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## **COG – STATE 11 COM #1**

### **REMEDIATION PLAN**

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COG will excavate the spill area as depicted on the following site diagram. The entire spill area will be excavated to a depth of 4 feet then an impermeable liner will be placed into the excavation. All of the surface equipment will be removed prior to the excavation. The entire site will be backfilled with clean soil.

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

## State 11 Com #1

30-015-27916  
Sec 11 T19S R28E

### Legend

- Area of Impact
- Backhoe Sampling Point
- Coring sample point

State 11 Com #1

S2 B2  
S1 B1



# Groundwater Plot

## Concho State 11 Com #1

County  
Eddy

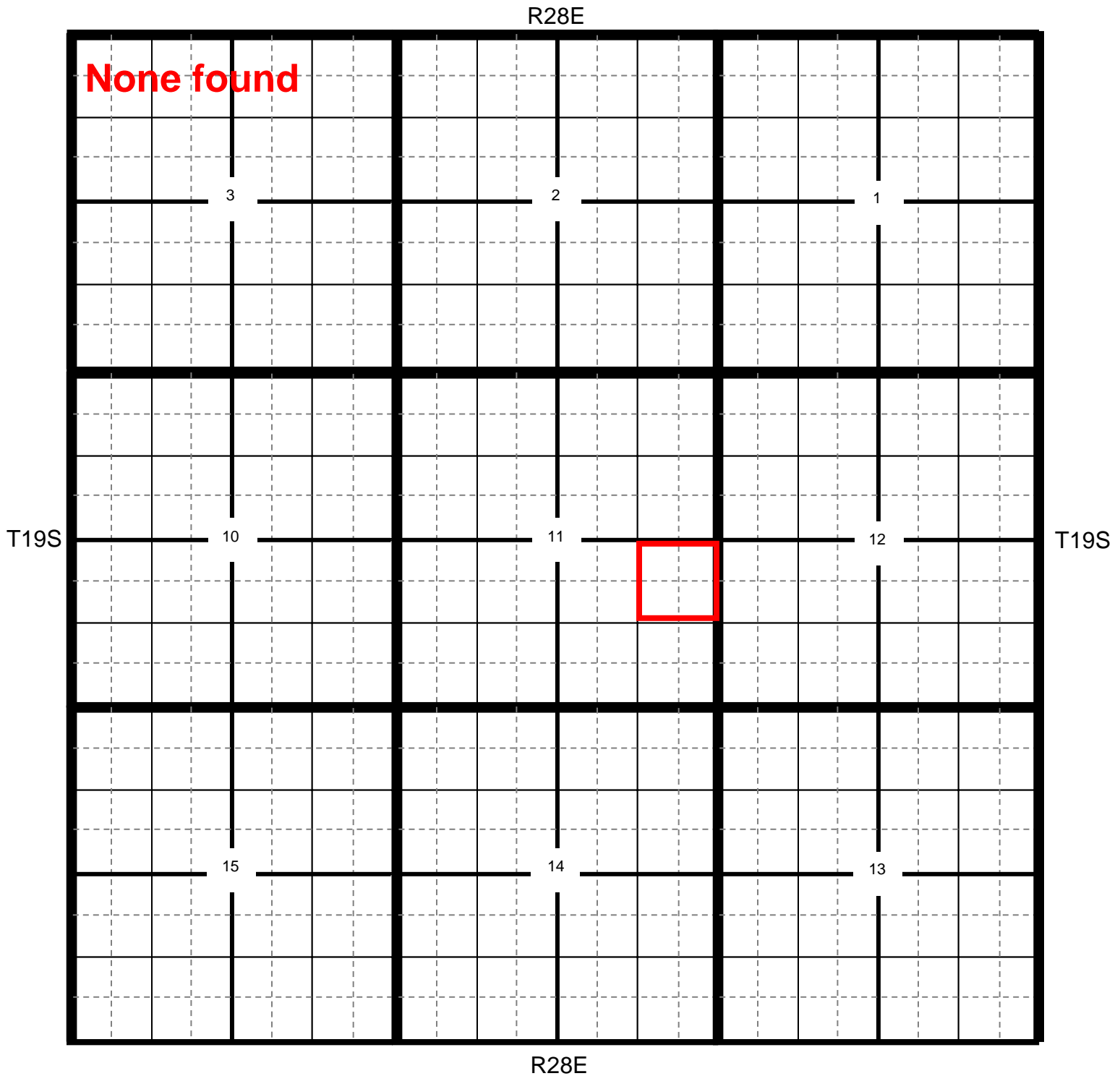
Unit Letter  
I

Section  
11

Township  
19S

Range  
28E

Trend Map 150'



★ Location

● OCD

● USGS

● SEO

● All Databases

## Concho State 11 Com #1

<b>County</b>	<b>Unit Letter</b>	<b>Section</b>	<b>Township</b>	<b>Range</b>
Eddy	I	11	19S	28E

Trend Map 150'

1

2

NW/NW <b>None found</b>	NE/NW	NW/NE	NE/NE
Unit Letter D	Unit Letter C	Unit Letter B	Unit Letter A
SW/NW	SE/NW	SW/NE	SE/NE
Unit Letter E	Unit Letter F	Unit Letter G	Unit Letter H
NW/SW	NE/SW	NW/SE	NE/SE
Unit Letter L	Unit Letter K	Unit Letter J	Unit Letter I
SW/SW	SE/SW	SW/SE	SE/SE
Unit Letter M	Unit Letter N	Unit Letter O	Unit Letter P

