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Midland, TX 79703

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APPROVED
By Olivia Yu at 1:57 pm, Jul 09, 2018

NMOCD grants closure to 1RP-4942.

June 19, 2018

Olivia Yu
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 1
1625 French Drive
Hobbs, NM 88240

Ryan Mann
Hobbs Field Office
New Mexico State Land Office
2827 N. Dal Paso Suite 117
Hobbs, NM 88240

Re: **Remediation Summary and Closure Report**
Bobwhite 12 State Com #004H
API No. 30-025-41092
GPS: 32.5000725, -103.5330048
UL "D", Sec. 12, T21S, R33E
Lea Co, NM
NMOCD Ref. No. 1RP-4942

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG), has prepared this *Remediation Summary and Closure Report* for the release site known as the Bobwhite 12 State Com #004H. Details of the release are summarized below:

RELEASE DETAILS			
Type of Release: Produced Water	**Volume of Release:** 145 bbls Produced Water		
	Volume Recovered: 140 bbls Produced Water		
Source of Release: Stuffing box	**Date of Release:** 01/15/18	**Date of Discovery:**	01/15/18
Was Immediate Notice Given? Yes	**If YES, to Whom?** NMOCD District I/NMSLO		
Was a Watercourse Reached? No	**Volume Impacted the Watercourse:** Not Applicable		
Cause of Problem and Remedial Action Taken: The release was attributed the failure of the stuffing box.			

A Site Location Map is provided as Attachment #1. A copy of the initial Release Notification and Corrective Action (NMOCD Form C-141) is provided as Attachment #6.

REGULATORY FRAMEWORK

Crude oil facilities in New Mexico are generally regulated by the New Mexico Oil Conservation Division (NMOCD). Impact of soil due to a surface release is addressed in the NMOCD guidance document titled *Guidelines for Remediation of Leaks, Spills and Releases* , dated August 13, 1993.

The guidance document provides direction for initial response actions, site assessment, sampling procedures and provides a total ranking score based on the depth to groundwater, distance to private and domestic water sources, and the distance to the nearest surface water body as follows:

RANKING SCORE CRITERIA		
General Site Characteristics		**Score**
Depth to Groundwater	< 50 Feet	**20**
	50-99 Feet	**10**
	> 100 Feet	**0**
Well Head Protection Area, <1,000 Feet from water source, or <200 Feet from private domestic water source	Yes	**20**
	No	**0**
Distance to Surface Water Body	< 200 Feet	**20**
	200 - 1,000 Feet	**10**
	> 1,000 Feet	**0**

A search of a groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) was conducted to determine the average depth to groundwater within the Section and identify any registered water wells within 1,000 ft. of the release site. If none were identified, the approximate depth to groundwater was extrapolated from a Depth to Groundwater Map utilized by the NMOCD. The results of the groundwater database search are provided as Attachment #3.

TOTAL RANKING SCORE FOR SITE		
Ranking Score Criteria		**Score**
Depth to Groundwater	50-100 Feet	**10**
Well Head Protection Area, <1,000 Feet from water source, or <200 Feet from private domestic water source	No	**0**
Distance to Surface Water Body	> 1,000 Feet	**0**
TOTAL RANKING SCORE FOR SITE		**10**

The NMOCD guidelines indicated the Site has an initial ranking score of 10 points. The NMOCD Recommended Remediation Action Levels (RRAL) for a Site with a ranking score of 10 points are as follows:

RECOMMENDED REMEDIATION ACTION LEVELS	
Benzene	**10 mg/kg**
Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX)	**50 mg/kg**
Total Petroleum Hydrocarbons (TPH)	**1,000 mg/kg**
Chloride	**600 mg/kg**

INITIAL INVESTIGATION

On January 23, 2018 an initial soil investigations was conducted at the Site by COG representatives. During the initial soil investigation, eleven (11) representative soil samples were collected from within the affected area in an effort to determine the vertical extent of soil impacts. In addition, four (4) samples were collected from the edges of the release in an effort to determine the horizontal extent of soil impacts. The collected soil samples were submitted to an NMOCD-approved laboratory for analysis of chloride, benzene, BTEX, and/or TPH concentrations. A table summarizing laboratory analytical results from soil samples collected during the initial assessment is provided below:

Sample ID	Depth	Soil Status	SW 846-8021b		SW-846 8015M				E300
			Benzene	Total BTEX	TPH GRO C_6-C_{10}	TPH DRO C_{10}-C_{28}	TPH ORO C_{28}-C_{35}	TOTAL TPH C_6-C_{35}	CHLORIDE
T1	Surf.	In-Situ	<0.00198	<0.00198	<15.0	21.9	<15.0	21.9	364
T1	1'	In-Situ	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	-
T1	2'	In-Situ	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	-
T2	Surf.	In-Situ	<0.00199	<0.00199	<15.0	148	88.4	236	546
T2	1'	In-Situ	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	-
T2	2'	In-Situ	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	-
T3	Surf.	In-Situ	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	176
T4	Surf.	In-Situ	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	474
T4	1'	In-Situ	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	-
T5	Surf.	Excavated	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	**1,790**
T5	1'	In-Situ	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	112
North	Surf.	In-Situ	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	309
South	Surf.	In-Situ	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<5.00
East	Surf.	In-Situ	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	86.7
West	Surf.	In-Situ	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	339
NMOCD RRAL			**10**	**50**	**-**	**-**	**-**	**1,000**	**600**

Laboratory analytical reports are provided as Attachment #4.

PROPOSED REMEDIATION ACTIVITIES AND REMEDIATION WORKPLAN

Based on laboratory analytical results, site conditions and field observations made during the initial release assessment, COG proposed the following remediation activities designed to advance the Release Site toward an approved closure:

• Utilizing a backhoe, excavate the Release Site to a depth of approximately one (1) foot bgs in the area represented by soil samples collected from T5. The excavated soils will be stockpiled on a plastic liner adjacent to the excavation.
• Collect sidewall samples in all cardinal directions and analyze for total chlorides, in an effort to confirm that all of the impacted soil affected above the NMOCD Recommended Remedial Action Levels (RRAL's) has been removed. The impacted area is fully vertically delineated therefore confirmation samples would not be collected at the base of the excavation.
• On receipt of favorable analytical results (below NMOCD regulatory guidelines), the excavation will be backfilled with locally sourced, non-impacted "like" material.
• All excavated soil will be transported under manifest to a NMOCD approved disposal facility.
• Prepare and submit a “Remediation Summary and Site Closure Request” to the NMOCD and NMSLO.

The Workplan was subsequently approved.

SUMMARY OF FIELD ACTIVITIES

Impacted soil within the release margins was excavated to a depth of approximately one (1) ft. bgs in accordance with the approved workplan. Excavation soil was temporarily stockpiled on-site, atop an impermeable liner, pending final disposition. The sidewalls of the excavated area were advanced until the laboratory analytical results from confirmation soil samples indicated chloride concentrations were below the NMOCD RRAL. Upon excavating impacted soil from within the release margins, eight (8) confirmation soil samples were collected from the sidewalls of the excavated area. The collected soil samples were submitted to the laboratory for analysis of chloride concentrations. Stockpiled soil was transported to an NMOCD-approved disposal facility. A table summarizing laboratory analytical results from confirmation soil samples is provided below:

Sample ID	Depth	Soil Status	SW 846-8021b		SW-846 8015M				E300
			Benzene	Total BTEX	TPH GRO C_6-C_{10}	TPH DRO C_{10}-C_{28}	TPH ORO C_{28}-C_{35}	TOTAL TPH C_6-C_{35}	CHLORIDE
NSW 1	6"	In-Situ	-	-	-	-	-	-	168
NSW 2	6"	In-Situ	-	-	-	-	-	-	36.1
ESW 1	6"	In-Situ	-	-	-	-	-	-	52.6
ESW 2	6"	In-Situ	-	-	-	-	-	-	196
WSW 1	6"	In-Situ	-	-	-	-	-	-	365
WSW 2	6"	In-Situ	-	-	-	-	-	-	339
SSW 1	6"	In-Situ	-	-	-	-	-	-	208
SSW 2	6"	In-Situ	-	-	-	-	-	-	286
NMOCD RRAL			**10**	**50**	**-**	**-**	**-**	**1,000**	**600**

A "Site & Confirmation Sample Location Map" is provided as Attachment #2.

