



**RECEIVED**

By OCD District 1 at 11:50 am, May 26, 2015

**Garrett B. Merket**  
Environmental Coordinator

May 21, 2015

Oil Conservation Division  
District 2 – Artesia  
811 S. First St.  
Artesia, NM 88210

**NOT APPROVED**

**Re: WBP Federal Com #1**  
**30-025-35296**  
**Sec. 8, T19S-R32E**  
**Lea County, NM**

The workplan is not approved. Additional work is required.

1. Further delineation is required. There should be a least two samples that are below regulated standards.
2. There needs to be at a minimum two additional sample points between S4 and S5.
3. Provide rationale why the S1-S3 are non-detects.

Dr. Tomas Oberding,

COG Operating LLC would like to submit for your consideration the enclosed work plan for the above captioned well. The plan is in response to the C-141 Initial report dated October 28, 2014.

### **Background**

The release was caused by a produced water tank that overflowed. The initial release consisted of approximately 20 barrels of oil and 350 barrels of produced water which 12 barrels of oil and 330 barrels of produced water were recovered. The release impacted inside the battery facility and the nearby pasture. The impacted area in the pasture is approximately 30' by 100'. A crew was dispatched to dispose of impacted soil within the facility.

### **Groundwater**

Based on the Chevron Trend Maps, the release area would be classified at a site ranking of Zero due to the depth of groundwater at approximately 400'. No well information could be found for Section 8.

### **Soil Assessment and Analytical Results**

Initial soil samples were taken on 11-18-14 within the battery facility on the pad. Approximate locations are depicted on the attached Site Diagram as S1, S2, S3, and S4. Additional soil samples were taken on 1/15/2015 in the impacted pasture with approximate locations shown as S5, S6, S7, and S8.

#### **CORPORATE ADDRESS**

One Concho Center | 600 West Illinois Avenue | Midland, Texas 79701  
PHONE 432.683.7443 | FAX 432.683.7441

#### **LOCAL ADDRESS**

Concho West | 2208 Main Street | Artesia, New Mexico 88210  
PHONE 575.748.6940 | FAX 575.746.2096

Sample results indicated BTEX and TPH levels are non-detect within the bermed facility, with chloride levels favorable for future surface reclamation (S1-S3).

Sample results for the pad (S4) indicate TPH and BTEX levels to be non-detect with chloride levels slightly elevated.

Chloride levels for sample points S5-S8 are within tolerable levels for surface reclamation.

TPH and BTEX levels:

- S5 – Within RRAL's
- S6 – TPH is elevated to a depth of 1' with BTEX elevated to a depth of 3'
- S7 – TPH and BTEX are elevated to a depth of 1'
- S8 – TPH and BTEX are elevated to a depth of 4'

## Work Plan

COG proposes the excavation of the following sample areas:

**S1-S3** – No further remediation needed

**S4** – Will be remediated at the time of abandonment

**S5** – Light Scrape

**S6** – Excavate to a depth of 3.5' and haul for disposal

**S7** – Excavate to a depth of 1.5' and haul for disposal

**S8** – Excavate to a depth of 4.5' and haul for disposal

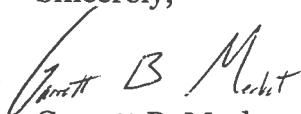
Site Ranking: 0

Depth to GW per SEO: 400'

S1	GRO	DRO	TPH	BTEX	Cl-
1'	ND	ND	ND	ND	480
2'	NA	NA	NA	NA	352
S2	GRO	DRO	TPH	BTEX	Cl-
1'	ND	ND	ND	ND	208
2'	NA	NA	NA	NA	224
S3	GRO	DRO	TPH	BTEX	Cl-
1'	ND	ND	ND	ND	272
2'	NA	NA	NA	NA	432
S4	GRO	DRO	TPH	BTEX	Cl-
1'	ND	ND	ND	ND	1920
2'	NA	NA	NA	NA	2520
3'	NA	NA	NA	NA	272
S5	GRO	DRO	TPH	BTEX	Cl-
1'	279	1320	1599	29.8	128
2'	61.4	364	425.4	5.79	112
3'	ND	ND	ND	ND	416
S6	GRO	DRO	TPH	BTEX	Cl-
1'	5960	14300	20260	486	112
2'	52.3	214	266.3	12.6	240
3'	591	1860	2451	114	464
4'	ND	301	301	0.362	160
S7	GRO	DRO	TPH	BTEX	Cl-
1'	9220	20100	29320	1070	80
2'	15	68.4	83.4	0.604	256
3'	ND	228	228	ND	1200
4'	NA	NA	NA	NA	400
S8	GRO	DRO	TPH	BTEX	Cl-
1'	6380	15300	21680	647	176
2'	1460	3740	5200	178	544
3'	1440	4160	5600	171	512
4'	1550	4930	6480	166	416
5'	ND	136	136	ND	NA

If there are no objections or further stipulations, COG Operating LLC would like to begin the remediation process based on approval of this work plan. Please feel free to contact me with any questions or concerns at (432) 234-0490.

Sincerely,

A handwritten signature in black ink, appearing to read "Garrett B. Merket". The signature is stylized with a large "G" and "M".

Garrett B. Merket

Environmental Coordinator

Enclosed

- (1) C-141 Initial
- (2) Site Diagram and Summary Table
- (3) Laboratory Analysis

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: WBP Federal Com #1	Facility Type: Battery	
Surface Owner: Federal	Mineral Owner: Federal	API No. 30-025-35296

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	8	19S	32E	660	South	660	West	Lea

Latitude 32.6695499004105 Longitude -103.79484918328

### NATURE OF RELEASE

Type of Release: Oil & Produced Water	Volume of Release: 20 bbls Oil; 350 bbls PW	Volume Recovered: 12 bbls Oil; 330 bbls PW
Source of Release: Water tank	Date and Hour of Occurrence: 10/28/2014 11:30 am	Date and Hour of Discovery: 10/28/2014 11:30 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Tomas Oberding - NMOCD / Jeffery Robertson - BLM	
By Whom? Lupe Carrasco	Date and Hour: 10/29/2014 9:09 am	
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 water tank overflow. Vacuum trucks were dispatched to pick up all standing fluids and dispose of at an NMOCD approved facility.