3

4

**Laboratory Analytical Results Summary  
State II Com #001**

		Sample	SP1 @ 1'	SP1 @ 2'	S1 @ 3'	S1 @ 4'
Analyte	Method	Date	1/18/16	1/18/16	1/18/16	1/18/16
			mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<2.00	<2.00	<5.00	<5.00
<b>Toluene</b>	BTEX 8021B		14	45.9	19	44.7
<b>Ethylbenzene</b>	BTEX 8021B		29.9	36.6	31.5	48
<b>Total Xylenes</b>	BTEX 8021B		281	311	293	418
<b>Total BTEX</b>	BTEX 8021B		324	393	344	511
<b>Chloride</b>	SM4500Cl-B		<16.0	32	<16	<16.0
<b>GRO</b>	TPH 8015M		5150	5510	6070	9120
<b>DRO</b>	TPH 8015M		2420	2150	2550	3790

		Sample	SP2 @ 1'	SP2 @ 2'	S2 @ 3'	S2 @ 4'	S2 @ 5'	S2 @ 6'
Analyte	Method	Date	1/18/16	1/18/16	1/18/16	1/18/16	1/18/16	1/18/16
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<5.00	<5.00	<5.00	<5.00	<10.0	<5.00
<b>Toluene</b>	BTEX 8021B		25.7	92.9	149	91	272	94.1
<b>Ethylbenzene</b>	BTEX 8021B		31.5	65.3	84.8	53	110	53.3
<b>Total Xylenes</b>	BTEX 8021B		313	541	665	437	879	451
<b>Total BTEX</b>	BTEX 8021B		371	699	899	582	1260	598
<b>Chloride</b>	SM4500Cl-B		<16.0	80	64	<16.0	<16.0	32
<b>GRO</b>	TPH 8015M		5420	11700	10700	8620	16300	8480
<b>DRO</b>	TPH 8015M		2250	3840	2870	2710	4010	2780

**Laboratory Analytical Results Summary**  
**State 11 Com #1**

		Sample	B1 @ 5'	B1 @ 6'	B1 @ 7'	B1 @ 8'	B1 @ 10'	B1 @ 11'	B1 @ 12'
Analyte	Method	Date	8/19/15	8/19/15	8/19/15	8/19/15	8/19/15	8/19/15	8/19/15
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<2.00	<2.00	<2.00	<2.50	<2.50	<2.00	<2.00
<b>Toluene</b>	BTEX 8021B		8.81	14.1	5.9	15	17.8	17.3	23.9
<b>Ethylbenzene</b>	BTEX 8021B		15.5	22.3	17.1	21.3	19	16.8	20.1
<b>Total Xylenes</b>	BTEX 8021B		156	215	164	191	164	136	162
<b>Total BTEX</b>	BTEX 8021B		181	252	187	227	201	171	206
<b>GRO</b>	TPH 8015M		2110	2560	2140	3870	3450	2870	3060
<b>DRO</b>	TPH 8015M		1710	1720	1810	2840	2530	2040	1980

**Laboratory Analytical Results Summary**  
**State 11 Com #11**

		Sample	B1 @ 15'	B1 @ 18'	B1 @ 20'	B1 @ 25'
Analyte	Method	Date	8/19/15	8/19/15	8/19/15	8/19/15
			mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<2.00	<0.050	<0.050	<0.050
<b>Toluene</b>	BTEX 8021B		<b>16.8</b>	<0.050	<0.050	<0.050
<b>Ethylbenzene</b>	BTEX 8021B		<b>15.7</b>	<0.050	<b>0.15</b>	<b>0.09</b>
<b>Total Xylenes</b>	BTEX 8021B		<b>127</b>	<0.150	<b>0.24</b>	<0.150
<b>Total BTEX</b>	BTEX 8021B		<b>159</b>	<0.300	<b>0.391</b>	<0.300
<b>GRO</b>	TPH 8015M		<b>2880</b>	<b>14.9</b>	<b>38.8</b>	<10.0
<b>DRO</b>	TPH 8015M		<b>1670</b>	<b>90.2</b>	<b>82.8</b>	<b>19</b>

**Laboratory Analytical Results Summary**  
**State 11 Com #11**

		Sample	B1 @ 28'	B1 @ 31'	B1 @ 34'	B1 @ 37'	B1 @ 40'
Analyte	Method	Date	8/19/15	8/19/15	8/19/15	8/19/15	8/19/15
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
<b>Toluene</b>	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
<b>Ethylbenzene</b>	BTEX 8021B		<b>0.073</b>	<0.050	<0.050	<0.050	<0.050
<b>Total Xylenes</b>	BTEX 8021B		<0.150	<0.150	<0.150	<0.150	<0.150
<b>Total BTEX</b>	BTEX 8021B		<0.300	<0.300	<0.300	<0.300	<0.300
<b>GRO</b>	TPH 8015M		<10.0	<10.0	<10.0	<10.0	<10.0
<b>DRO</b>	TPH 8015M		<b>16.8</b>	<10.0	<10.0	<10.0	<10.0



**Laboratory Analytical Results Summary**  
**State 11 Com #1**

		Sample	B2 @ 7'	B2 @ 8'	B2 @ 9'	B2 @ 10'	B2 @ 11'	B2 @ 12'
Analyte	Method	Date	8/19/15	8/19/15	8/19/15	8/19/15	8/19/15	8/19/15
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<0.500	<0.050	<0.100	<0.050	<0.050	<0.050
<b>Toluene</b>	BTEX 8021B		<b>9.33</b>	<0.050	<0.100	<0.050	<0.050	<0.050
<b>Ethylbenzene</b>	BTEX 8021B		<b>7.72</b>	<b>0.055</b>	<b>0.336</b>	<0.050	<0.050	<0.050
<b>Total Xylenes</b>	BTEX 8021B		<b>95</b>	<0.150	<b>4.36</b>	<0.150	<0.150	<0.150
<b>Total BTEX</b>	BTEX 8021B		<b>112</b>	<0.300	<b>4.7</b>	<0.300	<0.300	<0.300
<b>GRO</b>	TPH 8015M		<b>773</b>	<10.0	<b>186</b>	<10.0	<10.0	<10.0
<b>DRO</b>	TPH 8015M		<b>550</b>	<b>28.6</b>	<b>322</b>	<b>28.2</b>	<10.0	<10.0