Upon receiving laboratory analytical results from confirmation soil samples, the excavated area was backfilled with locally sourced, non-impacted "like" material. A Photographic Log is provided as Attachment #5.

EXCAVATION/REMEDIATION DETAIL SUMMARY			
Type of Remediation:	Dig and Haul, backfill with imported, non-impacted "like" material.		
Date Remediation Activities Began:	May 8, 2018		
Excavation Dimensions:	**Length: 75 ft.**	**Width: 50 ft.**	**Depth: 1 ft.**
Soil Transportation Start Date:	May 16, 2018	**Backfill Date:**	May 23, 2018
Total Yards Transported to Disposal:	260	**Disposal Facility:**	R360 Half-Way Bar Facility

LIMITATIONS

TRC has prepared this Remediation Summary and Soil Closure Request to the best of its ability. No other warranty, expressed or implied, is made or intended.

TRC has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. TRC has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. TRC has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. TRC also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of COG Operating, LLC. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of TRC and/or COG Operating, LLC.

SITE CLOSURE REQUEST

Remediation activities were conducted in accordance with the NMOCD- and NMSLO-approved *Workplan* . Impacted material was excavated and transported to an NMOCD-approved disposal facility. Upon recieving laboratory analytical results from confirmation soil samples, the site was backfilled with locally sourced, non-impacted "like" material. TRC on behalf of COG Operating, LLC respectfully requests the NMOCD and NMSLO grant closure approval for the Bobwhite 12 State Com #004H release which occurred on January 15, 2018.

If you have any questions, or if additional is required, please feel free to contact Becky Haskell or either of the undersigned by phone or email.

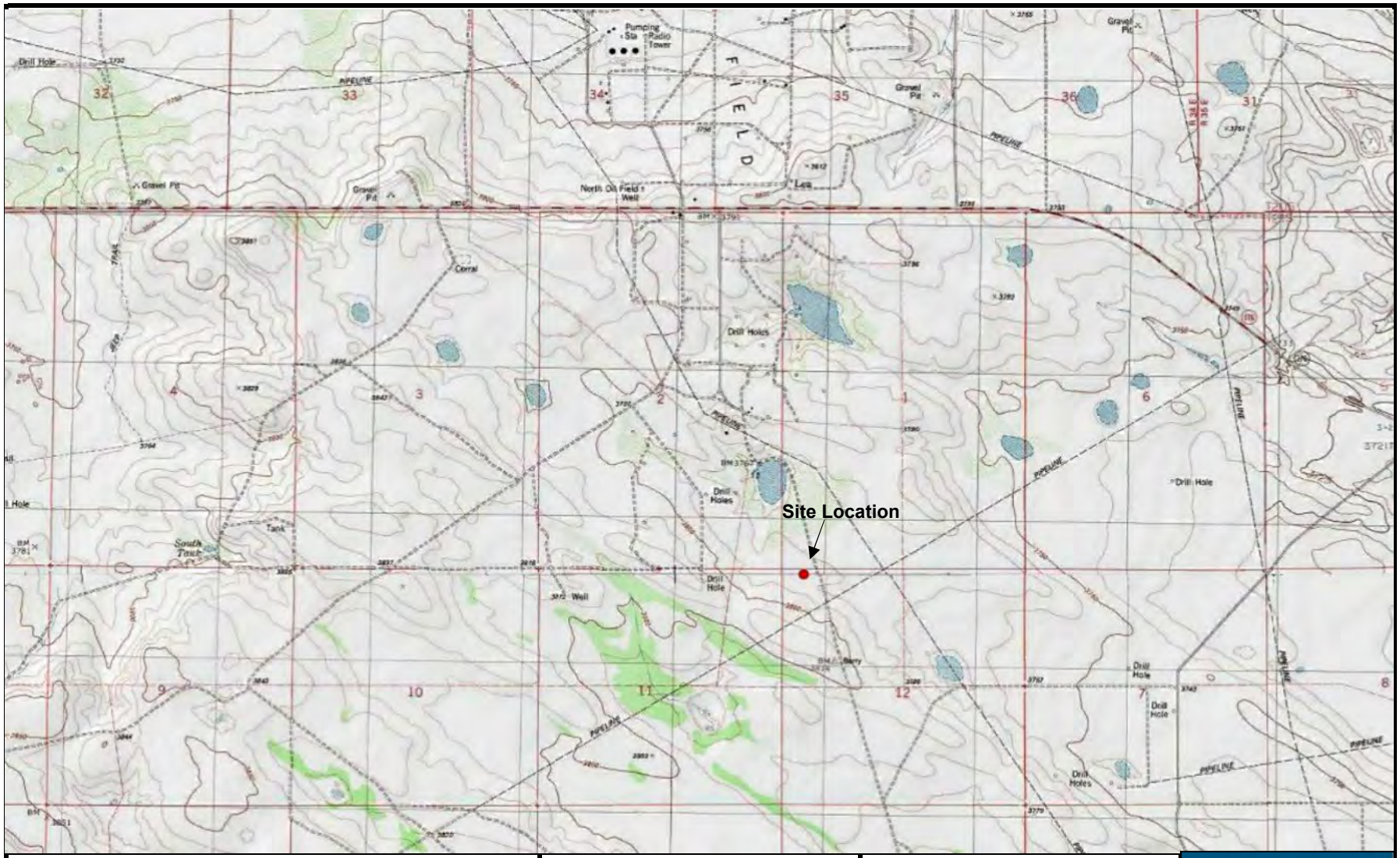
Respectfully,

Joel Lowry
Senior Project Manager
TRC Environmental Corp.

Curt Stanley
Senior Project Manager
TRC Environmental Corp.

Attachments:

Attachment #1-	Figure 1 - Site Location Map
Attachment #2-	Figure 2 - Site & Confirmation Sample Location Map
Attachment #3-	Groundwater Database Search
Attachment #4-	Laboratory Analytical Reports
Attachment #5-	Photographic Log
Attachment #6-	Release Notification and Corrective Action (FORM C-141)



LEGEND:

