

SITE INFORMATION

Report Type: Work Plan 2RP-4118

General Site Information:

Site:	Salada Vista State #1					
Company:	COG Operating LLC					
Section, Township and Range	Unit A	Sec. 36	T 19S	R 30E		
Lease Number:	API No. 30-015-34067					
County:	Eddy County					
GPS:	32.6222343° N			103.9202881° W		
Surface Owner:	State					
Mineral Owner:						
Directions:	From the intersection of NM 360 and CR 222 in rural Eddy County, travel northeast on CR 222 for approximately 3.25 mi, turn north onto lease rd for 0.70 mi, turn east onto lease rd for 0.10 mi to location					

Release Data:

Date Released:	2/6/2017
Type Release:	Oil & Produced Water
Source of Contamination:	Stuffing Box Failure
Fluid Released:	4 bbls oil & 7 bbls water
Fluids Recovered:	3 bbls oil & 5 bbls water

Official Communication:

Name:	Robert McNeil	Ike Tavaréz
Company:	COG Operating, LLC	Tetra Tech
Address:	One Concho Center	4000 N. Big Spring
	600 W. Illinois Ave.	Ste 401
City:	Midland Texas, 79701	Midland, Texas
Phone number:	(432) 686-3023	(432) 687-8110
Fax:	(432) 684-7137	
Email:	rmcneil@conchoresources.com	Ike.Tavaréz@tetratech.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	65'
>100 ft.	0	
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:		10

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	1,000



July 26, 2017

Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Work Plan for the COG Operating LLC., Salada Vista State #1, Unit A, Section 36, Township 19 South, Range 30 East, Eddy County, New Mexico. 2RP-4118.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to prepare a work plan for a release that occurred at the Salada Vista State #1, Unit A, Section 36, Township 19 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.6222343°, W 103.9202881°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on February 6, 2017, and released approximately four (4) barrels of oil and seven (7) barrels of produced water due to a stuffing box failure. Approximately three (3) barrels of oil and five (5) barrels of produced water was recovered. The release occurred on the pad area and measured approximately 70' x 80'. The initial C-141 Form is included in Appendix A.

Groundwater

There are no water wells listed within Section 36 on the New Mexico Office of the State Engineers database. However, one well is listed in Section 25, approximately 1.20 miles northwest of the site, with a depth to groundwater of 65' below surface. According to the Chevron Texaco Groundwater Trend Map, the average depth to groundwater in the area less than 50' below surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of

Tetra Tech

4000 North Big Spring, Suite 401, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg.

Soil Assessment and Analytical Results

On February 22, 2017, COG personnel evaluated and sampled the release area using a backhoe. One (1) Trench (T-1) was installed in the release footprint. Additionally, four (4) Trenches (North, South, East, and West) were installed to define the horizontal extents of the release. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The trench locations are shown on Figure 3.

Referring to Table 1, the areas of trenches (North, South, East, and West) did not show any TPH, benzene, or total BTEX concentrations above the RRAL's. Additionally, the samples collected in these areas showed chloride concentrations ranging from 6.99 mg/kg to 271 mg/kg.

The area of Trench (T-1) showed elevated TPH concentrations in the shallow soils, with a TPH high of 4,930 mg/kg at surface, which then declined with depth to 54.6 mg/kg at 3.0' below surface. Additionally, an elevated Total BTEX concentration of 220 mg/kg was detected at the surface, which declined with depth to 1.60 mg/kg at 2.0' below surface. None of the samples collected showed benzene concentrations above the RRAL's. In addition, the area showed chloride concentration that increased with depth to 1,330 mg/kg at 3.0', before declining to 51.8 mg/kg at 5.0' below surface. However, the chloride spiked at 6.0' of 755 mg/kg before again declining to 10.1 mg/kg at 8.0' below surface.

Work Plan

Based on the results, COG proposes to remove the impacted material as highlighted (green) in Table 1 and shown on Figure 4. The area of Trench (T-1) will be excavated to depth of approximately 3.0'-4.0' below surface to remove the elevated TPH and BTEX concentrations encountered in the soils. Once completed, the excavation will be backfilled with clean material to surface grade. All of the excavated material will be transported offsite for proper disposal.

The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safety concerns for onsite personnel. As such, COG will excavate the impacted soils to the maximum extent practicable.