**Laboratory Analytical Results Summary**  
**State 11 Com #1**

		Sample	B2 @ 15'	B2 @ 18'	B2 @ 23'	B2 @ 25'
Analyte	Method	Date	8/19/15	8/19/15	8/19/15	8/19/15
			mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
<b>Toluene</b>	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
<b>Ethylbenzene</b>	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
<b>Total Xylenes</b>	BTEX 8021B		<0.150	<0.150	<0.150	<0.150
<b>Total BTEX</b>	BTEX 8021B		<0.300	<0.300	<0.300	<0.300
<b>GRO</b>	TPH 8015M		<10.0	<10.0	<10.0	<10.0
<b>DRO</b>	TPH 8015M		<10.0	<10.0	<10.0	<10.0

**Laboratory Analytical Results Summary**  
**State 11 Com #1**

		Sample	B2 @ 28'	B2 @ 34'	B2 @ 37'	B2 @ 41'
Analyte	Method	Date	8/19/15	8/19/15	8/19/15	8/19/15
			mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Benzene</b>	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
<b>Toluene</b>	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
<b>Ethylbenzene</b>	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
<b>Total Xylenes</b>	BTEX 8021B		<0.150	<0.150	<0.150	<0.150
<b>Total BTEX</b>	BTEX 8021B		<0.300	<0.300	<0.300	<0.300
<b>GRO</b>	TPH 8015M		<10.0	<10.0	<10.0	<10.0
<b>DRO</b>	TPH 8015M		<10.0	<10.0	<10.0	<10.0

August 18, 2015

AMANDA TRUJILLO  
COG Operating, LLC  
500 W. ILLINOIS  
Midland, TX 79701

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/12/15 14:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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	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:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S1 1' (H502105-01)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.00	2.00	08/15/2015	ND	2.23	112	2.00	1.51	
Toluene*	14.0	2.00	08/15/2015	ND	2.12	106	2.00	2.75	
Ethylbenzene*	29.9	2.00	08/15/2015	ND	2.33	116	2.00	2.48	
Total Xylenes*	281	6.00	08/15/2015	ND	6.49	108	6.00	2.28	
Total BTEx	324	12.0	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 97.3 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2015	ND	416	104	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	5150	10.0	08/14/2015	ND	182	91.0	200	0.523		
DRO >C10-C28	2420	10.0	08/14/2015	ND	191	95.7	200	0.645		

Surrogate: 1-Chlorooctane 181 % 47.2-157

Surrogate: 1-Chlorooctadecane 96.3 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S1 2' (H502105-02)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.00	2.00	08/15/2015	ND	2.23	112	2.00	1.51	
Toluene*	45.9	2.00	08/15/2015	ND	2.12	106	2.00	2.75	
Ethylbenzene*	36.6	2.00	08/15/2015	ND	2.33	116	2.00	2.48	
Total Xylenes*	311	6.00	08/15/2015	ND	6.49	108	6.00	2.28	
Total BTEX	393	12.0	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 95.4 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	08/17/2015	ND	416	104	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	5510	10.0	08/14/2015	ND	182	91.0	200	0.523		
DRO >C10-C28	2150	10.0	08/14/2015	ND	191	95.7	200	0.645		

Surrogate: 1-Chlorooctane 172 % 47.2-157

Surrogate: 1-Chlorooctadecane 94.0 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S1 3' (H502105-03)**

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	08/15/2015	ND	2.23	112	2.00	1.51	
<b>Toluene*</b>	<b>19.0</b>	5.00	08/15/2015	ND	2.12	106	2.00	2.75	
<b>Ethylbenzene*</b>	<b>31.5</b>	5.00	08/15/2015	ND	2.33	116	2.00	2.48	
<b>Total Xylenes*</b>	<b>293</b>	15.0	08/15/2015	ND	6.49	108	6.00	2.28	
<b>Total BTEX</b>	<b>344</b>	30.0	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 106 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2015	ND	416	104	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	
<b>GRO C6-C10</b>	<b>6070</b>	10.0	08/14/2015	ND	182	91.0	200	0.523		
<b>DRO &gt;C10-C28</b>	<b>2550</b>	10.0	08/14/2015	ND	191	95.7	200	0.645		

Surrogate: 1-Chlorooctane 184 % 47.2-157

Surrogate: 1-Chlorooctadecane 94.6 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S1 4' (H502105-04)**

BTX 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	08/15/2015	ND	2.23	112	2.00	1.51	
<b>Toluene*</b>	<b>44.7</b>	5.00	08/15/2015	ND	2.12	106	2.00	2.75	
<b>Ethylbenzene*</b>	<b>48.0</b>	5.00	08/15/2015	ND	2.33	116	2.00	2.48	
<b>Total Xylenes*</b>	<b>418</b>	15.0	08/15/2015	ND	6.49	108	6.00	2.28	
<b>Total BTX</b>	<b>511</b>	30.0	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 93.6 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2015	ND	416	104	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	
<b>GRO C6-C10</b>	<b>9120</b>	10.0	08/14/2015	ND	182	91.0	200	0.523		
<b>DRO &gt;C10-C28</b>	<b>3790</b>	10.0	08/14/2015	ND	191	95.7	200	0.645		

Surrogate: 1-Chlorooctane 228 % 47.2-157

Surrogate: 1-Chlorooctadecane 93.3 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 COG Operating, LLC  
 AMANDA TRUJILLO  
 500 W. ILLINOIS  
 Midland TX, 79701  
 Fax To: None