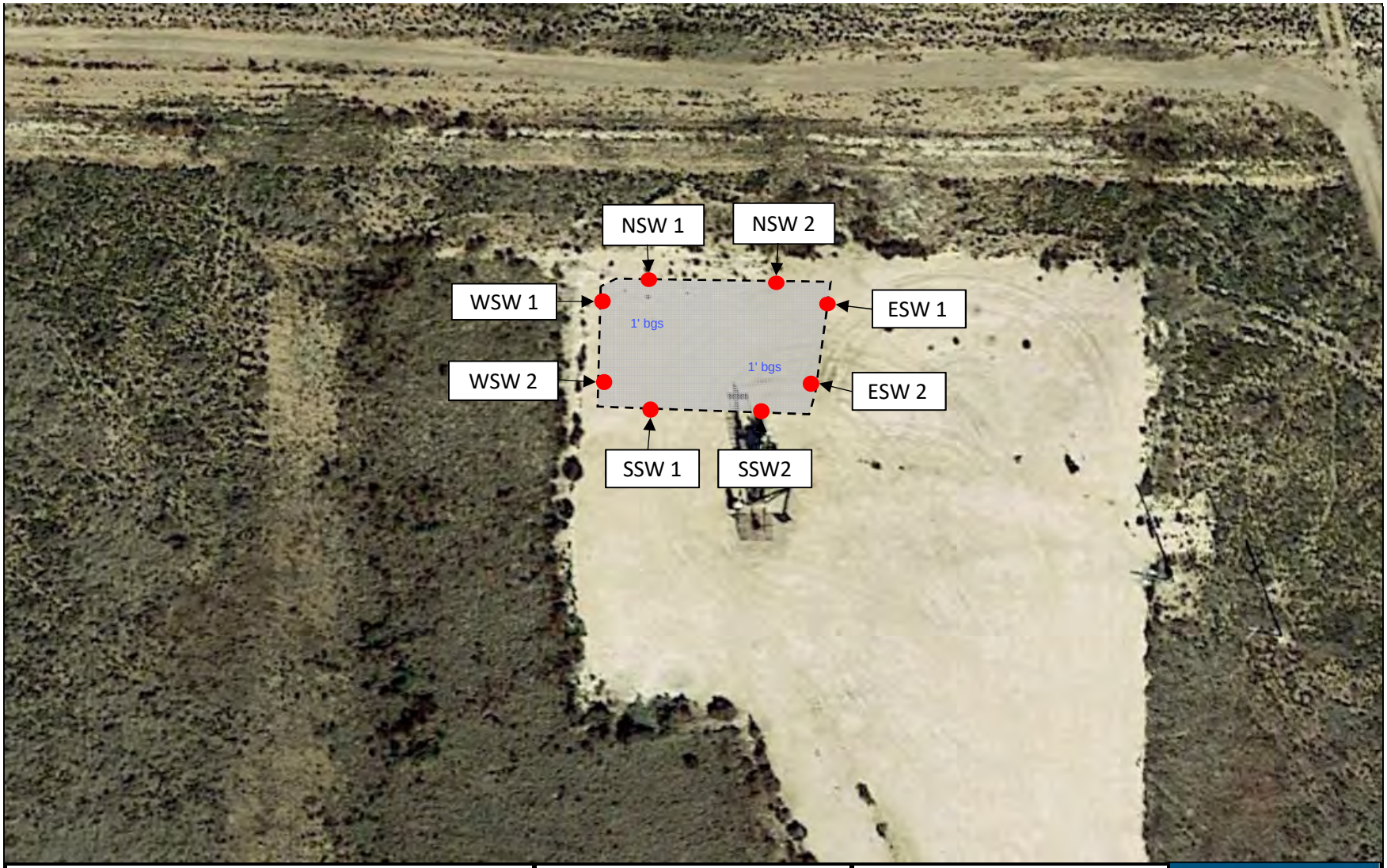
● Site Location

Figure 1

Site Location Map
COG Operating, LLC
Bobwhite 12 State Com #004H
Lea Co, NM

Scale 1" = 3,300'	
Drafted by: ZC | Checked by: JL	
Draft: April 20, 2018	
GPS: 32.5000725, -103.5330048	
UL "D", Sec. 12, T21S, R33E	
TRC Proj. No:	302653

TRC
Results you can rely on



LEGEND:

Remediated Area

Soil Sample Location

Figure 2

Site & Sample Location Map
COG Operating, LLC
Bobwhite 12 State Com #004H
Lea Co, NM

Scale 1" = 50'	
Drafted by: ZC | Checked by: JL	
Draft: June 1, 2018	
GPS: 32.5000725, -103.5330048	
UL "D", Sec. 12, T21S, R33E	
TRC Proj. No:	302653

TRC
Results you can rely on

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 638544.5 **Northing (Y):** 3597002.4 **Radius:** 330

6/19/18 10:24 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Certificate of Analysis Summary 574886

COG Operating LLC, Artesia, NM

Project Name: Bobwhite 12 St Com #4 H

Project Id:
Contact: Dakota Neel
Project Location: Lea County

Date Received in Lab: Mon Jan-29-18 10:50 am
Report Date: 07-FEB-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	574886-001		574886-002		574886-003		574886-004		574886-005		574886-006	
	Field Id:	T-1		T-1		T-1		T-2		T-2		T-2	
	Depth:	0- ft		1- ft		2- ft		0- ft		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-23-18 00:00		Jan-23-18 00:00		Jan-23-18 00:00		Jan-23-18 00:00		Jan-23-18 00:00		Jan-23-18 00:00	
BTEX by EPA 8021B	*Extracted:*	Feb-01-18 17:00		Feb-01-18 17:00		Feb-01-18 16:15		Feb-01-18 16:15		Feb-01-18 16:15		Feb-01-18 16:15	
	Analyzed:	Feb-02-18 07:05		Feb-02-18 07:41		Feb-01-18 20:34		Feb-01-18 20:53		Feb-01-18 21:12		Feb-01-18 21:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
Toluene		<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
Ethylbenzene		<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
m,p-Xylenes		<0.00396	0.00396	<0.00401	0.00401	<0.00403	0.00403	<0.00398	0.00398	<0.00397	0.00397	<0.00404	0.00404
o-Xylene		<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
Total Xylenes		<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
Total BTEX		<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
Chloride by EPA 300	*Extracted:*	Feb-01-18 12:00						Feb-02-18 13:00					
	Analyzed:	Feb-01-18 16:53						Feb-02-18 14:43					
	Units/RL:	mg/kg	RL					mg/kg	RL				
Chloride		364	4.99					546	4.98				
TPH By SW8015 Mod	*Extracted:*	Jan-30-18 11:00		Jan-30-18 11:00		Jan-30-18 11:00		Jan-30-18 11:00		Jan-30-18 11:00		Jan-30-18 11:00	
	Analyzed:	Jan-30-18 20:56		Jan-30-18 21:17		Jan-30-18 21:37		Jan-30-18 22:00		Jan-30-18 22:21		Jan-30-18 22:42	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		21.9	15.0	<15.0	15.0	<15.0	15.0	148	15.0	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	88.4	15.0	<15.0	15.0	<15.0	15.0
Total TPH		21.9	15.0	<15.0	15.0	<15.0	15.0	236	15.0	<15.0	15.0	<15.0	15.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 574886

COG Operating LLC, Artesia, NM

Project Name: Bobwhite 12 St Com #4 H

Project Id:
Contact: Dakota Neel
Project Location: Lea County

Date Received in Lab: Mon Jan-29-18 10:50 am
Report Date: 07-FEB-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	574886-007		574886-008		574886-009		574886-010		574886-011		574886-012	
	Field Id:	T-3		T-4		T-4		T-5		T-5		North	
	Depth:	0- ft		0- ft		1- ft		0- ft		1- ft		0- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-23-18 00:00		Jan-23-18 00:00		Jan-23-18 00:00		Jan-23-18 00:00		Jan-23-18 00:00		Jan-23-18 00:00	
BTEX by EPA 8021B	*Extracted:*	Feb-01-18 16:15		Feb-01-18 16:15		Feb-01-18 16:15		Feb-01-18 16:15		Feb-01-18 16:15		Feb-01-18 16:15	
	Analyzed:	Feb-01-18 21:50		Feb-01-18 18:59		Feb-02-18 00:03		Feb-02-18 00:21		Feb-01-18 23:45		Feb-01-18 23:26	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200
m,p-Xylenes		<0.00401	0.00401	<0.00398	0.00398	<0.00399	0.00399	<0.00402	0.00402	<0.00402	0.00402	<0.00399	0.00399
o-Xylene		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00200	0.00200
Chloride by EPA 300	*Extracted:*	Feb-02-18 13:00		Feb-02-18 13:00				Feb-02-18 13:00		Feb-05-18 17:00		Feb-02-18 13:00	
	Analyzed:	Feb-02-18 16:21		Feb-02-18 15:04				Feb-02-18 15:11		Feb-06-18 03:05		Feb-02-18 15:18	
	Units/RL:	mg/kg	RL	mg/kg	RL			mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		176	4.95	474	4.98			1790	24.8	112	4.98	309	4.91
TPH By SW8015 Mod	*Extracted:*	Jan-30-18 11:00		Feb-01-18 09:00		Feb-01-18 09:00		Feb-01-18 09:00		Feb-01-18 09:00		Feb-01-18 09:00	
	Analyzed:	Jan-30-18 23:04		Feb-01-18 13:14		Feb-01-18 13:34		Feb-01-18 13:55		Feb-01-18 14:15		Feb-01-18 14:35	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<14.9	14.9
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<14.9	14.9
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<14.9	14.9
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<14.9	14.9

