.00	2.59	
Toluene*	0.064	0.050	10/24/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	<0.050	0.050	10/24/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	<0.150	0.150	10/24/2017	ND	6.00	99.9	6.00	3.56	
Total BTEx	<0.300	0.300	10/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 72-148

Chloride, SM4500CI-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	10/25/2017	ND	432	108	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	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	465	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	225	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 91.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 103 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 1 (H702885-06)

BTX 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	10/24/2017	ND	2.01	101	2.00	2.59		
Toluene*	<0.050	0.050	10/24/2017	ND	2.02	101	2.00	3.05		
Ethylbenzene*	<0.050	0.050	10/24/2017	ND	2.01	101	2.00	2.84		
Total Xylenes*	<0.150	0.150	10/24/2017	ND	6.00	99.9	6.00	3.56		
Total BTX	<0.300	0.300	10/24/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 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	10/25/2017	ND	432	108	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	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	<10.0	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	<10.0	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 88.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 95.5 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/16/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 6 (H702885-07)

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	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 2 @ 11 (H702885-08)

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	10/25/2017	ND	432	108	400	0.00	

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ SURFACE (H702885-09)

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	10/24/2017	ND	2.01	101	2.00	2.59	
Toluene*	0.195	0.050	10/24/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	<0.050	0.050	10/24/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	<0.150	0.150	10/24/2017	ND	6.00	99.9	6.00	3.56	
Total BTEx	<0.300	0.300	10/24/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	10/25/2017	ND	432	108	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	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	2110	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	796	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 86.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 136 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 1 (H702885-10)

BTX 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	10/25/2017	ND	2.01	101	2.00	2.59	
Toluene*	<0.050	0.050	10/25/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	6.00	99.9	6.00	3.56	
Total BTX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 72-148

Chloride, SM4500CI-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	10/25/2017	ND	432	108	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	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	<10.0	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	<10.0	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 88.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 96.4 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 6 (H702885-11)

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	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 3 @ 11 (H702885-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/25/2017	ND	432	108	400	0.00	

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 4 @ SURFACE (H702885-13)

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	10/25/2017	ND	2.01	101	2.00	2.59	
Toluene*	0.109	0.050	10/25/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	6.00	99.9	6.00	3.56	
Total BTEX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 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	320	16.0	10/25/2017	ND	432	108	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	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	2300	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	900	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 85.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 143 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 4 @ 1 (H702885-14)

BTX 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	10/25/2017	ND	2.01	101	2.00	2.59	
Toluene*	<0.050	0.050	10/25/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	6.00	99.9	6.00	3.56	
Total BTX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	10/25/2017	ND	432	108	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	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	<10.0	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	<10.0	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 85.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 94.9 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 4 @ 6 (H702885-15)

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	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 4 @ 11 (H702885-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/25/2017	ND	432	108	400	0.00	

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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: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 5 @ SURFACE (H702885-17)

BTX 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	10/25/2017	ND	2.01	101	2.00	2.59	
Toluene*	0.113	0.050	10/25/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	6.00	99.9	6.00	3.56	
Total BTX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	10/25/2017	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	9070	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	2660	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 90.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 340 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 5 @ 1 (H702885-18)

BTX 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	10/25/2017	ND	2.01	101	2.00	2.59	
Toluene*	<0.050	0.050	10/25/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	6.00	99.9	6.00	3.56	
Total BTX	<0.300	0.300	10/25/2017	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/25/2017	ND	432	108	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	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	<10.0	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	<10.0	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 92.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 101 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 5 @ 6 (H702885-19)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 5 @ 11 (H702885-20)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/25/2017	ND	432	108	400	0.00		

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 6 @ SURFACE (H702885-21)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.058	0.050	10/25/2017	ND	2.01	101	2.00	2.59	
Toluene*	0.263	0.050	10/25/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	0.108	0.050	10/25/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	1.00	0.150	10/25/2017	ND	6.00	99.9	6.00	3.56	
Total BTEX	1.43	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	336	16.0	10/25/2017	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	9210	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	2780	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 87.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 362 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 6 @ 1 (H702885-22)