 Received: 08/12/2015  
 Reported: 08/18/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/05/2015  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Judy Garcia

**Sample ID: S2 1' (H502105-05)**

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	08/15/2015	ND	2.23	112	2.00	1.51	
<b>Toluene*</b>	<b>25.7</b>	5.00	08/15/2015	ND	2.12	106	2.00	2.75	
<b>Ethylbenzene*</b>	<b>31.5</b>	5.00	08/15/2015	ND	2.33	116	2.00	2.48	
<b>Total Xylenes*</b>	<b>313</b>	15.0	08/15/2015	ND	6.49	108	6.00	2.28	
<b>Total BTEX</b>	<b>371</b>	30.0	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 108 % 85.6-137

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2015	ND	416	104	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	
<b>GRO C6-C10</b>	<b>5420</b>	10.0	08/14/2015	ND	182	91.0	200	0.523		
<b>DRO &gt;C10-C28</b>	<b>2250</b>	10.0	08/14/2015	ND	191	95.7	200	0.645		

Surrogate: 1-Chlorooctane 175 % 47.2-157

Surrogate: 1-Chlorooctadecane 99.2 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S2 2' (H502105-06)**

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	08/15/2015	ND	2.23	112	2.00	1.51	
<b>Toluene*</b>	<b>92.9</b>	5.00	08/15/2015	ND	2.12	106	2.00	2.75	
<b>Ethylbenzene*</b>	<b>65.3</b>	5.00	08/15/2015	ND	2.33	116	2.00	2.48	
<b>Total Xylenes*</b>	<b>541</b>	15.0	08/15/2015	ND	6.49	108	6.00	2.28	
<b>Total BTEX</b>	<b>699</b>	30.0	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 93.5 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>80.0</b>	16.0	08/17/2015	ND	416	104	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	
<b>GRO C6-C10</b>	<b>11700</b>	100	08/14/2015	ND	182	91.0	200	0.523		
<b>DRO &gt;C10-C28</b>	<b>3840</b>	100	08/14/2015	ND	191	95.7	200	0.645		

Surrogate: 1-Chlorooctane 260 % 47.2-157

Surrogate: 1-Chlorooctadecane 98.3 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S2 3' (H502105-07)**

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	08/15/2015	ND	2.23	112	2.00	1.51	
Toluene*	149	5.00	08/15/2015	ND	2.12	106	2.00	2.75	
Ethylbenzene*	84.8	5.00	08/15/2015	ND	2.33	116	2.00	2.48	
Total Xylenes*	665	15.0	08/15/2015	ND	6.49	108	6.00	2.28	
Total BTEX	899	30.0	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 93.5 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	08/17/2015	ND	416	104	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	10700	100	08/14/2015	ND	182	91.0	200	0.523		
DRO >C10-C28	2870	100	08/14/2015	ND	191	95.7	200	0.645		

Surrogate: 1-Chlorooctane 219 % 47.2-157

Surrogate: 1-Chlorooctadecane 88.3 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG Operating, LLC  
AMANDA TRUJILLO  
500 W. ILLINOIS  
Midland TX, 79701  
Fax To: None

Received: 08/12/2015  
Reported: 08/18/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/05/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Judy Garcia

**Sample ID: S2 4' (H502105-08)**

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	08/15/2015	ND	2.23	112	2.00	1.51	
<b>Toluene*</b>	<b>91.0</b>	5.00	08/15/2015	ND	2.12	106	2.00	2.75	
<b>Ethylbenzene*</b>	<b>53.0</b>	5.00	08/15/2015	ND	2.33	116	2.00	2.48	
<b>Total Xylenes*</b>	<b>437</b>	15.0	08/15/2015	ND	6.49	108	6.00	2.28	
<b>Total BTEX</b>	<b>582</b>	30.0	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 109 % 85.6-137

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2015	ND	416	104	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	
<b>GRO C6-C10</b>	<b>8620</b>	10.0	08/14/2015	ND	182	91.0	200	0.523		
<b>DRO &gt;C10-C28</b>	<b>2710</b>	10.0	08/14/2015	ND	191	95.7	200	0.645		

Surrogate: 1-Chlorooctane 193 % 47.2-157

Surrogate: 1-Chlorooctadecane 92.0 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 COG Operating, LLC  
 AMANDA TRUJILLO  
 500 W. ILLINOIS  
 Midland TX, 79701  
 Fax To: None

 Received: 08/12/2015  
 Reported: 08/18/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/05/2015  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Judy Garcia

**Sample ID: S2 5' (H502105-09)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<10.0	10.0	08/15/2015	ND	2.23	112	2.00	1.51	
<b>Toluene*</b>	<b>272</b>	10.0	08/15/2015	ND	2.12	106	2.00	2.75	
<b>Ethylbenzene*</b>	<b>110</b>	10.0	08/15/2015	ND	2.33	116	2.00	2.48	
<b>Total Xylenes*</b>	<b>879</b>	30.0	08/15/2015	ND	6.49	108	6.00	2.28	
<b>Total BTEX</b>	<b>1260</b>	60.0	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 103 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/17/2015	ND	416	104	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	
<b>GRO C6-C10</b>	<b>16300</b>	100	08/14/2015	ND	182	91.0	200	0.523		
<b>DRO &gt;C10-C28</b>	<b>4010</b>	100	08/14/2015	ND	191	95.7	200	0.645		

Surrogate: 1-Chlorooctane 275 % 47.2-157

Surrogate: 1-Chlorooctadecane 96.3 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG Operating, LLC  
 AMANDA TRUJILLO  
 500 W. ILLINOIS  
 Midland TX, 79701  
 Fax To: None