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 574886

COG Operating LLC, Artesia, NM

Project Name: Bobwhite 12 St Com #4 H

Project Id:
Contact: Dakota Neel
Project Location: Lea County

Date Received in Lab: Mon Jan-29-18 10:50 am
Report Date: 07-FEB-18
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	574886-013		574886-014		574886-015			
	Field Id:	South		East		West			
	Depth:	0- ft		0- ft		0- ft			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Jan-23-18 00:00		Jan-23-18 00:00		Jan-23-18 00:00			
BTEX by EPA 8021B	***Extracted:***	Feb-01-18 16:15		Feb-01-18 16:15		Feb-01-18 17:00			
	Analyzed:	Feb-02-18 00:40		Feb-02-18 00:59		Feb-02-18 05:25			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		<0.00202	0.00202	<0.00199	0.00199	<0.00201	0.00201		
Toluene		<0.00202	0.00202	<0.00199	0.00199	<0.00201	0.00201		
Ethylbenzene		<0.00202	0.00202	<0.00199	0.00199	<0.00201	0.00201		
m,p-Xylenes		<0.00403	0.00403	<0.00398	0.00398	<0.00402	0.00402		
o-Xylene		<0.00202	0.00202	<0.00199	0.00199	<0.00201	0.00201		
Total Xylenes		<0.00202	0.00202	<0.00199	0.00199	<0.00201	0.00201		
Total BTEX		<0.00202	0.00202	<0.00199	0.00199	<0.00201	0.00201		
Chloride by EPA 300	***Extracted:***	Feb-02-18 13:00		Feb-02-18 13:00		Feb-02-18 13:00			
	Analyzed:	Feb-02-18 15:25		Feb-02-18 15:46		Feb-02-18 15:53			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		<5.00	5.00	86.7	4.91	339	4.97		
TPH By SW8015 Mod	***Extracted:***	Feb-01-18 09:00		Feb-01-18 09:00		Feb-01-18 09:00			
	Analyzed:	Feb-01-18 14:56		Feb-01-18 15:16		Feb-01-18 16:18			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0		
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0	<15.0	15.0		
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0		

Kelsey Brooks
Project Manager

Analytical Report 574886

for

COG Operating LLC

Project Manager: Dakota Neel

Bobwhite 12 St Com #4 H

07-FEB-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

07-FEB-18

Project Manager: **Dakota Neel**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **574886**
Bobwhite 12 St Com #4 H
Project Address: Lea County

Dakota Neel:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 574886. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 574886 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1	S	01-23-18 00:00	0 ft	574886-001
T-1	S	01-23-18 00:00	1 ft	574886-002
T-1	S	01-23-18 00:00	2 ft	574886-003
T-2	S	01-23-18 00:00	0 ft	574886-004
T-2	S	01-23-18 00:00	1 ft	574886-005
T-2	S	01-23-18 00:00	2 ft	574886-006
T-3	S	01-23-18 00:00	0 ft	574886-007
T-4	S	01-23-18 00:00	0 ft	574886-008
T-4	S	01-23-18 00:00	1 ft	574886-009
T-5	S	01-23-18 00:00	0 ft	574886-010
T-5	S	01-23-18 00:00	1 ft	574886-011
North	S	01-23-18 00:00	0 ft	574886-012
South	S	01-23-18 00:00	0 ft	574886-013
East	S	01-23-18 00:00	0 ft	574886-014
West	S	01-23-18 00:00	0 ft	574886-015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3039915 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3040007 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3040185 Inorganic Anions by EPA 300
Lab Sample ID 574886-007 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.
Samples in the analytical batch are: 574886-004, -007, -008, -010, -012, -013, -014, -015.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-1**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-001	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.01.18 12.00	Basis:	Wet Weight
Seq Number:	3040180				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**364**	4.99	mg/kg	02.01.18 16.53		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.30.18 11.00	Basis:	Wet Weight
Seq Number:	3039740				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.18 20.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	**21.9**	15.0	mg/kg	01.30.18 20.56		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	01.30.18 20.56	U	1
Total TPH	PHC635	**21.9**	15.0	mg/kg	01.30.18 20.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	01.30.18 20.56	
o-Terphenyl	84-15-1	89	%	70-135	01.30.18 20.56	

Certificate of Analytical Results 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-1**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-001	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 17.00	Basis:	Wet Weight
Seq Number:	3040007				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.02.18 07.05	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.02.18 07.05	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.02.18 07.05	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.02.18 07.05	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.02.18 07.05	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.02.18 07.05	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.02.18 07.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86	%	80-120	02.02.18 07.05	
1,4-Difluorobenzene	540-36-3	84	%	80-120	02.02.18 07.05	

Certificate of Analytical Results 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-1**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-002	Date Collected:	01.23.18 00.00	Sample Depth:	1 ft

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.30.18 11.00	Basis:	Wet Weight
Seq Number:	3039740				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.18 21.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.30.18 21.17	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	01.30.18 21.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.30.18 21.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	01.30.18 21.17	
o-Terphenyl	84-15-1	102	%	70-135	01.30.18 21.17	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 17.00	Basis:	Wet Weight
Seq Number:	3040007				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.02.18 07.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.02.18 07.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.02.18 07.41	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.02.18 07.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.02.18 07.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.02.18 07.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.02.18 07.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	80-120	02.02.18 07.41	
1,4-Difluorobenzene	540-36-3	87	%	80-120	02.02.18 07.41	

Certificate of Analytical Results 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-1**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-003	Date Collected:	01.23.18 00.00	Sample Depth:	2 ft
Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.30.18 11.00	Basis:	Wet Weight
Seq Number:	3039740				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.18 21.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.30.18 21.37	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	01.30.18 21.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.30.18 21.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	01.30.18 21.37	
o-Terphenyl	84-15-1	98	%	70-135	01.30.18 21.37	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.01.18 20.34	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.01.18 20.34	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.01.18 20.34	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.01.18 20.34	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.01.18 20.34	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.01.18 20.34	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.01.18 20.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	80-120	02.01.18 20.34	
4-Bromofluorobenzene	460-00-4	93	%	80-120	02.01.18 20.34	

Certificate of Analytical Results 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-2**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-004	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.02.18 13.00	Basis:	Wet Weight
Seq Number:	3040185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**546**	4.98	mg/kg	02.02.18 14.43		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.30.18 11.00	Basis:	Wet Weight
Seq Number:	3039740				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.18 22.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	**148**	15.0	mg/kg	01.30.18 22.00		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**88.4**	15.0	mg/kg	01.30.18 22.00		1
Total TPH	PHC635	**236**	15.0	mg/kg	01.30.18 22.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	01.30.18 22.00	
o-Terphenyl	84-15-1	93	%	70-135	01.30.18 22.00	

Certificate of Analytical Results 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-2**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-004	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.01.18 20.53	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.01.18 20.53	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.01.18 20.53	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.01.18 20.53	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.01.18 20.53	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.01.18 20.53	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.01.18 20.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	86	%	80-120	02.01.18 20.53	
4-Bromofluorobenzene	460-00-4	88	%	80-120	02.01.18 20.53	

Certificate of Analytical Results 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-2**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-005	Date Collected:	01.23.18 00.00	Sample Depth:	1 ft

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.30.18 11.00	Basis:	Wet Weight
Seq Number:	3039740				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.18 22.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.30.18 22.21	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	01.30.18 22.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.30.18 22.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	01.30.18 22.21	
o-Terphenyl	84-15-1	97	%	70-135	01.30.18 22.21	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.01.18 21.12	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.01.18 21.12	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.01.18 21.12	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	02.01.18 21.12	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.01.18 21.12	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.01.18 21.12	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.01.18 21.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	80-120	02.01.18 21.12	
1,4-Difluorobenzene	540-36-3	82	%	80-120	02.01.18 21.12	