Describe Area Affected and Cleanup Action Taken.\*

The impacted area 30'x100' in front of the battery to the southeast. 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: 	<b>OIL CONSERVATION DIVISION</b>		
Printed Name: Amanda Trujillo	Approved by Environmental Specialist:		
Title: Senior Environmental Coordinator	Approval Date:	Expiration Date:	
E-mail Address: <a href="mailto:atrujillo@concho.com">atrujillo@concho.com</a>	Conditions of Approval:		Attached <input type="checkbox"/>
Date: November 11, 2014 Phone: 575-748-6940			

\* Attach Additional Sheets If Necessary



# WBP Federal Com #1

Section 8, T19S-R32E  
Released: 20 B/O; 350 B/PW  
Recovered: 12 B/O; 330 B/PW

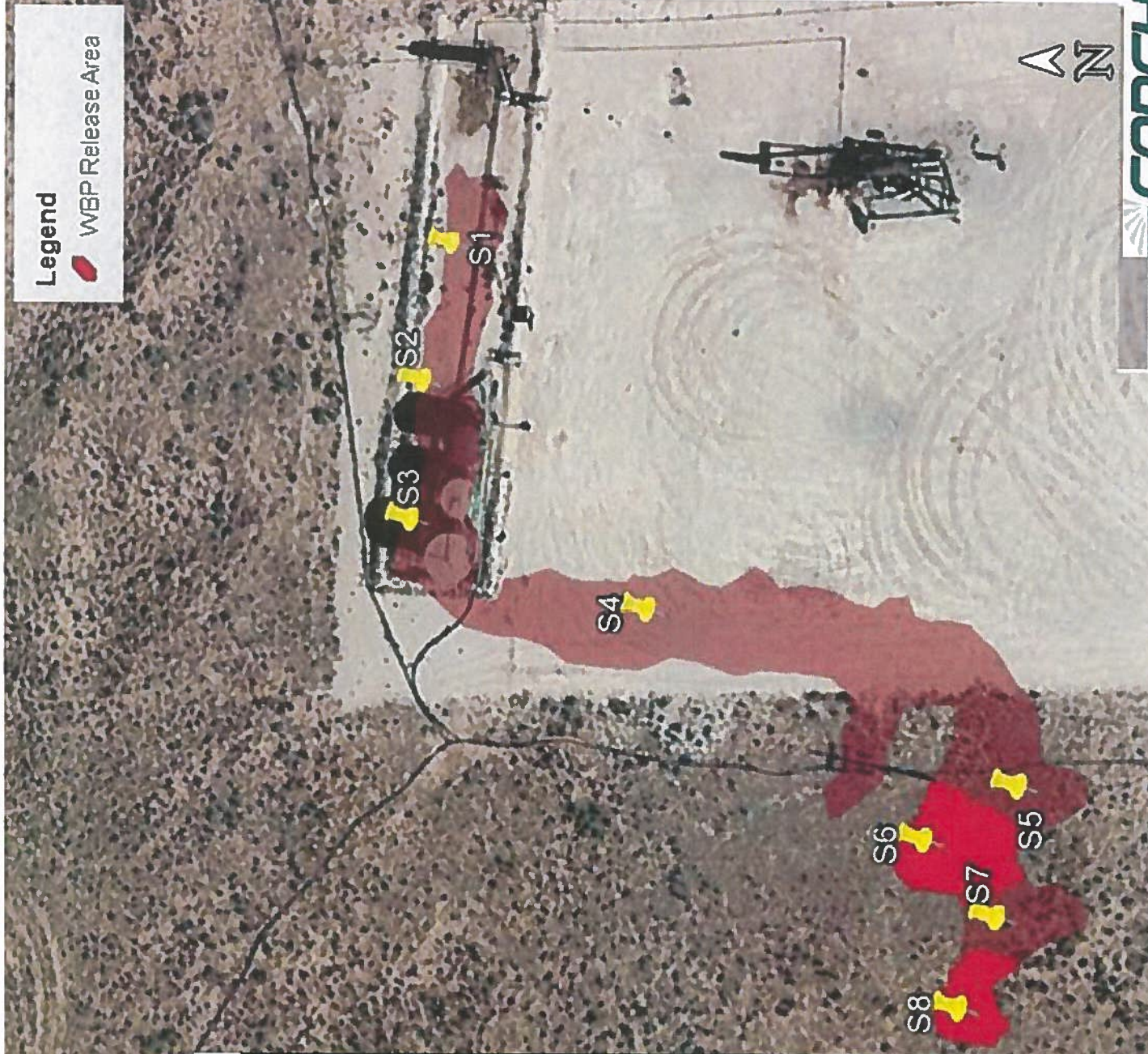
## Legend

WBP Release Area

Site Ranking: 0							
Depth to GW per SEO: 400'							
S1	GRO	DRO	TPH	BTEX	CI-		
1'	ND	ND	ND	ND	480		
2'	NA	NA	NA	NA	352		
S2	GRO	DRO	TPH	BTEX	CI-		
1'	ND	ND	ND	ND	208		
2'	NA	NA	NA	NA	224		
S3	GRO	DRO	TPH	BTEX	CI-		
1'	ND	ND	ND	ND	272		
2'	NA	NA	NA	NA	432		
S4	GRO	DRO	TPH	BTEX	CI-		
1'	ND	ND	ND	ND	1920		
2'	NA	NA	NA	NA	2520		
3'	NA	NA	NA	NA	272		
S5	GRO	DRO	TPH	BTEX	CI-		
1'	279	1320	1599	29.8	128		
2'	61.4	364	425.4	5.79	112		
3'	ND	ND	ND	ND	416		
S6	GRO	DRO	TPH	BTEX	CI-		
1'	5960	14300	20260	486	112		
2'	52.3	214	266.3	12.6	240		
3'	591	1860	2451	114	464		
4'	ND	301	301	0.362	160		
S7	GRO	DRO	TPH	BTEX	CI-		
1'	9220	20100	29320	1070	80		
2'	15	68.4	83.4	0.604	256		
3'	ND	228	228	ND	1200		
4'	NA	NA	NA	NA	400		
S8	GRO	DRO	TPH	BTEX	CI-		
1'	6380	15300	21680	647	176		
2'	1460	3740	5200	178	544		
3'	1440	4160	5600	171	512		
4'	1550	4930	6480	166	416		
5'	ND	136	136	ND	NA		