 Received: 08/12/2015  
 Reported: 08/18/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/05/2015  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Judy Garcia

**Sample ID: S2 6' (H502105-10)**

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	08/15/2015	ND	2.23	112	2.00	1.51	
<b>Toluene*</b>	<b>94.1</b>	5.00	08/15/2015	ND	2.12	106	2.00	2.75	
<b>Ethylbenzene*</b>	<b>53.3</b>	5.00	08/15/2015	ND	2.33	116	2.00	2.48	
<b>Total Xylenes*</b>	<b>451</b>	15.0	08/15/2015	ND	6.49	108	6.00	2.28	
<b>Total BTEX</b>	<b>598</b>	30.0	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 92.2 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	08/17/2015	ND	416	104	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	
<b>GRO C6-C10</b>	<b>8480</b>	10.0	08/14/2015	ND	182	91.0	200	0.523		
<b>DRO &gt;C10-C28</b>	<b>2780</b>	10.0	08/14/2015	ND	191	95.7	200	0.645		

Surrogate: 1-Chlorooctane 203 % 47.2-157

Surrogate: 1-Chlorooctadecane 105 % 52.1-176

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.
- 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





101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: COG Operating LLC		P.O. #:	
Project Manager: Amanda		Company: COG Operating LLC	
Address: 2208 West Main		Attn: Robert McNeill	
City: Artesia	State: NM	Zip: 88210	Address: 600 W Illinois
Phone #: (575) 748-6930	Fax #:	City: Midland	State: TX
Project #:	Project Owner:	Zip: 79701	Phone #: (432) 221-0388
Project Name: State 11 Com #1			Fax #:
Project Location:			
Sampler Name: Amanda Trujillo			

FOR LAB USE ONLY		LABORATORY USE ONLY		PRESERV.		SAMPLING		ANALYSIS	
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER
HS02105	S1 1'	1	1	X	X	X	X	X	X
HS02105	S1 2'	1	1	X	X	X	X	X	X
HS02105	S1 3'	1	1	X	X	X	X	X	X
HS02105	S1 4'	1	1	X	X	X	X	X	X
HS02105	S2 1'	1	1	X	X	X	X	X	X
HS02105	S2 2'	1	1	X	X	X	X	X	X
HS02105	S2 3'	1	1	X	X	X	X	X	X
HS02105	S2 4'	1	1	X	X	X	X	X	X
HS02105	S2 5'	1	1	X	X	X	X	X	X
HS02105	S2 6'	1	1	X	X	X	X	X	X

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Relinquished By: <i>[Signature]</i>	Date: 8/11/15	Received By: <i>[Signature]</i>	Date: 8/11/15
Relinquished By: <i>[Signature]</i>	Date: 8/11/15	Received By: <i>[Signature]</i>	Date: 8/11/15

Delivered By: (Circle One)	Sample Condition	CHECKED BY: <i>[Signature]</i>
Sampler - UPS - Bus - Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No	(Initials)

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



August 27, 2015

LUPE CARRASCO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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	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:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 5' (H502225-01)**

BTEX 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.00	2.00	08/26/2015	ND	2.00	100	2.00	0.409	
<b>Toluene*</b>	<b>8.81</b>	2.00	08/26/2015	ND	1.87	93.6	2.00	0.205	
<b>Ethylbenzene*</b>	<b>15.5</b>	2.00	08/26/2015	ND	1.97	98.5	2.00	1.30	
<b>Total Xylenes*</b>	<b>156</b>	6.00	08/26/2015	ND	5.76	96.1	6.00	0.693	
<b>Total BTEX</b>	<b>181</b>	12.0	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 87.9 % 85.6-137

TPH 8015M			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>2110</b>	10.0	08/25/2015	ND	193	96.5	200	1.10	
<b>DRO &gt;C10-C28</b>	<b>1710</b>	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 145 % 47.2-157

Surrogate: 1-Chlorooctadecane 79.8 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 6' (H502225-02)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.00	2.00	08/26/2015	ND	2.00	100	2.00	0.409	
Toluene*	14.1	2.00	08/26/2015	ND	1.87	93.6	2.00	0.205	
Ethylbenzene*	22.3	2.00	08/26/2015	ND	1.97	98.5	2.00	1.30	
Total Xylenes*	215	6.00	08/26/2015	ND	5.76	96.1	6.00	0.693	
Total BTEx	252	12.0	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.7 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	2560	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	1720	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 149 % 47.2-157

Surrogate: 1-Chlorooctadecane 88.6 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 7' (H502225-03)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.00	2.00	08/26/2015	ND	2.00	100	2.00	0.409	
Toluene*	5.90	2.00	08/26/2015	ND	1.87	93.6	2.00	0.205	
Ethylbenzene*	17.1	2.00	08/26/2015	ND	1.97	98.5	2.00	1.30	
Total Xylenes*	164	6.00	08/26/2015	ND	5.76	96.1	6.00	0.693	
Total BTEX	187	12.0	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.0 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	2140	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	1810	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 146 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.7 % 52.1-176

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 8' (H502225-04)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.50	2.50	08/26/2015	ND	2.00	100	2.00	0.409	
Toluene*	15.0	2.50	08/26/2015	ND	1.87	93.6	2.00	0.205	
Ethylbenzene*	21.3	2.50	08/26/2015	ND	1.97	98.5	2.00	1.30	
Total Xylenes*	191	7.50	08/26/2015	ND	5.76	96.1	6.00	0.693	
Total BTEX	227	15.0	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.6 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	3870	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	2840	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 184 % 47.2-157