Certificate of Analytical Results 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-2**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-006	Date Collected:	01.23.18 00.00	Sample Depth:	2 ft
Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.30.18 11.00	Basis:	Wet Weight
Seq Number:	3039740				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.18 22.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.30.18 22.42	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	01.30.18 22.42	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.30.18 22.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	01.30.18 22.42	
o-Terphenyl	84-15-1	94	%	70-135	01.30.18 22.42	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.01.18 21.31	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.01.18 21.31	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.01.18 21.31	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.01.18 21.31	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.01.18 21.31	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.01.18 21.31	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.01.18 21.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	80-120	02.01.18 21.31	
4-Bromofluorobenzene	460-00-4	99	%	80-120	02.01.18 21.31	

Certificate of Analytical Results 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-3**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-007	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.02.18 13.00	Basis:	Wet Weight
Seq Number:	3040185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**176**	4.95	mg/kg	02.02.18 16.21		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	01.30.18 11.00	Basis:	Wet Weight
Seq Number:	3039740				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	01.30.18 23.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	01.30.18 23.04	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	01.30.18 23.04	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	01.30.18 23.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	01.30.18 23.04	
o-Terphenyl	84-15-1	89	%	70-135	01.30.18 23.04	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-3**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-007	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.01.18 21.50	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.01.18 21.50	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.01.18 21.50	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.01.18 21.50	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.01.18 21.50	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.01.18 21.50	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.01.18 21.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	80-120	02.01.18 21.50	
1,4-Difluorobenzene	540-36-3	89	%	80-120	02.01.18 21.50	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-4**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-008	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.02.18 13.00	Basis:	Wet Weight
Seq Number:	3040185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**474**	4.98	mg/kg	02.02.18 15.04		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.01.18 09.00	Basis:	Wet Weight
Seq Number:	3040013				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.01.18 13.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.01.18 13.14	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.01.18 13.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.01.18 13.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.01.18 13.14	
o-Terphenyl	84-15-1	94	%	70-135	02.01.18 13.14	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-4**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-008	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.01.18 18.59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.01.18 18.59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.01.18 18.59	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.01.18 18.59	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.01.18 18.59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.01.18 18.59	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.01.18 18.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	86	%	80-120	02.01.18 18.59	
4-Bromofluorobenzene	460-00-4	96	%	80-120	02.01.18 18.59	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-4**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-009	Date Collected:	01.23.18 00.00	Sample Depth:	1 ft

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.01.18 09.00	Basis:	Wet Weight
Seq Number:	3040013				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.01.18 13.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.01.18 13.34	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.01.18 13.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.01.18 13.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.01.18 13.34	
o-Terphenyl	84-15-1	97	%	70-135	02.01.18 13.34	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.02.18 00.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.02.18 00.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.02.18 00.03	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.02.18 00.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.02.18 00.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.02.18 00.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.02.18 00.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	80-120	02.02.18 00.03	
1,4-Difluorobenzene	540-36-3	87	%	80-120	02.02.18 00.03	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-5**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-010	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.02.18 13.00	Basis:	Wet Weight
Seq Number:	3040185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1790**	24.8	mg/kg	02.02.18 15.11		5

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.01.18 09.00	Basis:	Wet Weight
Seq Number:	3040013				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.01.18 13.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.01.18 13.55	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.01.18 13.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.01.18 13.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	02.01.18 13.55	
o-Terphenyl	84-15-1	93	%	70-135	02.01.18 13.55	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-5**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-010	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.02.18 00.21	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.02.18 00.21	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.02.18 00.21	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.02.18 00.21	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.02.18 00.21	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.02.18 00.21	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.02.18 00.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	80-120	02.02.18 00.21	
1,4-Difluorobenzene	540-36-3	89	%	80-120	02.02.18 00.21	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-5**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-011	Date Collected:	01.23.18 00.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.05.18 17.00	Basis:	Wet Weight
Seq Number:	3040264				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**112**	4.98	mg/kg	02.06.18 03.05		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.01.18 09.00	Basis:	Wet Weight
Seq Number:	3040013				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.01.18 14.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	02.01.18 14.15	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	02.01.18 14.15	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	02.01.18 14.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.01.18 14.15	
o-Terphenyl	84-15-1	104	%	70-135	02.01.18 14.15	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**T-5**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-011	Date Collected:	01.23.18 00.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.01.18 23.45	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.01.18 23.45	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.01.18 23.45	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.01.18 23.45	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.01.18 23.45	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.01.18 23.45	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.01.18 23.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	80-120	02.01.18 23.45	
1,4-Difluorobenzene	540-36-3	90	%	80-120	02.01.18 23.45	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**North**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-012	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.02.18 13.00	Basis:	Wet Weight
Seq Number:	3040185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**309**	4.91	mg/kg	02.02.18 15.18		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.01.18 09.00	Basis:	Wet Weight
Seq Number:	3040013				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.01.18 14.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	02.01.18 14.35	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	02.01.18 14.35	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	02.01.18 14.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.01.18 14.35	
o-Terphenyl	84-15-1	104	%	70-135	02.01.18 14.35	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**North**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-012	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.01.18 23.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.01.18 23.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.01.18 23.26	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.01.18 23.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.01.18 23.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.01.18 23.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.01.18 23.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	80-120	02.01.18 23.26	
1,4-Difluorobenzene	540-36-3	86	%	80-120	02.01.18 23.26	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**South**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-013	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.02.18 13.00	Basis:	Wet Weight
Seq Number:	3040185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.02.18 15.25	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.01.18 09.00	Basis:	Wet Weight
Seq Number:	3040013				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.01.18 14.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.01.18 14.56	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.01.18 14.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.01.18 14.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	02.01.18 14.56	
o-Terphenyl	84-15-1	96	%	70-135	02.01.18 14.56	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**South**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-013	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.02.18 00.40	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.02.18 00.40	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.02.18 00.40	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.02.18 00.40	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.02.18 00.40	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.02.18 00.40	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.02.18 00.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	85	%	80-120	02.02.18 00.40	
4-Bromofluorobenzene	460-00-4	89	%	80-120	02.02.18 00.40	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**East**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-014	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.02.18 13.00	Basis:	Wet Weight
Seq Number:	3040185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**86.7**	4.91	mg/kg	02.02.18 15.46		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.01.18 09.00	Basis:	Wet Weight
Seq Number:	3040013				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.01.18 15.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.01.18 15.16	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.01.18 15.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.01.18 15.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.01.18 15.16	
o-Terphenyl	84-15-1	94	%	70-135	02.01.18 15.16	

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COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**East**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-014	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 16.15	Basis:	Wet Weight
Seq Number:	3039915				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.02.18 00.59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.02.18 00.59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.02.18 00.59	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.02.18 00.59	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.02.18 00.59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.02.18 00.59	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.02.18 00.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	80-120	02.02.18 00.59	
1,4-Difluorobenzene	540-36-3	89	%	80-120	02.02.18 00.59	

Certificate of Analytical Results 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**West**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-015	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	OJS	Date Prep:	02.02.18 13.00	Basis:	Wet Weight
Seq Number:	3040185				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**339**	4.97	mg/kg	02.02.18 15.53		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.01.18 09.00	Basis:	Wet Weight
Seq Number:	3040013				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.01.18 16.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.01.18 16.18	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.01.18 16.18	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	02.01.18 16.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.01.18 16.18	
o-Terphenyl	84-15-1	99	%	70-135	02.01.18 16.18	