Google earth

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November 18, 2014

GARRETT MERKET

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: WBP FEDERAL COM #1

Enclosed are the results of analyses for samples received by the laboratory on 11/13/14 10:55.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/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  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 11/13/2014  
Reported: 11/18/2014  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 11/12/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Kathy Perez

**Sample ID: S1 - 1' (H403500-01)**

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	11/17/2014	ND	1.83	91.3	2.00	6.10	
Toluene*	<0.050	0.050	11/17/2014	ND	1.77	88.4	2.00	5.96	
Ethylbenzene*	<0.050	0.050	11/17/2014	ND	1.71	85.3	2.00	7.07	
Total Xylenes*	<0.150	0.150	11/17/2014	ND	5.12	85.3	6.00	7.69	
Total BTEX	<0.300	0.300	11/17/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 98.8 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	11/14/2014	ND	400	100	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	11/14/2014	ND	186	92.8	200	0.855	
DRO >C10-C28	<10.0	10.0	11/14/2014	ND	188	94.1	200	1.14	


Surrogate: 1-Chlorooctane 113 % 47.2-157

Surrogate: 1-Chlorooctadecane 127 % 52.1-176

**Cardinal Laboratories**

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 11/13/2014  
Reported: 11/18/2014  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 11/12/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Kathy Perez

**Sample ID: S1 - 2' (H403500-02)**

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	11/17/2014	ND	1.83	91.3	2.00	6.10		
Toluene*	<0.050	0.050	11/17/2014	ND	1.77	88.4	2.00	5.96		
Ethylbenzene*	<0.050	0.050	11/17/2014	ND	1.71	85.3	2.00	7.07		
Total Xylenes*	<0.150	0.150	11/17/2014	ND	5.12	85.3	6.00	7.69		
Total BTX	<0.300	0.300	11/17/2014	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 96.4 % 61-154

Chloride, SM4500Cl-B			mg/kg							Analyzed By: AP	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Chloride	352	16.0	11/14/2014	ND	400	100	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	11/14/2014	ND	187	93.7	200	3.04			
DRO >C10-C28	<10.0	10.0	11/14/2014	ND	191	95.6	200	4.30			

Surrogate: 1-Chlorooctane 115 % 47.2-157

Surrogate: 1-Chlorooctadecane 124 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 COG OPERATING  
 GARRETT MERKET  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 11/13/2014  
 Reported: 11/18/2014  
 Project Name: WBP FEDERAL COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 11/12/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Kathy Perez

**Sample ID: S2 - 1' (H403500-03)**

BTEX 80218			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/17/2014	ND	1.83	91.3	2.00	6.10	
Toluene*	<0.050	0.050	11/17/2014	ND	1.77	88.4	2.00	5.96	
Ethylbenzene*	<0.050	0.050	11/17/2014	ND	1.71	85.3	2.00	7.07	
Total Xylenes*	<0.150	0.150	11/17/2014	ND	5.12	85.3	6.00	7.69	
Total BTEX	<0.300	0.300	11/17/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 99.0 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	11/14/2014	ND	400	100	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	11/14/2014	ND	187	93.7	200	3.04	
DRO >C10-C28	<10.0	10.0	11/14/2014	ND	191	95.6	200	4.30	


Surrogate: 1-Chlorooctane 116 % 47.2-157

Surrogate: 1-Chlorooctadecane 129 % 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  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 11/13/2014  
Reported: 11/18/2014  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 11/12/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Kathy Perez

**Sample ID: S2 - 2' (H403500-04)**

BTEX 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/17/2014	ND	1.83	91.3	2.00	6.10	
Toluene*	<0.050	0.050	11/17/2014	ND	1.77	88.4	2.00	5.96	
Ethylbenzene*	<0.050	0.050	11/17/2014	ND	1.71	85.3	2.00	7.07	
Total Xylenes*	<0.150	0.150	11/17/2014	ND	5.12	85.3	6.00	7.69	
Total BTEX	<0.300	0.300	11/17/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 98.6 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	11/14/2014	ND	400	100	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	11/14/2014	ND	187	93.7	200	3.04	
DRO >C10-C28	<10.0	10.0	11/14/2014	ND	191	95.6	200	4.30	

Surrogate: 1-Chlorooctane 112 % 47.2-157

Surrogate: 1-Chlorooctadecane 122 % 52.1-176

**Cardinal Laboratories**

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 11/13/2014  
Reported: 11/18/2014  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 11/12/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Kathy Perez

**Sample ID: S3 - 1' (H403500-05)**

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	11/17/2014	ND	1.83	91.4	2.00	8.21		
Toluene*	<0.050	0.050	11/17/2014	ND	1.76	88.2	2.00	6.70		
Ethylbenzene*	<0.050	0.050	11/17/2014	ND	1.75	87.4	2.00	6.66		
Total Xylenes*	<0.150	0.150	11/17/2014	ND	5.27	87.9	6.00	6.78		
Total BTX	<0.300	0.300	11/17/2014	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 97.3 % 61-154

Chloride, SM4500Cl-B			mg/kg							Analyzed By: AP	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Chloride	272	16.0	11/14/2014	ND	400	100	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	11/14/2014	ND	187	93.7	200	3.04			
DRO >C10-C28	<10.0	10.0	11/14/2014	ND	191	95.6	200	4.30			

Surrogate: 1-Chlorooctane 112 % 47.2-157

Surrogate: 1-Chlorooctadecane 125 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 11/13/2014  
Reported: 11/18/2014  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 11/12/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Kathy Perez

**Sample ID: S3 - 2' (H403500-06)**

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	11/17/2014	ND	1.83	91.4	2.00	8.21	
Toluene*	<0.050	0.050	11/17/2014	ND	1.76	88.2	2.00	6.70	
Ethylbenzene*	<0.050	0.050	11/17/2014	ND	1.75	87.4	2.00	6.66	
Total Xylenes*	<0.150	0.150	11/17/2014	ND	5.27	87.9	6.00	6.78	
Total BTX	<0.300	0.300	11/17/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 97.6 % 61-154

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	11/14/2014	ND	400	100	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	11/14/2014	ND	187	93.7	200	3.04	
DRO >C10-C28	<10.0	10.0	11/14/2014	ND	191	95.6	200	4.30	