Surrogate: 1-Chlorooctadecane 93.1 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 10' (H502225-05)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<2.50	2.50	08/26/2015	ND	2.00	100	2.00	0.409		
<b>Toluene*</b>	<b>17.8</b>	2.50	08/26/2015	ND	1.87	93.6	2.00	0.205		
<b>Ethylbenzene*</b>	<b>19.0</b>	2.50	08/26/2015	ND	1.97	98.5	2.00	1.30		
<b>Total Xylenes*</b>	<b>164</b>	7.50	08/26/2015	ND	5.76	96.1	6.00	0.693		
<b>Total BTEX</b>	<b>201</b>	15.0	08/26/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 85.8 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>3450</b>	10.0	08/25/2015	ND	193	96.5	200	1.10		
<b>DRO &gt;C10-C28</b>	<b>2530</b>	10.0	08/25/2015	ND	198	99.2	200	1.84		

Surrogate: 1-Chlorooctane 167 % 47.2-157

Surrogate: 1-Chlorooctadecane 82.2 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 11' (H502225-06)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.00	2.00	08/26/2015	ND	2.00	100	2.00	0.409	
Toluene*	17.3	2.00	08/26/2015	ND	1.87	93.6	2.00	0.205	
Ethylbenzene*	16.8	2.00	08/26/2015	ND	1.97	98.5	2.00	1.30	
Total Xylenes*	136	6.00	08/26/2015	ND	5.76	96.1	6.00	0.693	
Total BTEx	171	12.0	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 86.5 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	2870	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	2040	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 154 % 47.2-157

Surrogate: 1-Chlorooctadecane 92.1 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 12' (H502225-07)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.00	2.00	08/26/2015	ND	2.00	100	2.00	0.409	
Toluene*	23.9	2.00	08/26/2015	ND	1.87	93.6	2.00	0.205	
Ethylbenzene*	20.1	2.00	08/26/2015	ND	1.97	98.5	2.00	1.30	
Total Xylenes*	162	6.00	08/26/2015	ND	5.76	96.1	6.00	0.693	
Total BTEX	206	12.0	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 86.7 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	3060	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	1980	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 152 % 47.2-157

Surrogate: 1-Chlorooctadecane 82.7 % 52.1-176

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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.
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

**(575) 393-2326 FAX (575) 393-2476**  
**COG Operating LLC**

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



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

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August 27, 2015

LUPE CARRASCO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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	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:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 15' (H502224-01)**

BTEX 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.00	2.00	08/26/2015	ND	2.00	100	2.00	0.409	
<b>Toluene*</b>	<b>16.8</b>	2.00	08/26/2015	ND	1.87	93.6	2.00	0.205	
<b>Ethylbenzene*</b>	<b>15.7</b>	2.00	08/26/2015	ND	1.97	98.5	2.00	1.30	
<b>Total Xylenes*</b>	<b>127</b>	6.00	08/26/2015	ND	5.76	96.1	6.00	0.693	
<b>Total BTEX</b>	<b>159</b>	12.0	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 85.6 % 85.6-137

TPH 8015M			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>2880</b>	10.0	08/25/2015	ND	193	96.5	200	1.10	
<b>DRO &gt;C10-C28</b>	<b>1670</b>	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 148 % 47.2-157

Surrogate: 1-Chlorooctadecane 91.2 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 18' (H502224-02)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	2.00	100	2.00	0.409	
Toluene*	<0.050	0.050	08/26/2015	ND	1.87	93.6	2.00	0.205	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.5	2.00	1.30	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.76	96.1	6.00	0.693	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.1 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	14.9	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	90.2	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 85.4 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.3 % 52.1-176

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 20' (H502224-03)**

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	2.00	100	2.00	0.409	
Toluene*	<0.050	0.050	08/26/2015	ND	1.87	93.6	2.00	0.205	
Ethylbenzene*	0.150	0.050	08/26/2015	ND	1.97	98.5	2.00	1.30	
Total Xylenes*	0.240	0.150	08/26/2015	ND	5.76	96.1	6.00	0.693	
Total BTX	0.391	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	38.8	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	82.8	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 84.4 % 47.2-157

Surrogate: 1-Chlorooctadecane 79.3 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 25' (H502224-04)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/26/2015	ND	2.00	100	2.00	0.409		
Toluene*	<0.050	0.050	08/26/2015	ND	1.87	93.6	2.00	0.205		
Ethylbenzene*	0.090	0.050	08/26/2015	ND	1.97	98.5	2.00	1.30		
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.76	96.1	6.00	0.693		
Total BTEX	<0.300	0.300	08/26/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/25/2015	ND	193	96.5	200	1.10		
<b>DRO &gt;C10-C28</b>	<b>19.0</b>	10.0	08/25/2015	ND	198	99.2	200	1.84		

Surrogate: 1-Chlorooctane 80.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 70.2 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

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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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager







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

---

August 27, 2015

LUPE CARRASCO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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	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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONEReceived: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVENSampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia**Sample ID: B1 28' (H502223-01)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
<b>Ethylbenzene*</b>	<b>0.073</b>	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	193	96.5	200	1.10	
<b>DRO &gt;C10-C28</b>	<b>16.8</b>	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 83.0 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.8 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 31' (H502223-02)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 77.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 81.0 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 34' (H502223-03)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.6 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 80.8 % 47.2-157

Surrogate: 1-Chlorooctadecane 84.0 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG OPERATING  
 LUPE CARRASCO  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 08/21/2015  
 Reported: 08/27/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/19/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Judy Garcia

**Sample ID: B1 37' (H502223-04)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.1 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 80.0 % 47.2-157

Surrogate: 1-Chlorooctadecane 82.9 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B1 40' (H502223-05)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.0 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 78.9 % 47.2-157

Surrogate: 1-Chlorooctadecane 70.7 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