Certificate of Analytical Results 574886

COG Operating LLC, Artesia, NM

Bobwhite 12 St Com #4 H

Sample Id:	**West**	Matrix:	Soil	Date Received:	01.29.18 10.50
Lab Sample Id:	574886-015	Date Collected:	01.23.18 00.00	Sample Depth:	0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.01.18 17.00	Basis:	Wet Weight
Seq Number:	3040007				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.02.18 05.25	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.02.18 05.25	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.02.18 05.25	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.02.18 05.25	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.02.18 05.25	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.02.18 05.25	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.02.18 05.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	80-120	02.02.18 05.25	
1,4-Difluorobenzene	540-36-3	89	%	80-120	02.02.18 05.25	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

QC Summary 574886

COG Operating LLC

Bobwhite 12 St Com #4 H

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3040180 Matrix: Solid Date Prep: 02.01.18
MB Sample Id: 7638469-1-BLK LCS Sample Id: 7638469-1-BKS LCSD Sample Id: 7638469-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	249	100	254	102	90-110	2	20	mg/kg	02.01.18 13:38	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3040185 Matrix: Solid Date Prep: 02.02.18
MB Sample Id: 7638552-1-BLK LCS Sample Id: 7638552-1-BKS LCSD Sample Id: 7638552-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	272	109	271	108	90-110	0	20	mg/kg	02.02.18 14:29	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3040264 Matrix: Solid Date Prep: 02.05.18
MB Sample Id: 7638616-1-BLK LCS Sample Id: 7638616-1-BKS LCSD Sample Id: 7638616-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	248	99	247	99	90-110	0	20	mg/kg	02.05.18 23:43	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3040180 Matrix: Soil Date Prep: 02.01.18
Parent Sample Id: 574884-006 MS Sample Id: 574884-006 S MSD Sample Id: 574884-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	151	247	393	98	386	95	90-110	2	20	mg/kg	02.01.18 13:59	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3040185 Matrix: Soil Date Prep: 02.02.18
Parent Sample Id: 574886-004 MS Sample Id: 574886-004 S MSD Sample Id: 574886-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	546	249	829	114	806	104	90-110	3	20	mg/kg	02.02.18 14:50	X

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 574886

COG Operating LLC

Bobwhite 12 St Com #4 H

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3040185 — Matrix: Soil — Date Prep: 02.02.18
Parent Sample Id: 574886-007 — MS Sample Id: 574886-007 S — MSD Sample Id: 574886-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	176	248	412	95	431	103	90-110	5	20	mg/kg	02.02.18 16:28	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3040264 — Matrix: Soil — Date Prep: 02.05.18
Parent Sample Id: 575033-004 — MS Sample Id: 575033-004 S — MSD Sample Id: 575033-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	300	250	535	94	538	95	90-110	1	20	mg/kg	02.06.18 01:41	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3040264 — Matrix: Soil — Date Prep: 02.05.18
Parent Sample Id: 575316-013 — MS Sample Id: 575316-013 S — MSD Sample Id: 575316-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.04	250	260	102	260	102	90-110	0	20	mg/kg	02.06.18 00:04	

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3039740 — Matrix: Solid — Date Prep: 01.30.18
MB Sample Id: 7638354-1-BLK — LCS Sample Id: 7638354-1-BKS — LCSD Sample Id: 7638354-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	844	84	849	85	70-135	1	35	mg/kg	01.30.18 14:06	
Diesel Range Organics (DRO)	<15.0	1000	928	93	883	88	70-135	5	35	mg/kg	01.30.18 14:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		114		93		70-135	%	01.30.18 14:06
o-Terphenyl	104		103		96		70-135	%	01.30.18 14:06

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Final 1.000

QC Summary 574886

COG Operating LLC

Bobwhite 12 St Com #4 H

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3040013 — Matrix: Solid — Date Prep: 02.01.18
MB Sample Id: 7638497-1-BLK — LCS Sample Id: 7638497-1-BKS — LCSD Sample Id: 7638497-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	858	86	841	84	70-135	2	35	mg/kg	02.01.18 10:47	
Diesel Range Organics (DRO)	<15.0	1000	925	93	925	93	70-135	0	35	mg/kg	02.01.18 10:47	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		115		114		70-135	%	02.01.18 10:47
o-Terphenyl	93		118		100		70-135	%	02.01.18 10:47

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3039740 — Matrix: Soil — Date Prep: 01.30.18
Parent Sample Id: 574885-002 — MS Sample Id: 574885-002 S — MSD Sample Id: 574885-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	891	89	941	94	70-135	5	35	mg/kg	01.30.18 15:35	
Diesel Range Organics (DRO)	<15.0	999	1030	103	1050	105	70-135	2	35	mg/kg	01.30.18 15:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	118		127		70-135	%	01.30.18 15:35
o-Terphenyl	94		105		70-135	%	01.30.18 15:35

Analytical Method: TPH By SW8015 Mod — Prep Method: TX1005P
Seq Number: 3040013 — Matrix: Soil — Date Prep: 02.01.18
Parent Sample Id: 574884-007 — MS Sample Id: 574884-007 S — MSD Sample Id: 574884-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	799	80	886	89	70-135	10	35	mg/kg	02.01.18 11:51	
Diesel Range Organics (DRO)	<15.0	997	884	89	970	97	70-135	9	35	mg/kg	02.01.18 11:51	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		103		70-135	%	02.01.18 11:51
o-Terphenyl	93		102		70-135	%	02.01.18 11:51

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Final 1.000

QC Summary 574886

COG Operating LLC

Bobwhite 12 St Com #4 H

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3039915 — Matrix: Solid — Date Prep: 02.01.18
MB Sample Id: 7638449-1-BLK — LCS Sample Id: 7638449-1-BKS — LCSD Sample Id: 7638449-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0907	91	0.0926	93	70-130	2	35	mg/kg	02.01.18 16:45	
Toluene	<0.00201	0.100	0.0960	96	0.0972	97	70-130	1	35	mg/kg	02.01.18 16:45	
Ethylbenzene	<0.00201	0.100	0.104	104	0.108	108	71-129	4	35	mg/kg	02.01.18 16:45	
m,p-Xylenes	<0.00402	0.201	0.205	102	0.212	106	70-135	3	35	mg/kg	02.01.18 16:45	
o-Xylene	<0.00201	0.100	0.101	101	0.104	104	71-133	3	35	mg/kg	02.01.18 16:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		88		90		80-120	%	02.01.18 16:45
4-Bromofluorobenzene	88		97		100		80-120	%	02.01.18 16:45

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3040007 — Matrix: Solid — Date Prep: 02.01.18
MB Sample Id: 7638501-1-BLK — LCS Sample Id: 7638501-1-BKS — LCSD Sample Id: 7638501-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0895	90	0.0845	85	70-130	6	35	mg/kg	02.02.18 02:16	
Toluene	<0.00199	0.0994	0.0939	94	0.0892	89	70-130	5	35	mg/kg	02.02.18 02:16	
Ethylbenzene	<0.00199	0.0994	0.103	104	0.0964	97	71-129	7	35	mg/kg	02.02.18 02:16	
m,p-Xylenes	<0.00398	0.199	0.201	101	0.190	95	70-135	6	35	mg/kg	02.02.18 02:16	
o-Xylene	<0.00199	0.0994	0.101	102	0.0943	94	71-133	7	35	mg/kg	02.02.18 02:16	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		87		90		80-120	%	02.02.18 02:16
4-Bromofluorobenzene	87		99		99		80-120	%	02.02.18 02:16

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3039915 — Matrix: Soil — Date Prep: 02.01.18
Parent Sample Id: 574886-008 — MS Sample Id: 574886-008 S — MSD Sample Id: 574886-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0762	77	0.0792	80	70-130	4	35	mg/kg	02.01.18 17:23	
Toluene	<0.00198	0.0992	0.0785	79	0.0825	83	70-130	5	35	mg/kg	02.01.18 17:23	
Ethylbenzene	<0.00198	0.0992	0.0837	84	0.0879	88	71-129	5	35	mg/kg	02.01.18 17:23	
m,p-Xylenes	<0.00397	0.198	0.164	83	0.171	86	70-135	4	35	mg/kg	02.01.18 17:23	
o-Xylene	<0.00198	0.0992	0.0823	83	0.0853	86	71-133	4	35	mg/kg	02.01.18 17:23	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		92		80-120	%	02.01.18 17:23
4-Bromofluorobenzene	107		103		80-120	%	02.01.18 17:23