Surrogate: 1-Chlorooctane 116 % 47.2-157

Surrogate: 1-Chlorooctadecane 129 % 52.1-176

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 11/13/2014  
Reported: 11/18/2014  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 11/12/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Kathy Perez

**Sample ID: S4 - 1' (H403500-07)**

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	11/17/2014	ND	1.83	91.4	2.00	8.21	
Toluene*	<0.050	0.050	11/17/2014	ND	1.76	88.2	2.00	6.70	
Ethylbenzene*	<0.050	0.050	11/17/2014	ND	1.75	87.4	2.00	6.66	
Total Xylenes*	<0.150	0.150	11/17/2014	ND	5.27	87.9	6.00	6.78	
Total BTEX	<0.300	0.300	11/17/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 98.3 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1920	16.0	11/14/2014	ND	400	100	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	11/14/2014	ND	187	93.7	200	3.04	
DRO >C10-C28	<10.0	10.0	11/14/2014	ND	191	95.6	200	4.30	

Surrogate: 1-Chlorooctane 110 % 47.2-157

Surrogate: 1-Chlorooctadecane 120 % 52.1-176

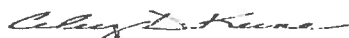
**Sample ID: S4 - 2' (H403500-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2520	16.0	11/14/2014	ND	400	100	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager


**Analytical Results For:**COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONEReceived: 11/13/2014  
Reported: 11/18/2014  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVENSampling Date: 11/12/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Kathy Perez**Sample ID: S4 - 3' (H403500-09)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	11/14/2014	ND	400	100	400	0.00	

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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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**Cardinal Laboratories**

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---

Celey D. Keene, Lab Director/Quality Manager



**Company Name:** COG Operating LLC

**Address:** 2208 West Main

Zip 88210

Project Owner:

**State:** TX

Phone #: (432) 221-0388

Fax # \_\_\_\_\_

**MATRIX**

**PRESERV**

## SAMPLING

**Sample I.D.**

51-1'

51-1'

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**PLEASE NOTE:** Liberty 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 services. 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 services.

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Date: 11/2/14

Date: 11/2/14

Received By:

Received By:

1. مقدمة

1. مقدمة

10

10

Delivered By: (Circle One)

Figure 1. The effect of the concentration of the solution on the adsorption of the dye. The concentration of the solution was 0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.0, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3.0, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 5.0, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 7.0, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 9.0, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 10.0, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.9, 11.0, 11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9, 12.0, 12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.7, 12.8, 12.9, 13.0, 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8, 13.9, 14.0, 14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 14.7, 14.8, 14.9, 15.0, 15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7, 15.8, 15.9, 16.0, 16.1, 16.2, 16.3, 16.4, 16.5, 16.6, 16.7, 16.8, 16.9, 17.0, 17.1, 17.2, 17.3, 17.4, 17.5, 17.6, 17.7, 17.8, 17.9, 18.0, 18.1, 18.2, 18.3, 18.4, 18.5, 18.6, 18.7, 18.8, 18.9, 19.0, 19.1, 19.2, 19.3, 19.4, 19.5, 19.6, 19.7, 19.8, 19.9, 20.0, 20.1, 20.2, 20.3, 20.4, 20.5, 20.6, 20.7, 20.8, 20.9, 21.0, 21.1, 21.2, 21.3, 21.4, 21.5, 21.6, 21.7, 21.8, 21.9, 22.0, 22.1, 22.2, 22.3, 22.4, 22.5, 22.6, 22.7, 22.8, 22.9, 23.0, 23.1, 23.2, 23.3, 23.4, 23.5, 23.6, 23.7, 23.8, 23.9, 24.0, 24.1, 24.2, 24.3, 24.4, 24.5, 24.6, 24.7, 24.8, 24.9, 25.0, 25.1, 25.2, 25.3, 25.4, 25.5, 25.6, 25.7, 25.8, 25.9, 26.0, 26.1, 26.2, 26.3, 26.4, 26.5, 26.6, 26.7, 26.8, 26.9, 27.0, 27.1, 27.2, 27.3, 27.4, 27.5, 27.6, 27.7, 27.8, 27.9, 28.0, 28.1, 28.2, 28.3, 28.4, 28.5, 28.6, 28.7, 28.8, 28.9, 29.0, 29.1, 29.2, 29.3, 29.4, 29.5, 29.6, 29.7, 29.8, 29.9, 30.0, 30.1, 30.2, 30.3, 30.4, 30.5, 30.6, 30.7, 30.8, 30.9, 31.0, 31.1, 31.2, 31.3, 31.4, 31.5, 31.6, 31.7, 31.8, 31.9, 32.0, 32.1, 32.2, 32.3, 32.4, 32.5, 32.6, 32.7, 32.8, 32.9, 33.0, 33.1, 33.2, 33.3, 33.4, 33.5, 33.6, 33.7, 33.8, 33.9, 34.0, 34.1, 34.2, 34.3, 34.4, 34.5, 34.6, 34.7, 34.8, 34.9, 35.0, 35.1, 35.2, 35.3, 35.4, 35.5, 35.6, 35.7, 35.8, 35.9, 36.0, 36.1, 36.2, 36.3, 36.4, 36.5, 36.6, 36.7, 36.8, 36.9, 37.0, 37.1, 37.2, 37.3, 37.4, 37.5, 37.6, 37.7, 37.8, 37.9, 38.0, 38.1, 38.2, 38.3, 38.4, 38.5, 38.6, 38.7, 38.8, 38.9, 39.0, 39.1, 39.2, 39.3, 39.4, 39.5, 39.6, 39.7, 39.8, 39.9, 40.0, 40.1, 40.2, 40.3, 40.4, 40.5, 40.6, 40.7, 40.8, 40.9, 41.0, 41.1, 41.2, 41.3, 41.4, 41.5, 41.6, 41.7, 41.8, 41.9, 42.0, 42.1, 42.2, 42.3, 42.4, 42.5, 42.6, 42.7, 42.8, 42.9, 43.0, 43.1, 43.2, 43.3, 43.4, 43.5, 43.6, 43.7, 43.8, 43.9, 44.0, 44.1, 44.2, 44.3, 44.4, 44.5, 44.6, 44.7, 44.8, 44.9, 45.0, 45.1, 45.2, 45.3, 45.4, 45.5, 45.6, 45.7, 45.8, 45.9, 46.0, 46.1, 46.2, 46.3, 46.4, 46.5, 46.6, 46.7, 46.8, 46.9, 47.0, 47.1, 47.2, 47.3, 47.4, 47.5, 47.6, 47.7, 47.8, 47.9, 48.0, 48.1, 48.2, 48.3, 48.4, 48.5, 48.6, 48.7, 48.8, 48.9, 49.0, 49.1, 49.2, 49.3, 49.4, 49.5, 49.6, 49.7, 49.8, 49.9, 50.0, 50.1, 50.2, 50.3, 50.4, 50.5, 50.6, 50.7, 50.8, 50.9, 51.0, 51.1, 51.2, 51.3, 51.4, 51.5, 51.6, 51.7, 51.8, 51.9, 52.0, 52.1, 52.2, 52.3, 52.4, 52.5, 52.6, 52.7, 52.8, 52.9, 53.0, 53.1, 53.2, 53.3, 53.4, 53.5, 53.6, 53.7, 53.8, 53.9, 54.0, 54.1, 54.2, 54.3, 54.4, 54.5, 54.6, 54.7, 54.8, 54.9, 55.0, 55.1, 55.2, 55.3, 55.4, 55.5, 55.6, 55.7, 55.8, 55.9, 56.0, 56.1, 56.2, 56.3, 56.4, 56.5, 56.6, 56.7, 56.8, 56.9, 57.0, 57.1, 57.2, 57.3, 57.4, 57.5, 57.6, 57.7, 57.8, 57.9, 58.0, 58.1, 58.2, 58.3, 58.4, 58.5, 58.6, 58.7, 58.8, 58.9, 59.0, 59.1, 59.2, 59.3, 59.4, 59.5, 59.6, 59.7, 59.8, 59.9, 60.0, 60.1, 60.2, 60.3, 60.4, 60.5, 60.6, 60.7, 60.8, 60.9, 61.0, 61.1, 61.2, 61.3, 61.4, 61.5, 61.6, 61.7, 61.8, 61.9, 62.0, 62.1, 62.2, 62.3, 62.4, 62.5, 62.6, 62.7, 62.8, 62.9, 63.0, 63.1, 63.2, 63.3, 63.4, 63.5, 63.6, 63.7, 63.8, 63.9, 64.0, 64.1, 64.2, 64.3, 64.4, 64.5, 64.6, 64.7, 64.8, 64.9, 65.0, 65.1, 65.2, 65.3, 65.4, 65.5, 65.6, 65.7, 65.8, 65.9, 66.0, 66.1, 66.2, 66.3, 66.4, 66.5, 66.6, 66.7, 66.8, 66.9, 67.0, 67.1, 67.2, 67.3, 67.4, 67.5, 67.6, 67.7, 67.8, 67.9, 68.0, 68.1, 68.2, 68.3, 68.4, 68.5, 68.6, 68.7, 68.8, 68.9, 69.0, 69.1, 69.2, 69.3, 69