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

---

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

## BILL TO

## ANALYSIS REQUEST

Company Name: COG Operating LLC		P.O. #:																			
Project Manager: Lupe Carrasco		Company: COG Operating LLC																			
Address: 2208 West Main		Attn: Robert McNeill																			
City: Artesia	State: NM	Zip: 88210																			
Phone #: (575) 748-6940	Fax #: (575) 748-6940	Address: 600 W Illinois																			
Project #:	Project Owner:	City: Midland																			
Project Name: <u>Stadalkom #1</u>	State: TX	Zip: 79701																			
Project Location:	Phone #: (432) 221-0388	Fax #:																			
Sampler Name: Lupe Carrasco																					
FOR LAB USE ONLY																					
Lab I.D. <u>H502223</u>	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX		PRESERV	SAMPLING														
		GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEX	TPH	Chloride						
1	Blas'	X	1	X	X	X	X	X	X	X	8/19/15	8:35am	X	X							
2	B1 31'	X	1	X	X	X	X	X	X	X			X	X							
3	B1 34'	X	1	X	X	X	X	X	X	X			X	X							
4	B1 37'	X	1	X	X	X	X	X	X	X			X	X							
5	B1 46'	X	1	X	X	X	X	X	X	X			X	X							

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: <u>A. Trujillo</u>	Date: <u>8/20/15</u>	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <u>A. Trujillo</u>	Date: <u>8/20/15</u>	Received By: <u>Judy Garza</u>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other: <u>7.2c</u>	Time: <u>11:07</u>	Sample Condition: <input type="checkbox"/> Cool <input checked="" type="checkbox"/> Intact	REMARKS: <u>gcarrasco@concho.com</u>	atrujillo@concho.com

FORM-006 R 2.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

#54



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

---

August 27, 2015

LUPE CARRASCO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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	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:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 7 (H502222-01)**

BTEX 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	08/26/2015	ND	1.99	99.5	2.00	4.04	
<b>Toluene*</b>	<b>9.33</b>	0.500	08/26/2015	ND	1.85	92.6	2.00	3.26	
<b>Ethylbenzene*</b>	<b>7.72</b>	0.500	08/26/2015	ND	1.97	98.4	2.00	1.93	
<b>Total Xylenes*</b>	<b>95.0</b>	1.50	08/26/2015	ND	5.67	94.4	6.00	2.60	
<b>Total BTEX</b>	<b>112</b>	3.00	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 85.6-137

TPH 8015M			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>773</b>	10.0	08/25/2015	ND	190	95.0	200	1.05	
<b>DRO &gt;C10-C28</b>	<b>550</b>	10.0	08/25/2015	ND	198	98.8	200	1.17	

Surrogate: 1-Chlorooctane 123 % 47.2-157

Surrogate: 1-Chlorooctadecane 84.3 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG OPERATING  
 LUPE CARRASCO  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 08/21/2015  
 Reported: 08/27/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/19/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Judy Garcia

**Sample ID: B2 8 (H502222-02)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	0.055	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.4 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	190	95.0	200	1.05	
DRO >C10-C28	28.6	10.0	08/25/2015	ND	198	98.8	200	1.17	

Surrogate: 1-Chlorooctane 92.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 77.9 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 9 (H502222-03)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.100	0.100	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	0.336	0.100	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	4.36	0.300	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	4.70	0.600	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.6 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	186	10.0	08/25/2015	ND	190	95.0	200	1.05	
DRO >C10-C28	322	10.0	08/25/2015	ND	198	98.8	200	1.17	

Surrogate: 1-Chlorooctane 106 % 47.2-157

Surrogate: 1-Chlorooctadecane 80.6 % 52.1-176

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 10 (H502222-04)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04		
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26		
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93		
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60		
Total BTEX	<0.300	0.300	08/26/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.1 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	190	95.0	200	1.05	
DRO >C10-C28	28.2	10.0	08/25/2015	ND	198	98.8	200	1.17	

Surrogate: 1-Chlorooctane 89.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 79.6 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 11 (H502222-05)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04		
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26		
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93		
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60		
Total BTEX	<0.300	0.300	08/26/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.1 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/25/2015	ND	193	96.5	200	1.10		
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	99.2	200	1.84		

Surrogate: 1-Chlorooctane 89.5 % 47.2-157

Surrogate: 1-Chlorooctadecane 84.7 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONEReceived: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVENSampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia**Sample ID: B2 12 (H502222-06)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.5 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	193	96.5	200	1.10	
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	99.2	200	1.84	

Surrogate: 1-Chlorooctane 82.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 86.9 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

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

**(575) 393-2326 FAX (575) 393-2476**  
**COG Operating LLC**

#54



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

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August 27, 2015

LUPE CARRASCO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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	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:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 15' (H502221-01)**

BTEX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04		
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26		
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93		
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60		
Total BTEX	<0.300	0.300	08/26/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.3 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	08/25/2015	ND	190	95.0	200	1.05		
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	98.8	200	1.17		

Surrogate: 1-Chlorooctane 80.9 % 47.2-157

Surrogate: 1-Chlorooctadecane 76.9 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 18 (H502221-02)**

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.7 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	190	95.0	200	1.05	
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	98.8	200	1.17	

Surrogate: 1-Chlorooctane 81.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 75.1 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 23 (H502221-03)**

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.0 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	190	95.0	200	1.05	
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	98.8	200	1.17	

Surrogate: 1-Chlorooctane 81.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.3 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 25 (H502221-04)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	190	95.0	200	1.05	
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	98.8	200	1.17	

Surrogate: 1-Chlorooctane 79.9 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.7 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

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



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: COG Operating LLC

Project Manager: Lupe Carrasco

Address: 2208 West Main

City: Artesia

State: NM

Zip

88210

Phone #: (575) 748-6940

Fax #:

Project #:

Project Owner:

Project Name: State 11 Com #1

Project Location:

Sampler Name: Lupe Carrasco

FOR LAB USE ONLY

## BILL TO

P.O. #:

Company: COG Operating LLC

Attn: Robert McNeill

Address: 600 W Illinois

City: Midland

State: TX Zip: 79701

Phone #: (432) 221-0388

Fax #:

## ANALYSIS REQUEST

Lab I.D.