BTX 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	10/25/2017	ND	2.01	101	2.00	2.59	
Toluene*	<0.050	0.050	10/25/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	6.00	99.9	6.00	3.56	
Total BTX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/25/2017	ND	432	108	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	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	<10.0	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	<10.0	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 86.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 90.5 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 6 @ 6 (H702885-23)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 6 @ 11 (H702885-24)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/25/2017	ND	432	108	400	0.00		

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 7 @ SURFACE (H702885-25)

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	10/25/2017	ND	2.01	101	2.00	2.59	
Toluene*	0.051	0.050	10/25/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	6.00	99.9	6.00	3.56	
Total BTEx	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	10/25/2017	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	9140	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	2660	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 88.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 315 % 34.7-157

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P.O. Box 805
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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 7 @ 1 (H702885-26)

BTX 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	10/25/2017	ND	2.01	101	2.00	2.59	
Toluene*	<0.050	0.050	10/25/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	6.00	99.9	6.00	3.56	
Total BTX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/25/2017	ND	432	108	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	10/23/2017	ND	190	95.0	200	1.54	
DRO >C10-C28	<10.0	10.0	10/23/2017	ND	206	103	200	2.01	
EXT DRO >C28-C36	<10.0	10.0	10/23/2017	ND					

Surrogate: 1-Chlorooctane 81.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 90.8 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 7 @ 6 (H702885-27)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 7 @ 11 (H702885-28)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/25/2017	ND	432	108	400	0.00		

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 8 @ SURFACE (H702885-29)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/25/2017	ND	2.01	101	2.00	2.59	
Toluene*	0.627	0.200	10/25/2017	ND	2.02	101	2.00	3.05	
Ethylbenzene*	2.07	0.200	10/25/2017	ND	2.01	101	2.00	2.84	
Total Xylenes*	8.65	0.600	10/25/2017	ND	6.00	99.9	6.00	3.56	
Total BTX	11.3	1.20	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 147 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	10/25/2017	ND	432	108	400	0.00	

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	431	100	10/23/2017	ND	190	95.0	200	1.54		
DRO >C10-C28	20000	100	10/23/2017	ND	206	103	200	2.01		
EXT DRO >C28-C36	5140	100	10/23/2017	ND						

Surrogate: 1-Chlorooctane 170 % 28.3-164

Surrogate: 1-Chlorooctadecane 736 % 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: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 8 @ 1 (H702885-30)

BTX 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	10/25/2017	ND	1.83	91.3	2.00	1.51	
Toluene*	<0.050	0.050	10/25/2017	ND	1.84	91.9	2.00	2.45	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	1.81	90.7	2.00	1.94	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	5.42	90.3	6.00	1.92	
Total BTX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1540	16.0	10/25/2017	ND	432	108	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	10/24/2017	ND	174	86.8	200	4.40	
DRO >C10-C28	180	10.0	10/24/2017	ND	185	92.6	200	5.21	
EXT DRO >C28-C36	152	10.0	10/24/2017	ND					

Surrogate: 1-Chlorooctane 76.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 83.3 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 8 @ 2 (H702885-31)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 8 @ 7 (H702885-32)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 8 @ 12 (H702885-33)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	10/25/2017	ND	432	108	400	0.00	

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 9 @ SURFACE (H702885-34)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/25/2017	ND	1.83	91.3	2.00	1.51	
Toluene*	0.570	0.200	10/25/2017	ND	1.84	91.9	2.00	2.45	
Ethylbenzene*	2.08	0.200	10/25/2017	ND	1.81	90.7	2.00	1.94	
Total Xylenes*	8.82	0.600	10/25/2017	ND	5.42	90.3	6.00	1.92	
Total BTX	11.5	1.20	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 145 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	592	16.0	10/25/2017	ND	432	108	400	0.00	
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	411	100	10/25/2017	ND	174	86.8	200	4.40	
DRO >C10-C28	17100	100	10/25/2017	ND	185	92.6	200	5.21	
EXT DRO >C28-C36	3900	100	10/25/2017	ND					

Surrogate: 1-Chlorooctane 160 % 28.3-164

Surrogate: 1-Chlorooctadecane 576 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 9 @ 1 (H702885-35)