Sam

Sam

**Sampler - UPS - Bus - Other:**

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



January 15, 2015

GARRETT MERKET

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: WBP FEDERAL COM #1

Enclosed are the results of analyses for samples received by the laboratory on 01/14/15 14:00.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/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,



Mike Snyder For Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S1 - 1' (H500136-01)**

8TEX 82608		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	01/15/2015	ND	2.08	104	2.00	9.99	
Toluene*	5.09	0.200	01/15/2015	ND	2.00	99.8	2.00	8.51	
Ethylbenzene*	8.11	0.200	01/15/2015	ND	2.00	99.9	2.00	7.99	
Total Xylenes*	16.5	0.600	01/15/2015	ND	6.25	104	6.00	7.82	
Total BTEX	29.8	1.20	01/15/2015	ND					

Surrogate: Dibromofluoromethane 108 % 80.8-114

Surrogate: Toluene-d8 97.9 % 83.7-121

Surrogate: 4-Bromofluorobenzene 155 % 57.9-154

Chloride, SM4500Cl-B			mg/kg				Analyzed By: AP		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M			mg/kg				Analyzed By: MS		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	279	50.0	01/15/2015	ND	212	106	200	1.46	
DRO >C10-C28	1320	50.0	01/15/2015	ND	201	101	200	5.51	

Surrogate: 1-Chlorooctane 125 % 47.2-157

Surrogate: 1-Chlorooctadecane 115 % 52.1-176

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S1 - 2' (H500136-02)**

BTEX B2608		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2015	ND	2.08	104	2.00	9.99	
Toluene*	0.962	0.050	01/15/2015	ND	2.00	99.8	2.00	8.51	
Ethylbenzene*	1.53	0.050	01/15/2015	ND	2.00	99.9	2.00	7.99	
Total Xylenes*	3.27	0.150	01/15/2015	ND	6.25	104	6.00	7.82	
Total BTEX	5.79	0.300	01/15/2015	ND					

Surrogate: Dibromofluoromethane 102 % 80.8-114

Surrogate: Toluene-d8 99.3 % 83.7-121

Surrogate: 4-Bromofluorobenzene 161 % 57.9-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	61.4	10.0	01/15/2015	ND	212	106	200	1.46	
DRO >C10-C28	364	10.0	01/15/2015	ND	201	101	200	5.51	

Surrogate: 1-Chlorooctane 107 % 47.2-157

Surrogate: 1-Chlorooctadecane 108 % 52.1-176

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S1 - 3' (H500136-03)**

BTEX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2015	ND	2.08	104	2.00	9.99	
Toluene*	<0.050	0.050	01/15/2015	ND	2.00	99.8	2.00	8.51	
Ethylbenzene*	<0.050	0.050	01/15/2015	ND	2.00	99.9	2.00	7.99	
Total Xylenes*	<0.150	0.150	01/15/2015	ND	6.25	104	6.00	7.82	
Total BTEX	<0.300	0.300	01/15/2015	ND					

Surrogate: Dibromofluoromethane 100 % 80.8-114

Surrogate: Toluene-d8 98.1 % 83.7-121

Surrogate: 4-Bromofluorobenzene 109 % 57.9-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/15/2015	ND	212	106	200	1.46	
DRO >C10-C28	<10.0	10.0	01/15/2015	ND	201	101	200	5.51	