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Final 1.000

QC Summary 574886

COG Operating LLC

Bobwhite 12 St Com #4 H

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3040007 Matrix: Soil Date Prep: 02.01.18

Parent Sample Id: 574954-006 MS Sample Id: 574954-006 S MSD Sample Id: 574954-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0515	52	0.0525	53	70-130	2	35	mg/kg	02.02.18 02:53	X
Toluene	<0.00199	0.0996	0.0517	52	0.0545	55	70-130	5	35	mg/kg	02.02.18 02:53	X
Ethylbenzene	<0.00199	0.0996	0.0512	51	0.0533	53	71-129	4	35	mg/kg	02.02.18 02:53	X
m,p-Xylenes	<0.00398	0.199	0.102	51	0.106	53	70-135	4	35	mg/kg	02.02.18 02:53	X
o-Xylene	<0.00199	0.0996	0.0533	54	0.0535	54	71-133	0	35	mg/kg	02.02.18 02:53	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		88		80-120	%	02.02.18 02:53
4-Bromofluorobenzene	105		101		80-120	%	02.02.18 02:53

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

E = MSD/LCSD Result

CHAIN OF CUSTODY

Page 1 Of 2

XENCO LABORATORIES

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Xenco Quote # | Xenco Job # 574886

Client / Reporting Information

Company Name / Branch: COG Operating LLC
Company Address: 2407 Pecos Ave. Artesia NM 88210
Email: dneel2@concho.com; slhitchcock@concho.com; cgray@concho.com; rhaskell@concho.com
Phone No: 575-746-2010
Project Contact:
Samplers's Name: Christopher Gray

Project Information

Project Name/Number: Bobwhite 12 St Com # 4H
Project Location: Lea County
Invoice To: COG Operating LLC, Attn: Robert Mcneill, 600 W. Illinois Ave., Midland TX, 79701
PO Number:

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH Extended	BTEX	CHLORIDES	Field Comments
1	T-1	0	1/23/18		S	1								X	X	X	X	
2	T-1	1																
3	T-1	2																
4	T-2	0																
5	T-2	1																
6	T-2	2																
7	T-3	0																
8	T-4	0																
9	T-4	1																
10	T-5	0																

Temp: 2.9 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.7

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

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

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Note.

Stop running if below 600 Chlorides

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Christopher Gray	1/29/18 10:00A	Sid Butler 1-29-18 1:00p	2 Sid Butler	1-29-18 3:00 p	2 Rhaskell 1.30.18 10:50
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor

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

CHAIN OF CUSTODY

Page 2 Of 2

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonic, Texas (210-509-3334)
Midland, Texas (432-704-5251)
www.xenco.com
Phoenix, Arizona (480-355-0900)

Xenco Quote #
Xenco Job # 574886

Client / Reporting Information

Company Name / Branch: COG Operating LLC
Company Address: 2407 Pecos Ave. Artesia NM 88210
Email: dneel2@concho.com
slhitchcock@concho.com
cgray@concho.com; rhaskell@concho.com
Phone No: 575-746-2010
Project Contact:
Samplers's Name: Christopher Gray

Project Information

Project Name/Number: Bobwhite 12 St Com #4H
Project Location: Lea County
Invoice To: COG Operating LLC
Attn: Robert Mcneill
600 W. Illinois Ave.
Midland TX, 79701
PO Number:

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH Extended	BTEX	CHLORIDES	Field Comments
1	T-5	1	1/23/18		S	1								X	X	X	X	
2	North	0	"	"	"	"								"	"	"	"	
3	South	0	"	"	"	"								"	"	"	"	
4	East	0	"	"	"	"								"	"	"	"	
5	West	0	"	"	"	"								"	"	"	"	
6																		
7																		
8																		
9																		
10																		

Temp: 2.9 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.7

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

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

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level III Std QC+ Forms
- [ ] Level 3 (CLP Forms)
- [ ] TRRP Checklist
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] TRRP Level IV
- [ ] UST / RG -411

Notes:

Stop running if below 600

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Christopher Gray	1/29/18 10:00a	Sid Butler 1-29-18 1100p	Sid Butler	1-29-18 3:00p	
2						Robert Mcneill 1-30-18 10:50
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						X

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

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 01/29/2018 10:50:00 AM

Work Order #: 574886

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.7
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Shawnee Smith Date: 01/30/2018
Shawnee Smith

Checklist reviewed by: Kelsey Brooks Date: 01/30/2018
Kelsey Brooks

Analytical Report 586196

for

TRC Solutions, Inc

Project Manager: Joel Lowry

Bobwhite 12 WP

22-MAY-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

22-MAY-18

Project Manager: **Joel Lowry**
TRC Solutions, Inc
2057 Commerce
Midland, TX 79703

Reference: XENCO Report No(s): **586196**
Bobwhite 12 WP
Project Address: Lea Co. N.M.

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 586196. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 586196 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 586196

TRC Solutions, Inc, Midland, TX

Bobwhite 12 WP

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
NSW 1	S	05-14-18 11:00	6 In	586196-001
NSW 2	S	05-14-18 11:05	6 In	586196-002
ESW 1	S	05-14-18 11:10	6 In	586196-003
ESW 2	S	05-14-18 11:15	6 In	586196-004
WSW 1	S	05-14-18 11:20	6 In	586196-005
WSW 2	S	05-14-18 11:25	6 In	586196-006
SSW 1	S	05-14-18 11:30	6 In	586196-007

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 586196

TRC Solutions, Inc, Midland, TX

Project Name: Bobwhite 12 WP

Project Id:

Contact: Joel Lowry

Project Location: Lea Co. N.M.

Date Received in Lab: Wed May-16-18 08:55 am

Report Date: 22-MAY-18

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	586196-001		586196-002		586196-003		586196-004		586196-005		586196-006	
	Field Id:	NSW 1		NSW 2		ESW 1		ESW 2		WSW 1		WSW 2	
	Depth:	6- In		6- In		6- In		6- In		6- In		6- In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-14-18 11:00		May-14-18 11:05		May-14-18 11:10		May-14-18 11:15		May-14-18 11:20		May-14-18 11:25	
Chloride by EPA 300	***Extracted:***	May-18-18 08:50		May-18-18 08:50		May-18-18 08:50		May-18-18 08:50		May-18-18 08:50		May-21-18 10:30	
	Analyzed:	May-18-18 14:35		May-18-18 14:47		May-18-18 14:59		May-18-18 15:12		May-18-18 15:24		May-21-18 21:37	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		168	25.0	36.1	25.0	52.6	25.0	196	25.0	365	50.0	339	25.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 586196

TRC Solutions, Inc, Midland, TX

Project Name: Bobwhite 12 WP

Project Id:

Contact: Joel Lowry

Project Location: Lea Co. N.M.