BTX 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	10/25/2017	ND	1.83	91.3	2.00	1.51		
Toluene*	<0.050	0.050	10/25/2017	ND	1.84	91.9	2.00	2.45		
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	1.81	90.7	2.00	1.94		
Total Xylenes*	<0.150	0.150	10/25/2017	ND	5.42	90.3	6.00	1.92		
Total BTX	<0.300	0.300	10/25/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2040	16.0	10/25/2017	ND	432	108	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	10/24/2017	ND	174	86.8	200	4.40	
DRO >C10-C28	67.2	10.0	10/24/2017	ND	185	92.6	200	5.21	
EXT DRO >C28-C36	50.7	10.0	10/24/2017	ND					

Surrogate: 1-Chlorooctane 72.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 81.0 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 9 @ 2 (H702885-36)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 9 @ 7 (H702885-37)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 9 @ 12 (H702885-38)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/25/2017	ND	432	108	400	0.00		

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 10 @ SURFACE (H702885-39)

BTX 8021B		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/25/2017	ND	1.83	91.3	2.00	1.51	
Toluene*	0.684	0.200	10/25/2017	ND	1.84	91.9	2.00	2.45	
Ethylbenzene*	2.47	0.200	10/25/2017	ND	1.81	90.7	2.00	1.94	
Total Xylenes*	10.4	0.600	10/25/2017	ND	5.42	90.3	6.00	1.92	
Total BTX	13.6	1.20	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 149 % 72-148

Chloride, SM4500CI-B		mg/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	10/25/2017	ND	432	108	400	0.00	

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	476	100	10/25/2017	ND	174	86.8	200	4.40	
DRO >C10-C28	18100	100	10/25/2017	ND	185	92.6	200	5.21	
EXT DRO >C28-C36	4480	100	10/25/2017	ND					

Surrogate: 1-Chlorooctane 182 % 28.3-164

Surrogate: 1-Chlorooctadecane 621 % 34.7-157

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 10 @ 1 (H702885-40)

BTX 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	10/25/2017	ND	1.83	91.3	2.00	1.51	
Toluene*	<0.050	0.050	10/25/2017	ND	1.84	91.9	2.00	2.45	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	1.81	90.7	2.00	1.94	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	5.42	90.3	6.00	1.92	
Total BTX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1190	16.0	10/25/2017	ND	432	108	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	10/24/2017	ND	174	86.8	200	4.40	
DRO >C10-C28	24.1	10.0	10/24/2017	ND	185	92.6	200	5.21	
EXT DRO >C28-C36	14.2	10.0	10/24/2017	ND					

Surrogate: 1-Chlorooctane 73.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 81.7 % 34.7-157

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Fax To: (575) 397-0397

Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 10 @ 2 (H702885-41)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 10 @ 7 (H702885-42)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/25/2017	ND	432	108	400	0.00	

Sample ID: SP 10 @ 12 (H702885-43)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/25/2017	ND	432	108	400	0.00		

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Received: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 11 @ SURFACE (H702885-44)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	0.059	0.050	10/25/2017	ND	1.83	91.3	2.00	1.51		
Toluene*	0.258	0.050	10/25/2017	ND	1.84	91.9	2.00	2.45		
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	1.81	90.7	2.00	1.94		
Total Xylenes*	0.217	0.150	10/25/2017	ND	5.42	90.3	6.00	1.92		
Total BTX	0.534	0.300	10/25/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	10/25/2017	ND	432	108	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	10/24/2017	ND	174	86.8	200	4.40	
DRO >C10-C28	1650	10.0	10/24/2017	ND	185	92.6	200	5.21	
EXT DRO >C28-C36	600	10.0	10/24/2017	ND					

Surrogate: 1-Chlorooctane 71.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 112 % 34.7-157

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Received: 10/20/2017
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Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 11 @ 1 (H702885-45)

BTX 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	10/25/2017	ND	1.83	91.3	2.00	1.51	
Toluene*	<0.050	0.050	10/25/2017	ND	1.84	91.9	2.00	2.45	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	1.81	90.7	2.00	1.94	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	5.42	90.3	6.00	1.92	
Total BTX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	10/25/2017	ND	432	108	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	10/24/2017	ND	174	86.8	200	4.40	
DRO >C10-C28	<10.0	10.0	10/24/2017	ND	185	92.6	200	5.21	
EXT DRO >C28-C36	18.5	10.0	10/24/2017	ND					