Surrogate: 1-Chlorooctane 96.7 % 47.2-157

Surrogate: 1-Chlorooctadecane 100 % 52.1-176

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S2 - 1' (H500136-04)**

BTEX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>17.1</b>	5.00	01/15/2015	ND	2.08	104	2.00	9.99	
<b>Toluene*</b>	<b>175</b>	5.00	01/15/2015	ND	2.00	99.8	2.00	8.51	
<b>Ethylbenzene*</b>	<b>100</b>	5.00	01/15/2015	ND	2.00	99.9	2.00	7.99	
<b>Total Xylenes*</b>	<b>194</b>	15.0	01/15/2015	ND	6.25	104	6.00	7.82	
<b>Total BTEX</b>	<b>486</b>	30.0	01/15/2015	ND					

Surrogate: Dibromofluoromethane 104 % 80.8-114

Surrogate: Toluene-d8 98.2 % 83.7-121

Surrogate: 4-Bromofluorobenzene 115 % 57.9-154

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>112</b>	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>5960</b>	100	01/15/2015	ND	212	106	200	1.46		
<b>DRO &gt;C10-C28</b>	<b>14300</b>	100	01/15/2015	ND	201	101	200	5.51		

Surrogate: 1-Chlorooctane 223 % 47.2-157

Surrogate: 1-Chlorooctadecane 259 % 52.1-176

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S2 - 2' (H500136-05)**

BTEX 8260B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.340	0.050	01/15/2015	ND	2.08	104	2.00	9.99	
Toluene*	4.84	0.050	01/15/2015	ND	2.00	99.8	2.00	8.51	
Ethylbenzene*	2.02	0.050	01/15/2015	ND	2.00	99.9	2.00	7.99	
Total Xylenes*	5.42	0.150	01/15/2015	ND	6.25	104	6.00	7.82	
Total BTEX	12.6	0.300	01/15/2015	ND					

Surrogate: Dibromofluoromethane 102 % 80.8-114

Surrogate: Toluene-d8 109 % 83.7-121

Surrogate: 4-Bromofluorobenzene 213 % 57.9-154

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>240</b>	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M			mg/kg				Analyzed By: MS		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>52.3</b>	10.0	01/15/2015	ND	212	106	200	1.46	
<b>DRO &gt;C10-C28</b>	<b>214</b>	10.0	01/15/2015	ND	201	101	200	5.51	

Surrogate: 1-Chlorooctane 100 % 47.2-157

Surrogate: 1-Chlorooctadecane 103 % 52.1-176

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S2 - 3' (H500136-06)**

BTEX 8260B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	01/15/2015	ND	2.08	104	2.00	9.99	
Toluene*	29.9	0.500	01/15/2015	ND	2.00	99.8	2.00	8.51	
Ethylbenzene*	26.3	0.500	01/15/2015	ND	2.00	99.9	2.00	7.99	
Total Xylenes*	57.6	1.50	01/15/2015	ND	6.25	104	6.00	7.82	
Total BTEX	114	3.00	01/15/2015	ND					

Surrogate: Dibromofluoromethane 102 % 80.8-114

Surrogate: Toluene-d8 103 % 83.7-121

Surrogate: 4-Bromofluorobenzene 165 % 57.9-154

Chloride, SM4500Cl-B			mg/kg				Analyzed By: AP		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M			mg/kg				Analyzed By: MS		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	591	50.0	01/15/2015	ND	212	106	200	1.46	
DRO >C10-C28	1860	50.0	01/15/2015	ND	201	101	200	5.51	

Surrogate: 1-Chlorooctane 139 % 47.2-157

Surrogate: 1-Chlorooctadecane 123 % 52.1-176

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S2 - 4' (H500136-07)**

BTEX 8260B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2015	ND	2.08	104	2.00	9.99	
Toluene*	0.085	0.050	01/15/2015	ND	2.00	99.8	2.00	8.51	
Ethylbenzene*	0.078	0.050	01/15/2015	ND	2.00	99.9	2.00	7.99	
Total Xylenes*	0.196	0.150	01/15/2015	ND	6.25	104	6.00	7.82	
Total BTEX	0.362	0.300	01/15/2015	ND					

Surrogate: Dibromofluoromethane 104 % 80.8-114

Surrogate: Toluene-d8 95.9 % 83.7-121

Surrogate: 4-Bromofluorobenzene 122 % 57.9-154

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/15/2015	ND	212	106	200	1.46	
DRO >C10-C28	301	10.0	01/15/2015	ND	201	101	200	5.51	

Surrogate: 1-Chlorooctane 106 % 47.2-157

Surrogate: 1-Chlorooctadecane 107 % 52.1-176

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S3 - 1' (H500136-08)**

BTEX 82608		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>32.6</b>	10.0	01/15/2015	ND	2.08	104	2.00	9.99	
<b>Toluene*</b>	<b>392</b>	10.0	01/15/2015	ND	2.00	99.8	2.00	8.51	
<b>Ethylbenzene*</b>	<b>233</b>	10.0	01/15/2015	ND	2.00	99.9	2.00	7.99	
<b>Total Xylenes*</b>	<b>415</b>	30.0	01/15/2015	ND	6.25	104	6.00	7.82	
<b>Total BTEX</b>	<b>1070</b>	60.0	01/15/2015	ND					

Surrogate: Dibromofluoromethane 103 % 80.8-114

Surrogate: Toluene-d8 101 % 83.7-121

Surrogate: 4-Bromofluorobenzene 126 % 57.9-154

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	01/15/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>9220</b>	100	01/15/2015	ND	212	106	200	1.46	
<b>DRO &gt;C10-C28</b>	<b>20100</b>	100	01/15/2015	ND	201	101	200	5.51	

Surrogate: 1-Chlorooctane 261 % 47.2-157

Surrogate: 1-Chlorooctadecane 317 % 52.1-176

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S3 - 2' (H500136-09)**

BTEX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2015	ND	2.08	104	2.00	9.99	
Toluene*	0.252	0.050	01/15/2015	ND	2.00	99.8	2.00	8.51	
Ethylbenzene*	0.101	0.050	01/15/2015	ND	2.00	99.9	2.00	7.99	
Total Xylenes*	0.202	0.150	01/15/2015	ND	6.25	104	6.00	7.82	
Total BTEX	0.604	0.300	01/15/2015	ND					