Sample I.D.

H502221

1 15'  
2 18  
3 23  
4 25

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

BTEX

TPH

Chloride

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:

Date:

8/20/15

Time: 5:00pm

Received By:

8/21/15

Time: 11:07

Relinquished By:

Date:

8/21/15

Time: 11:07

Received By:

8/21/15

Time: 11:07

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

FORM-006 R 2.0

Sample Condition

Cool ☐ Impact ☐

Yes ☐ No ☐

CHECKED BY:

(Initials)

Yes ☐ No ☐

Phone Result: ☐ Yes ☐ No

Fax Result: ☐ Yes ☐ No

REMARKS: gcarrrasco@concho.com

atrujillo@concho.com

+ Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



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

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August 27, 2015

LUPE CARRASCO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: STATE 11 COM #1

Enclosed are the results of analyses for samples received by the laboratory on 08/21/15 11:07.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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	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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONEReceived: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVENSampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia**Sample ID: B2 28' (H502220-01)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/24/2015	ND	190	95.0	200	1.05	
DRO >C10-C28	<10.0	10.0	08/24/2015	ND	198	98.8	200	1.17	

Surrogate: 1-Chlorooctane 75.7 % 47.2-157

Surrogate: 1-Chlorooctadecane 71.6 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 34' (H502220-02)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	190	95.0	200	1.05	
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	98.8	200	1.17	

Surrogate: 1-Chlorooctane 82.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 77.0 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG OPERATING  
 LUPE CARRASCO  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 08/21/2015  
 Reported: 08/27/2015  
 Project Name: STATE 11 COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 08/19/2015  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Judy Garcia

**Sample ID: B2 37' (H502220-03)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04		
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26		
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93		
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60		
Total BTEX	<0.300	0.300	08/26/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.0 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	190	95.0	200	1.05	
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	98.8	200	1.17	

Surrogate: 1-Chlorooctane 84.5 % 47.2-157

Surrogate: 1-Chlorooctadecane 80.0 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
LUPE CARRASCO  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 08/21/2015  
Reported: 08/27/2015  
Project Name: STATE 11 COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 08/19/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Judy Garcia

**Sample ID: B2 41' (H502220-04)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/26/2015	ND	1.99	99.5	2.00	4.04	
Toluene*	<0.050	0.050	08/26/2015	ND	1.85	92.6	2.00	3.26	
Ethylbenzene*	<0.050	0.050	08/26/2015	ND	1.97	98.4	2.00	1.93	
Total Xylenes*	<0.150	0.150	08/26/2015	ND	5.67	94.4	6.00	2.60	
Total BTEX	<0.300	0.300	08/26/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.8 % 85.6-137

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	08/25/2015	ND	190	95.0	200	1.05	
DRO >C10-C28	<10.0	10.0	08/25/2015	ND	198	98.8	200	1.17	

Surrogate: 1-Chlorooctane 82.8 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.2 % 52.1-176

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**Notes and Definitions**

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



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

**BILL TO**

**ANALYSIS REQUEST**

P.O. #:

Company: COG Operating LLC

Attn: Robert McNeill

Address: 600 W Illinois

City: Midland

State: TX Zip: 79701

Phone #: (432) 221-0388

Fax #:

Company Name: COG Operating LLC

Project Manager: Lupe Carrasco

Address: 2208 West Main

City: Artesia

Phone #: (575) 748-6940

Project #:

Project Name: Statelcom #1

Project Location:

Sampler Name: Lupe Carrasco

FOR LAB USE ONLY

Lab I.D. Sample I.D.

H50222D

28' 28' 34' 37' 41' 41'

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

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Relinquished By:

Relinquished By:

Date: 8/20/15  
Time: 5:00 pm

Received By:

Sample Condition  
☐ Yes ☒ No

CHECKED BY:

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

Fax Result: ☐ Yes ☐ No Add'l Fax #:

REMARKS: gcastrasco@concho.com

atruijillo@concho.com

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

FORM-006 R 2.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

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	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-230-0077
Facility Name: STATE 11 COM #001	Facility Type: Battery

Surface Owner: State	Mineral Owner:	API No. 30-015-27916
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#### LOCATION OF RELEASE

Unit Letter I	Section 11	Township 19S	Range 28E	Feet from the 2310	North/South Line South	Feet from the 660	East/West Line East	County Eddy
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Latitude 32.6744804 Longitude -104.1410294

#### NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 80 bbls oil	Volume Recovered: 80 bbls oil
Source of Release: Hole in tank	Date and Hour of Occurrence: 7/15/2015 11:34 am	Date and Hour of Discovery: 7/15/2015 11:34 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher - NMOCD	
By Whom? Amanda Trujillo	Date and Hour: 7/17/2015 3:57 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.\*

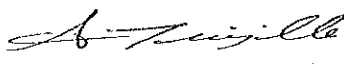
Describe Cause of Problem and Remedial Action Taken.\*

This release was caused by a hole in the tank.

Describe Area Affected and Cleanup Action Taken.\*

The release was contained within the bermed area. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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: 	<u>OIL CONSERVATION DIVISION</u>		
Printed Name: Amanda Trujillo	Approved by Environmental Specialist:		
Title: Senior Environmental Coordinator	Approval Date:	Expiration Date:	
E-mail Address: atrujillo@concho.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 7/29/2015 Phone: 575-748-6940			

\* Attach Additional Sheets If Necessary