Surrogate: 1-Chlorooctane 75.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 84.4 % 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: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 11 @ 6 (H702885-46)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/25/2017	ND	432	108	400	0.00		

Sample ID: SP 11 @ 11 (H702885-47)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/25/2017	ND	432	108	400	0.00		

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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: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NORTH @ SURFACE (H702885-48)

BTX 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	10/25/2017	ND	1.83	91.3	2.00	1.51	
Toluene*	<0.050	0.050	10/25/2017	ND	1.84	91.9	2.00	2.45	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	1.81	90.7	2.00	1.94	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	5.42	90.3	6.00	1.92	
Total BTX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/25/2017	ND	432	108	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	10/24/2017	ND	174	86.8	200	4.40	
DRO >C10-C28	<10.0	10.0	10/24/2017	ND	185	92.6	200	5.21	
EXT DRO >C28-C36	<10.0	10.0	10/24/2017	ND					

Surrogate: 1-Chlorooctane 77.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 88.1 % 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: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: EAST @ SURFACE (H702885-49)

BTX 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	10/25/2017	ND	1.83	91.3	2.00	1.51	
Toluene*	<0.050	0.050	10/25/2017	ND	1.84	91.9	2.00	2.45	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	1.81	90.7	2.00	1.94	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	5.42	90.3	6.00	1.92	
Total BTX	<0.300	0.300	10/25/2017	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	10/25/2017	ND	432	108	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	10/24/2017	ND	174	86.8	200	4.40	
DRO >C10-C28	<10.0	10.0	10/24/2017	ND	185	92.6	200	5.21	
EXT DRO >C28-C36	<10.0	10.0	10/24/2017	ND					

Surrogate: 1-Chlorooctane 78.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 85.2 % 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: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: WEST @ SURFACE (H702885-50)

BTX 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	10/25/2017	ND	1.83	91.3	2.00	1.51	
Toluene*	<0.050	0.050	10/25/2017	ND	1.84	91.9	2.00	2.45	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	1.81	90.7	2.00	1.94	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	5.42	90.3	6.00	1.92	
Total BTX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2017	ND	432	108	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	10/24/2017	ND	174	86.8	200	4.40	
DRO >C10-C28	<10.0	10.0	10/24/2017	ND	185	92.6	200	5.21	
EXT DRO >C28-C36	<10.0	10.0	10/24/2017	ND					

Surrogate: 1-Chlorooctane 74.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 73.7 % 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: 10/20/2017
Reported: 10/27/2017
Project Name: PYGMY 27 STATE #3H
Project Number: (9-23-17)
Project Location: LEA COUNTY, NM 176

Sampling Date: 10/17/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SOUTH @ SURFACE (H702885-51)

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	10/25/2017	ND	1.83	91.3	2.00	1.51	
Toluene*	<0.050	0.050	10/25/2017	ND	1.84	91.9	2.00	2.45	
Ethylbenzene*	<0.050	0.050	10/25/2017	ND	1.81	90.7	2.00	1.94	
Total Xylenes*	<0.150	0.150	10/25/2017	ND	5.42	90.3	6.00	1.92	
Total BTEX	<0.300	0.300	10/25/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/25/2017	ND	432	108	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	10/24/2017	ND	174	86.8	200	4.40	
DRO >C10-C28	<10.0	10.0	10/24/2017	ND	185	92.6	200	5.21	
EXT DRO >C28-C36	<10.0	10.0	10/24/2017	ND					

Surrogate: 1-Chlorooctane 69.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 76.8 % 34.7-157

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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.
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



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.
Project Manager: Cliff Brunson
Address: P.O. Box 805
City: Hobbs
Phone #: 575-397-6388
State: NM Zip: 88241
Fax #: 575-397-0397

Project #:
Project Name: *Pygmy 27-34 (9-23-17)*
Project Location: *176*

Project Owner: *LDG*
City: _____ State: _____ Zip: _____
Phone #: _____ Fax #: _____

Sample Name: *10th Ornelas*
FOR LAB USE ONLY

Lab I.D. Sample I.D.