Surrogate: Dibromofluoromethane 97.4 % 80.8-114

Surrogate: Toluene-d8 99.0 % 83.7-121

Surrogate: 4-Bromofluorobenzene 117 % 57.9-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	15.0	10.0	01/15/2015	ND	212	106	200	1.46	
DRO >C10-C28	68.4	10.0	01/15/2015	ND	201	101	200	5.51	

Surrogate: 1-Chlorooctane 108 % 47.2-157

Surrogate: 1-Chlorooctadecane 113 % 52.1-176

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COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S3 - 3' (H500136-10)**

BTEX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2015	ND	2.08	104	2.00	9.99	
Toluene*	<0.050	0.050	01/15/2015	ND	2.00	99.8	2.00	8.51	
Ethylbenzene*	<0.050	0.050	01/15/2015	ND	2.00	99.9	2.00	7.99	
Total Xylenes*	<0.150	0.150	01/15/2015	ND	6.25	104	6.00	7.82	
Total BTEX	<0.300	0.300	01/15/2015	ND					

Surrogate: Dibromofluoromethane 97.0 % 80.8-114

Surrogate: Toluene-d8 98.9 % 83.7-121

Surrogate: 4-Bromofluorobenzene 117 % 57.9-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1200	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/15/2015	ND	212	106	200	1.46	
DRO >C10-C28	228	10.0	01/15/2015	ND	201	101	200	5.51	

Surrogate: 1-Chlorooctane 108 % 47.2-157

Surrogate: 1-Chlorooctadecane 113 % 52.1-176

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 COG OPERATING  
 GARRETT MERKET  
 P. O. BOX 1630  
 ARTESIA NM, 88210  
 Fax To: NONE

 Received: 01/14/2015  
 Reported: 01/15/2015  
 Project Name: WBP FEDERAL COM #1  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 01/06/2015  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S4 - 1' (H500136-11)**

BTEX 8260B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>15.7</b>	5.00	01/15/2015	ND	2.08	104	2.00	9.99	
<b>Toluene*</b>	<b>230</b>	5.00	01/15/2015	ND	2.00	99.8	2.00	8.51	
<b>Ethylbenzene*</b>	<b>127</b>	5.00	01/15/2015	ND	2.00	99.9	2.00	7.99	
<b>Total Xylenes*</b>	<b>275</b>	15.0	01/15/2015	ND	6.25	104	6.00	7.82	
<b>Total BTEX</b>	<b>647</b>	30.0	01/15/2015	ND					

Surrogate: Dibromofluoromethane 104 % 80.8-114

Surrogate: Toluene-d8 100 % 83.7-121

Surrogate: 4-Bromofluorobenzene 136 % 57.9-154

Chloride, SM4500Cl-8		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>176</b>	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>6380</b>	100	01/15/2015	ND	212	106	200	1.46		
<b>DRO &gt;C10-C28</b>	<b>15300</b>	100	01/15/2015	ND	201	101	200	5.51		

Surrogate: 1-Chlorooctane 215 % 47.2-157

Surrogate: 1-Chlorooctadecane 257 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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 Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S4 - 2' (H500136-12)**

BTEX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>7.86</b>	1.00	01/15/2015	ND	2.08	104	2.00	9.99	
<b>Toluene*</b>	<b>69.5</b>	1.00	01/15/2015	ND	2.00	99.8	2.00	8.51	
<b>Ethylbenzene*</b>	<b>14.9</b>	1.00	01/15/2015	ND	2.00	99.9	2.00	7.99	
<b>Total Xylenes*</b>	<b>86.0</b>	3.00	01/15/2015	ND	6.25	104	6.00	7.82	
<b>Total BTEX</b>	<b>178</b>	6.00	01/15/2015	ND					

Surrogate: Dibromofluoromethane 100 % 80.8-114

Surrogate: Toluene-d8 104 % 83.7-121

Surrogate: 4-Bromofluorobenzene 143 % 57.9-154

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>544</b>	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>1460</b>	50.0	01/15/2015	ND	212	106	200	1.46		
<b>DRO &gt;C10-C28</b>	<b>3740</b>	50.0	01/15/2015	ND	201	101	200	5.51		

Surrogate: 1-Chlorooctane 168 % 47.2-157

Surrogate: 1-Chlorooctadecane 134 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S4 - 3' (H500136-13)**

BTEX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>2.69</b>	1.00	01/15/2015	ND	2.08	104	2.00	9.99	
<b>Toluene*</b>	<b>55.8</b>	1.00	01/15/2015	ND	2.00	99.8	2.00	8.51	
<b>Ethylbenzene*</b>	<b>23.6</b>	1.00	01/15/2015	ND	2.00	99.9	2.00	7.99	
<b>Total Xylenes*</b>	<b>88.7</b>	3.00	01/15/2015	ND	6.25	104	6.00	7.82	
<b>Total BTEX</b>	<b>171</b>	6.00	01/15/2015	ND					

Surrogate: Dibromofluoromethane 104 % 80.8-114

Surrogate: Toluene-d8 104 % 83.7-121

Surrogate: 4-Bromofluorobenzene 153 % 57.9-154

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>512</b>	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>1440</b>	50.0	01/15/2015	ND	212	106	200	1.46	
<b>DRO &gt;C10-C28</b>	<b>4160</b>	50.0	01/15/2015	ND	201	101	200	5.51	

Surrogate: 1-Chlorooctane 169 % 47.2-157

Surrogate: 1-Chlorooctadecane 135 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

COG OPERATING  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received: 01/14/2015  
Reported: 01/15/2015  
Project Name: WBP FEDERAL COM #1  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 01/06/2015  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S4 - 4' (H500136-14)**

BTEX 8260B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<1.00	1.00	01/15/2015	ND	2.08	104	2.00	9.99	
Toluene*	33.3	1.00	01/15/2015	ND	2.00	99.8	2.00	8.51	
Ethylbenzene*	42.5	1.00	01/15/2015	ND	2.00	99.9	2.00	7.99	
Total Xylenes*	89.9	3.00	01/15/2015	ND	6.25	104	6.00	7.82	
Total BTEX	166	6.00	01/15/2015	ND					