TETRA TECH

Conclusion

Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

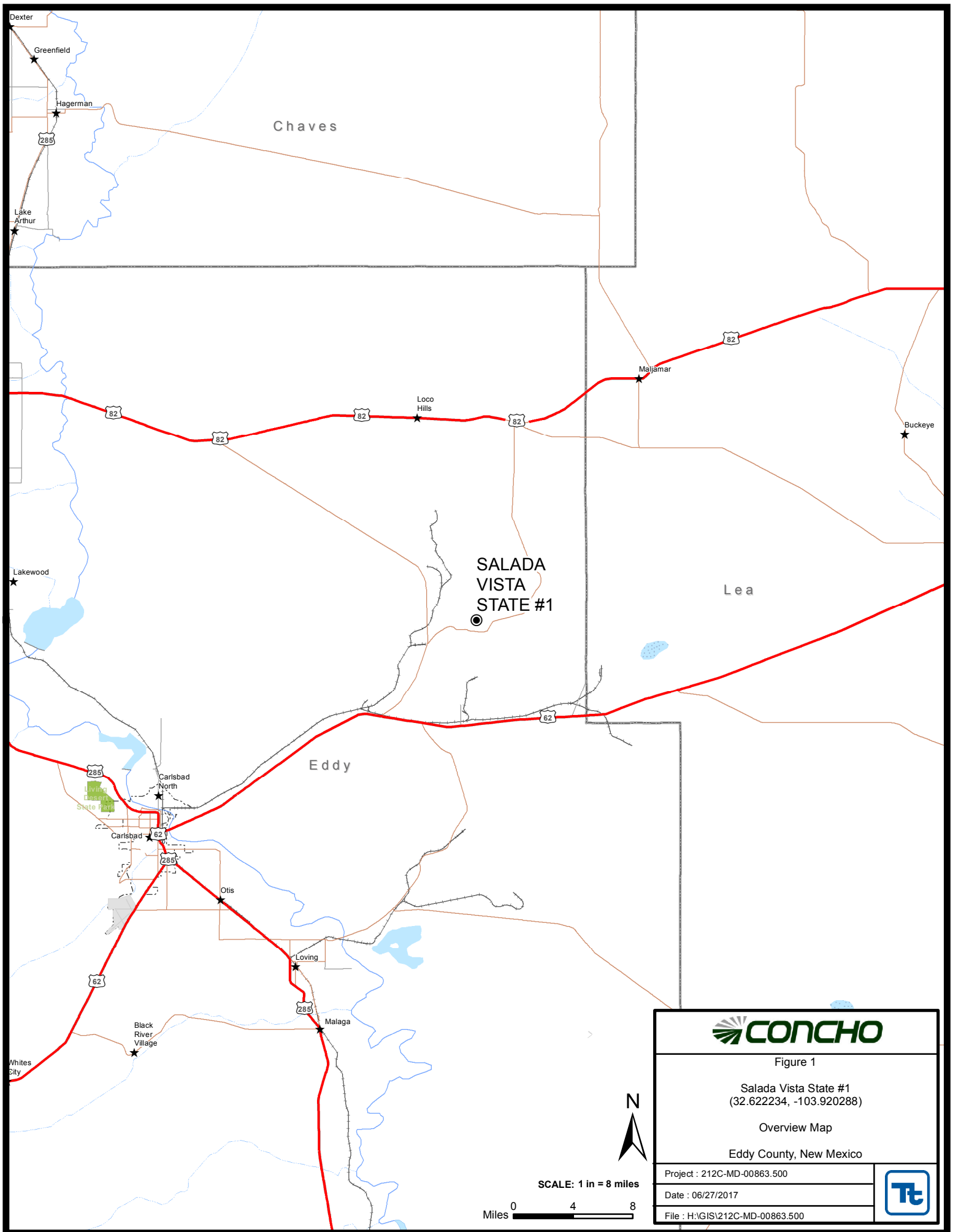
Respectfully submitted,
TETRA TECH

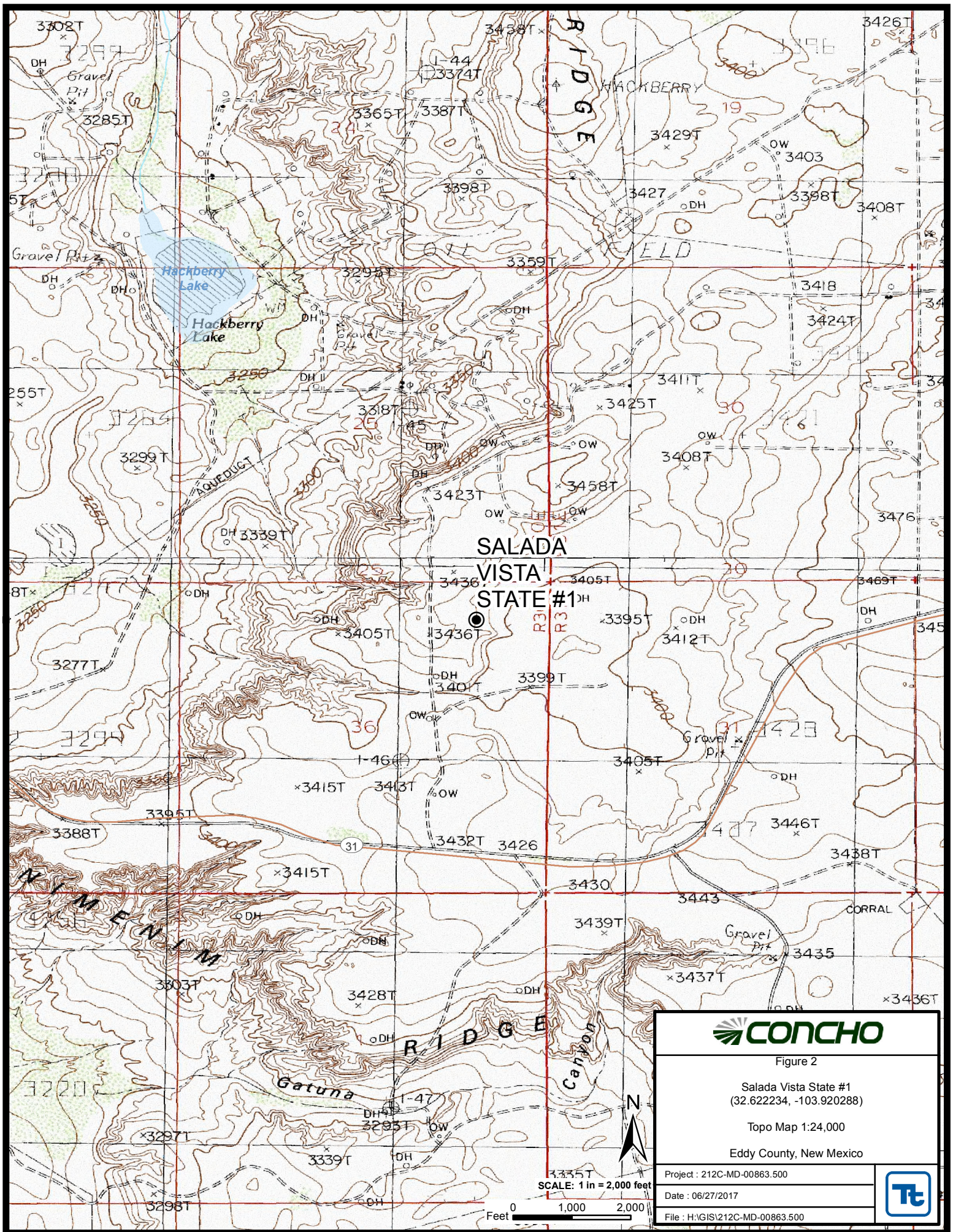
Clair Gonzales,
Geologist I

Ike Tavarez,
Senior Project Manager, P.G.

cc: Robert McNeill – COG
Dakota Neel – COG
Rebecca Haskell – COG
Shelly Tucker - BLM

Figures





Tables

Table 1
COG Operating LLC.
Salada Vista State #1
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	C6-C10	C10-C28	C28-C35	Total						
T-1	2/22/2017	Surface	X		1610	3110	208	4930	0.828	48.4	42.9	127	220	315
	"	1	X		43.4	160	<15.0	203	<0.00149	0.00230	<0.00198	0.00385	0.00615	94.5
	"	2	X		676	1480	107	2260	<0.00150	0.133	0.341	1.12	1.60	237
	"	3	X		<15.0	54.6	<15.0	54.6	<0.00153	<0.00204	<0.00204	<0.00204	<0.00153	1330
	"	4	X		<15.0	57.9	<15.0	57.9	<0.00151	<0.00201	<0.00201	<0.00201	<0.00151	637
	"	5	X		<15.0	25.4	<15.0	25.4	<0.00148	<0.00198	<0.00198	<0.00198	<0.00148	51.8
	"	6	X		-	-	-	-	-	-	-	-	-	755
	"	8	X		-	-	-	-	-	-	-	-	-	10.1
North	2/23/2017	Surface	X		<15.0	31.2	<15.0	31.2	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	6.99
	"	1	X		<15.0	31.2	<15.0	31.2	<0.00148	<0.00197	<0.00197	<0.00197	<0.00148	12.4
South	2/23/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00151	<0.00202	<0.00202	<0.00202	<0.00151	101
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	24.7
East	2/23/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00285	<0.00380	<0.00380	<0.00380	<0.00285	202
	"	1	X		<15.0	17.7	<15.0	17.7	<0.00152	<0.00203	<0.00203	<0.00203	<0.00152	271
West	2/23/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	158
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	158