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							DATE	TIME	ANALYSIS REQUEST									
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :										
<i>H702885</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>TPH Extended BTEX C/-</i>									
<i>1</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>2</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>3</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>4</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>5</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>TPH Extended BTEX C/-</i>									
<i>6</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>7</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>8</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>9</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>10</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>TPH Extended BTEX C/-</i>									
<i>11</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>12</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>13</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>14</i>	<i>SP1054</i>	<i>1</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>										

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Relinquished By: *10th Ornelas* Date: *10-20-17* Received By: *Quinn*

Relinquished By: *10th Ornelas* Date: *10-20-17* Received By: *Quinn*

Relinquished By: *10th Ornelas* Date: *10-20-17* Received By: *Quinn*

Delivered By: (Circle One) *-0.52* Sample Condition: ☒ Cool ☐ Intact ☐ Yes ☐ No
Sampler - UPS - Bus - Other: *Inspected -0.252* ☐ Yes ☐ No *70. \$15*

Phone Result: ☐ Yes ☐ No Add'l Phone #: _____
Fax Result: ☐ Yes ☐ No Add'l Fax #: _____

REMARKS:

† 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

 $\frac{2}{9}$

Company Name: BBC International, Inc.

Project Manager: Cliff Brunson

Address: P.O. Box 805

City: Hobbs

Phone #: 575-397-6388

Project #:

Project Name:

Project Location:

Sample Name:

FOR LAB USE ONLY

State: NM **Zip:** 88241

Fax #: 575-397-0397

Project Owner: (OC)

City:

State: **Zip:**

Phone #:

Fax #:

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Relinquished By: *[Signature]* **Date:** 10-20-17 **Received By:** *[Signature]* **Date:** 10-20-17

Relinquished By: *[Signature]* **Date:** 10-20-17 **Received By:** *[Signature]* **Date:** 10-20-17

Delivered By: (Circle One) *Delivered* **Sample Condition:** ☒ Cool ☐ Intact ☐ Yes ☐ No

Sampler - UPS - Bus - Other: *Delivered* **Checked By:** *[Signature]*

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	TPH Extended	BTEX	Cl-
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H702885	SP306	G	1			X				10/17	055			
11	SP306	G	1			X				9/11	055			
12	SP405R	G	1			X				9/30	055			
13	SP405R	G	1			X				9/30	055			
14	SP405R	G	1			X				9/30	055			
15	SP405R	G	1			X				9/30	055			
16	SP405R	G	1			X				9/30	055			
17	SP405R	G	1			X				9/30	055			
18	SP405R	G	1			X				9/30	055			
19	SP405R	G	1			X				9/30	055			
20	SP405R	G	1			X				9/30	055			

REMARKS:

☐ Yes ☐ No ☐ Add'l Phone #: ☐ Add'l Fax #:



CARDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

4/6

BILL TO

ANALYSIS REQUEST

Company Name: BBC International, Inc.
Project Manager: Cliff Brunson
Address: P.O. Box 805
City: Hobbs
Phone #: 575-397-6388
Project #:
Project Name: Pygmy 27-3H
Project Location: 1/7c

State: NM Zip: 88241
Fax #: 575-397-0397
Project Owner: Cog

City: Hobbs
Address:
City:
State: Zip:
Phone #:
Fax #:

Sample Name: 1/7c

FOR LAB USE ONLY

Lab I.D. Sample I.D.

HT02885

31 SP002

32 SP002

33 SP002

34 SP005d

35 SP005d

36 SP005d

37 SP005d

38 SP005d

39 SP005d

(G)RAB OR (C)OMP.
CONTAINERS
GROUNDWATER
WASTEWATER
SOIL
OIL
SLUDGE
OTHER:
ACID/BASE:
ICE / COOL
OTHER:

DATE
TIME

10/7 1250

11/ 111

12/ 125

13/ 129

14/ 133

15/ 145

16/ 155

17/ 206

TPH Extended
BTEX
Ct

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:

REMARKS:

Relinquished By: 10/6/2017
Received By: 10/6/2017
Date: 10/6/2017
Time: 3:40
Relinquished By: 10/6/2017
Received By: 10/6/2017
Date: 10/6/2017
Time: 3:40
Relinquished By: 10/6/2017
Received By: 10/6/2017
Date: 10/6/2017
Time: 3:40

Delivered By: (Circle One) -0.52
Sampler - UPS - Bus - Other: 10/6/2017 -0.52
Sample Condition: Cool ☐ Intact ☐
Checked By: (Initials) 10/6/2017