Surrogate: Dibromofluoromethane 103 % 80.8-114

Surrogate: Toluene-d8 99.9 % 83.7-121

Surrogate: 4-Bromofluorobenzene 150 % 57.9-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	01/15/2015	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	1550	50.0	01/15/2015	ND	212	106	200	1.46	
DRO >C10-C28	4930	50.0	01/15/2015	ND	201	101	200	5.51	

Surrogate: 1-Chlorooctane 144 % 47.2-157

Surrogate: 1-Chlorooctadecane 149 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For 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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Mike Snyder For 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

Company Name: COG Operating LLC		P.O. #:		BILL TO																							
Project Manager: Garrett Merkel		Company: COG Operating LLC		ANALYSIS REQUEST																							
Address: 2208 West Main		Attn: Robert McNeill																									
City: Artesia		Address: 600 W Illinois																									
Phone #: (575) 748-6940		City: Midland																									
Fax #: (575) 748-6940		State: TX Zip: 79701																									
Project #: WBP #1		Phone #: (432) 221-0388																									
Project Location:		Fax #:																									
Sampler Name: Garrett Merkel																											
FOR LAB USE ONLY		MATRIX		PRESERV		SAMPLING																					
Lab I.D.		Sample I.D.																									
H500130		(G)RAB OR (C)OMP.																									
1		S1-1'		G		X		1/6/14		X		BTEX		TPH		Chloride											
2		S1-2		G		X		1/6/14		X		X		X		X											
3		S1-3		G		X		1/6/14		X		X		X		X											
4		S2-1'		G		X		1/6/14		X		X		X		X											
5		S2-2		G		X		1/6/14		X		X		X		X											
6		S2-3		G		X		1/6/14		X		X		X		X											
7		S2-4		G		X		1/6/14		X		X		X		X											
8		S3-1'		G		X		1/6/14		X		X		X		X											
9		S3-2		G		X		1/6/14		X		X		X		X											
10		S3-3'		G		X		1/6/14		X		X		X		X											
<p>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 accidental 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.</p>																											
Relinquished By: <i>Ant 13</i>		Date: <i>1/4/14</i>		Received By: <i>Scotti Henderson</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:																			
Relinquished By: <i>Ant 13</i>		Time: <i>1:00</i>		Time: <i>1:00</i>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:																			
Date: <i>1/4/14</i>		Time: <i>1:00</i>		Time: <i>1:00</i>		REMARKS: <i>gcarrasco@concho.com</i>		REMARKS: <i>gcarrasco@concho.com</i>																			
Time: <i>1:00</i>		Time: <i>1:00</i>		Time: <i>1:00</i>		REMARKS: <i>altruillo@concho.com</i>		REMARKS: <i>altruillo@concho.com</i>																			
Delivered By: (Circle One)		Sample Condition		CHECKED BY: <i>Ant 13</i>		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																			
FORM 996 R 2.0		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>																			
Sampler - UPS - Bus - Other:		4.6e		4.6e		4.6e		4.6e																			
<p><i>if samples are in Cardinal's possession</i></p> <p><i>Samples from 100 ft H500046</i></p> <p><i>RVSH</i></p>																											



April 10, 2015

GARRETT MERKET

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: WEST BRUSHY 5 FEDERAL SWD #5

Enclosed are the results of analyses for samples received by the laboratory on 04/02/15 12:45.

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  
GARRETT MERKET  
P. O. BOX 1630  
ARTESIA NM, 88210  
Fax To: NONE

Received:	04/02/2015	Sampling Date:	04/01/2015
Reported:	04/10/2015	Sampling Type:	Soil
Project Name:	WEST BRUSHY 5 FEDERAL SWD #5	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S3-4' (H500889-01)**

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>400</b>	16.0	04/07/2015	ND	400	100	400	0.00	

**Sample ID: S4-5' (H500889-02)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.089</b>	0.050	04/08/2015	ND	2.09	105	2.00	2.49	
Toluene*	<0.050	0.050	04/08/2015	ND	1.92	96.2	2.00	2.57	
Ethylbenzene*	<0.050	0.050	04/08/2015	ND	1.90	95.2	2.00	3.58	
Total Xylenes*	<0.150	0.150	04/08/2015	ND	5.94	99.0	6.00	3.41	
Total BTEX	<0.300	0.300	04/08/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 112 % 61-154

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	04/07/2015	ND	196	98.2	200	3.87	
<b>DRO &gt;C10-C28</b>	<b>136</b>	10.0	04/07/2015	ND	217	109	200	5.33	

Surrogate: 1-Chlorooctane 107 % 47.2-157

Surrogate: 1-Chlorooctadecane 114 % 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

---

Cardinal Laboratories

\* = Accredited Analyte

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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

Company Name: COG Operating LLC		P.O. #:		BILL TO																																											
Project Manager: Garrett Market		Company: COG Operating LLC		ANALYSIS REQUEST																																											
Address: 2208 West Main		Attn: Robert McNeill																																													
City: Artesia		Address: 600 W Illinois																																													
Phone #: (575) 748-6940		City: Midland																																													
Fax #: (575) 748-6940		State: TX																																													
Project #: WBP		Zip: 79701																																													
Project Name: WBP		Phone #: (432) 221-0368																																													
Project Location:		Fax #:																																													
Sampler Name: Garrett Market																																															
FOR LAB USE ONLY																																															
Lab I.D. H50889		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE		ICE / COOL		OTHER :		DATE		TIME		BTX		TPH		Chloride													
S3-4		G		G		X		X		X		X		X		X		X		X		X		X		X		X		X		X															
S4-5		G		G		X		X		X		X		X		X		X		X		X		X		X		X		X		X															

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Relinquished By: [Signature]	Date: 4/1/15	Received By: [Signature]	Date: 4/1/15	Time: 12:40 PM	Time: 12:45	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #: [Blank]
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Relinquished By: [Signature]	Date: 4-8-15	Received By: [Signature]	Date: 4-8-15	Time: 12:45	Time: 12:45	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #: [Blank]
------------------------------	--------------	--------------------------	--------------	-------------	-------------	--	----------------------

Delivered By: (Circle One)	Sample Condition	CHECKED BY: [Signature]	REMARKS: [Blank]
FORM-986 R 2.0	Cool <input type="checkbox"/> Intact <input type="checkbox"/>	Intact <input type="checkbox"/>	
Sampler - UPS - Bus - Other:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Intact <input type="checkbox"/>	

0.40

#54