Date Received in Lab: Wed May-16-18 08:55 am

Report Date: 22-MAY-18

Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	586196-007					
	Field Id:	SSW 1					
	Depth:	6- In					
	Matrix:	SOIL					
	Sampled:	May-14-18 11:30					
Chloride by EPA 300	***Extracted:***	May-18-18 08:50					
	Analyzed:	May-18-18 15:37					
	Units/RL:	mg/kg	RL				
Chloride		208	25.0				

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

BS / BSD Recoveries

Project Name: Bobwhite 12 WP

Work Order #: 586196 **Project ID:**

Analyst: RNL **Date Prepared:** 05/18/2018 **Date Analyzed:** 05/18/2018

Lab Batch ID: 3050667 **Sample:** 7645059-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<25.0	250	260	104	250	252	101	3	90-110	20	

Analyst: RNL **Date Prepared:** 05/21/2018 **Date Analyzed:** 05/21/2018

Lab Batch ID: 3050891 **Sample:** 7645195-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<25.0	250	260	104	250	249	100	4	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Bobwhite 12 WP

Work Order # : 586196 **Project ID:**

Lab Batch ID: 3050667 **QC- Sample ID:** 586001-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/18/2018 **Date Prepared:** 05/18/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3670	250	3470	0	250	3700	12	6	80-120	20	X

Lab Batch ID: 3050667 **QC- Sample ID:** 586302-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/18/2018 **Date Prepared:** 05/18/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	27.1	250	261	94	250	270	97	3	80-120	20	

Lab Batch ID: 3050891 **QC- Sample ID:** 586204-017 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/21/2018 **Date Prepared:** 05/21/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<125	250	315	126	250	318	127	1	80-120	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

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

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

Form 3 - MS / MSD Recoveries

Project Name: Bobwhite 12 WP

Work Order # : 586196 **Project ID:**

Lab Batch ID: 3050891 **QC- Sample ID:** 586207-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/21/2018 **Date Prepared:** 05/21/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	48.8	250	290	96	250	295	98	2	80-120	20	

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

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

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

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

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

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

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Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

BOS# 586196

Xenco Job # 586196

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation

Company Address: 10 Desta Drive, Suite 150E, Midland, TX, 79705

Email: jlowry@trcsolutions.com

Phone No: 432-466-4450

Project Contact: Joel Lowry

Samplers's Name Joel Lowry

Project Information

Project Name/Number: Bobwhite 12 WSP

Project Location: Lea Co, NM

Invoice To: COG Operating c/o Rebecca Haskell

Invoice:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	NSW 1	6"	5-17-18	11:00	S	1										X			1
2	NSW 2			11:05												X			2
3	ESW 1			11:10												X			3
4	ESW 2			11:15												X			4
5	WSW 1			11:20												X			5
6	WSW 2			11:25												X			6
7	SSW 1			11:30												X			7
8																			
9																			
10																			

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

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

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

jlowry@trcsolutions.com

dneel2@concho.com

zconder@trcsolutions.com

kblackburn@trcsolutions.com

rhaskell@concho.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		5-16-18 8:55	1	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			3	4		4
			5			1.3 1.8

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 05/16/2018 08:55:00 AM

Work Order #: 586196

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

Temperature Measuring device used : IR-3

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.8
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Brenda Ward Date: 05/16/2018
Brenda Ward

Checklist reviewed by: Kelsey Brooks Date: 05/18/2018
Kelsey Brooks

Analytical Report 586895

for

TRC Solutions, Inc

Project Manager: Joel Lowry

Bobwhite 12 WP

31-MAY-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

31-MAY-18

Project Manager: **Joel Lowry**
TRC Solutions, Inc
2057 Commerce
Midland, TX 79703

Reference: XENCO Report No(s): **586895**
Bobwhite 12 WP
Project Address: Lea Co. NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 586895. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 586895 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 586895

TRC Solutions, Inc, Midland, TX

Bobwhite 12 WP

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SSW2	S	05-16-18 08:00	6 In	586895-001

CASE NARRATIVE

Client Name: TRC Solutions, Inc
Project Name: Bobwhite 12 WP

Project ID:
Work Order Number(s): *586895*

Report Date: *31-MAY-18*
Date Received: *05/22/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 586895

TRC Solutions, Inc, Midland, TX

Project Name: Bobwhite 12 WP

Project Id:

Contact: Joel Lowry

Project Location: Lea Co. NM

Date Received in Lab: Tue May-22-18 05:25 pm

Report Date: 31-MAY-18

Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	586895-001					
	Field Id:	SSW2					
	Depth:	6- In					
	Matrix:	SOIL					
	Sampled:	May-16-18 08:00					
Chloride by EPA 300	***Extracted:***	May-30-18 13:00					
	Analyzed:	May-30-18 14:21					
	Units/RL:	mg/kg	RL				
Chloride		286	25.0				

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: Bobwhite 12 WP

Work Orders : 586895,

Project ID:

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Bobwhite 12 WP

Work Order #: 586895 **Project ID:**

Analyst: RNL **Date Prepared:** 05/30/2018 **Date Analyzed:** 05/30/2018

Lab Batch ID: 3051749 **Sample:** 7655684-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<25.0	250	235	94	250	233	93	1	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Bobwhite 12 WP

Work Order # : 586895 **Project ID:**

Lab Batch ID: 3051749 **QC- Sample ID:** 586895-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/30/2018 **Date Prepared:** 05/30/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	286	250	525	96	250	518	93	1	80-120	20	

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

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

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

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

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

CHAIN OF CUSTODY

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Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

586895

Xenco Job # 586895

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 2057 Commerce Drive, Midland, TX 79703
Email: jlowry@trcsolutions.com, zconder@trcsolutions.com
Phone No: 432-466-4450
Project Contact: Joel Lowry
Samplers's Name: Zach Conder

Project Information

Project Name/Number: Bobwhite 12 WP
Project Location: Lea Co, NM
Invoice To: COG Operating C/O Becky Haskell
Invoice:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	SSW2	6"	5/16/2018	8:00	S	1										X			1
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Turnaround Time (Business days)

- [ ] Same Day TAT
- [X] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

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

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

jlowry@trcsolutions.com zconder@trcsolutions.com
rhaskell@concho.com
kblackburn@trcsolutions.com
dneel2@concho.com
FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		5/22 9:00	1	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time: 5/22/18 5:25	Received By: 5 Brenda Ward	Custody Seal #	Preserved where applicable	On Ice ✓ Cooler Temp. 3.9 Thermo. Corr. Factor ER-3

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 05/22/2018 05:25:00 PM

Work Order #: 586895

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

Temperature Measuring device used : IR-3

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.9
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst:

PH Device/Lot#:

Checklist completed by: Brenda Ward Date: 05/23/2018
Brenda Ward

Checklist reviewed by: Kelsey Brooks Date: 05/24/2018
Kelsey Brooks

Figure 1 - View of portion of the excavated area, facing West.

Figure 2 - View of the affected area after excavation activities, facing West.

Figure 3 - View of affected area after remediation activities, facing Northwest.

Figure 4 - View of affected area after remediation activities, facing Southeast.

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating, LLC OGRID #229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland, TX 79701	Telephone No. 432-683-7443
Facility Name: **Bobwhite 12 State Com #004H**	Facility Type: Wellhead

Surface Owner: State	Mineral Owner: State	API No. 30-025-41092

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	12	21S	33E	160	North	496	West	Lea

Latitude 32.5000725 **Longitude** -103.5330048 NAD83

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 145 bbl.	Volume Recovered: 140 bbl.
Source of Release: Packing	Date and Hour of Occurrence: January 15, 2018 4:00 pm	Date and Hour of Discovery: January 15, 2018 4:00 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Ms. Yu – NMOCD / Ms. Honea – SLO	
By Whom? Dakota Neel	Date and Hour: January 16, 2018 2:32 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED
By Olivia Yu at 11:07 am, Jan 26, 2018

Describe Cause of Problem and Remedial Action Taken.*

The packing on the pumping well over-pressured and ruptured. The well was shut in and the packing was replaced.

Describe Area Affected and Cleanup Action Taken.*

The release was on location. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

Signature: Robert McNeill	OIL CONSERVATION DIVISION
Printed Name: Robert McNeill	Approved by Environmental Specialist: OY
Title: Environmental Manager	Approval Date: 1/26/2018 Expiration Date:
E-mail Address: rmcneill@concho.com	Conditions of Approval: see attached directive Attached ☑
Date: January 22, 2018 Phone: 432-683-7443	

* Attach Additional Sheets If Necessary

1RP-4942 nOY1802640704

pOY1802640945

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _1/22/2018_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4942__ has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

> *The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.* [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _2/26/2018_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

● Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

● Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

● Nominal detection limits for field and laboratory analyses must be provided.

● Composite sampling is not generally allowed.

● Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

●Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

● If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

● Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us