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



ARDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

5/6

BILL TO

ANALYSIS REQUEST

Company Name: BBC International, Inc.		P.O. #:	
Project Manager: Cliff Brunson		Company:	
Address: P.O. Box 805		Attn:	
City: Hobbs		State: NM Zip: 88241	
Phone #: 575-397-6388		Fax #: 575-397-0397	
Project #:		Project Owner: CoE	
Project Name: Pygmy 27-3H 9-23-17		City:	
Project Location: 176		State: Zip:	
Sample Name: 16		Phone #:	
FOR LAB USE ONLY		Fax #:	
Lab I.D.		Sample I.D.	
H102885		SP1002	
41		SP1002	
42		SP1002	
43		SP1002	
44		SP1002	
45		SP1002	
46		SP1002	
47		SP1002	
48		SP1002	
49		SP1002	
50		SP1002	
North OSK		North OSK	
East OSK		East OSK	
West OSK		West OSK	
Relinquished By: V. J. Davis		Date: 10/17	
Relinquished By: V. J. Davis		Date: 10/17	
Delivered By: (Circle One) 0.52		Sample Condition	
Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	
Sampler - UPS - Bus - Other: 0.25		CHECKED BY: (Initials) 72 HHS	

† 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

6/6

BILL TO

ANALYSIS REQUEST

Company Name: BBC International, Inc.		P.O. #:	
Project Manager: Cliff Brunson		Company:	
Address: P.O. Box 805		Attn:	
City: Hobbs		State: NM Zip: 88241	
Phone #: 575-397-6388		Fax #: 575-397-0397	
Project #:		Project Owner: (OC)	
Project Name: Rygon 27-3H		City: 9-23-12	
Project Location: 16		State: Zip:	
Sample Name:		Fax #:	
FOR LAB USE ONLY		PRESERV	
Lab I.D.		Sample I.D.	
H102885		South OSC	
SI		CI	
(G)RAB OR (C)OMP.		# CONTAINERS	
GROUNDWATER		WASTEWATER	
SOIL		OIL	
SLUDGE		OTHER :	
ACID/BASE:		ICE / COOL	
OTHER :		DATE	
TIME		10-17-11	
TPH Extended		BTEX	
CI-			

Relinquished By:	Date: 10-20-11	Received By:	Date: 10-20-11
Relinquished By:	Date:	Received By:	Date:
Delivered By: (Circle One)	Time: 3:40	Sample Condition	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:	Time:	Cool <input type="checkbox"/> Intact <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
0.5c	Time:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Corrected 0.25c	Time:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
12.415	Time:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

REMARKS:

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

+ 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

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC [OGRID] 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-230-0077
Facility Name: PYGMY 27 STATE #003H	Facility Type: Battery

Surface Owner: Private	Mineral Owner: State	API No. 30-025-42068
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LOCATION OF RELEASE

Unit Letter B	Section 27	Township 21S	Range 33E	Feet from the 190'	North/South Line North	Feet from the 1980'	East/West Line East	County Lea
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Latitude 32.4565239 Longitude - 103.5581741

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 7 bbls Oil	Volume Recovered: 0.5 bbls Oil
Source of Release: Valve	Date and Hour of Occurrence: 9-23-2017 9:00 am	Date and Hour of Discovery: 9-23-2017 9:00 am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
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.*

RECEIVED

By Olivia Yu at 4:06 pm, Sep 26, 2017



Describe Cause of Problem and Remedial Action Taken.*

The release occurred when a valve on the backside of the casing was left in the wrong position. The valve was placed in the correct position and a bull plug was installed.

Describe Area Affected and Cleanup Action Taken.*

The release occurred on the well pad and in the adjacent pasture. Vacuum trucks were dispatched to recover all standing fluid and microblaze was applied to the pasture. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Dakota Neel	Approved by Environmental Specialist: 	
Title: HSE Coordinator	Approval Date: 9/26/2017	Expiration Date:
E-mail Address: dneel2@concho.com	Conditions of Approval: see attached directive	Attached <input checked="" type="checkbox"/>
Date: September 25, 2017 Phone: 575-746-2010		

* Attach Additional Sheets If Necessary

1RP-4824

nOY1726958109

pOY1726958330

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 9/25/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 1RP-4824 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 10/26/2017. 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; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), 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