(-)

Not Analyzed



Proposed Excavation Depths

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

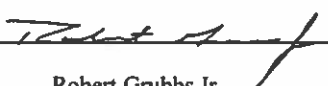
Name of Company:	COG Operating LLC	Contact:	Robert McNeill
Address:	600 West Illinois Avenue, Midland TX 79701	Telephone No.	432-683-7443
Facility Name:	SALADA VISTA STATE #001	Facility Type:	Well Head
Surface Owner:	State	Mineral Owner:	API No. 30-015-34067

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	36	19S	30E	660'	North	990'	East	Eddy

Latitude 32.6222343 Longitude 103.9202881

NATURE OF RELEASE

Type of Release:	Oil & Produced Water	Volume of Release:	4bbls of Oil & 7bbls of Produced Water	Volume Recovered:	3bbls of Oil & 5bbls of Produced Water
Source of Release:	Well Head	Date and Hour of Occurrence:	02/06/2017 08:07 am	Date and Hour of Discovery:	02/06/2017 08:07 am
Was Immediate Notice Given?	☐ Yes ☒ No ☒ Not Required	If YES, To Whom?			
By Whom?		Date and Hour:			
Was a Watercourse Reached?	☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.*					
Describe Cause of Problem and Remedial Action Taken.*					
This release was located on the pad. The release was caused by a stuffing box failure.					
Describe Area Affected and Cleanup Action Taken.*					
This release was contained on the pad. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.					
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.					
Signature:					
Printed Name:	Robert Grubbs Jr.	Approved by Environmental Specialist:			
Title:	Senior HSE Coordinator	Approval Date:	Expiration Date:		
E-mail Address:	rgrubbs@concho.com	Conditions of Approval:			Attached ☐
Date:	February 9, 2017	Phone:	432-683-7443		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Salada Vista State #1
Eddy County, New Mexico

18 South			29 East		
6	5	4	3	2	1
7	8	9	10	95	11
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
					158

18 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	44
30	29	28	27	26	25
31	32	33	34	35	36

18 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	98	14
19	20	21	22	317	24
30	29	28	27	26	25
31	32	33	34	35	36
				261	
					400

19 South			29 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	62'	35
			60	110	115
					123
					101
					62.9

19 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
					92
					65
					36
					SITE
					115
					90

19 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
					180
					130
					101
					140
					90
					180

20 South			29 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
					91
					52
					62

20 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
					60
					82
					6
					40
					29
					150
					170
					191

20 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
					130
					80

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
 Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
CP 00357 POD1		CP	ED	4	4	1	24	19S	30E	600667	3612631*	630		
CP 00357 POD2		CP	ED	4	3	1	24	19S	30E	600265	3612627*	630		
CP 00522		CP	ED			3	30	19S	30E	592347	3610451*	120	90	30
CP 00647 POD1	O	CP	ED	4	2	2	15	19S	30E	598235	3614621*	200	92	108
CP 00722 POD2		CP	ED	2	1	1	25	19S	30E	600276	3611620*	350	65	285
CP 00742		CP	ED	3	3	31	19S	30E	592208	3608940		223	115	108
CP 00822 POD1		CP	LE	4	4	15	19S	30E	598148	3613516*		90		
CP 00823 POD1		CP	LE	1	3	17	19S	30E	593715	3613885*		120		
CP 00824 POD1		CP	LE	4	1	20	19S	30E	594129	3612680*		70		
CP 00825 POD1		CP	LE	3	4	28	19S	30E	596164	3610282*		100		
CP 00827 POD1		CP	LE	3	3	35	19S	30E	598596	3608694*		100		
CP 00828 POD1		CP	LE	1	1	35	19S	30E	598585	3609900*		90		

Average Depth to Water: **90 feet**

Minimum Depth: **65 feet**

Maximum Depth: **115 feet**

Record Count: 12

PLSS Search:

Township: 19S **Range:** 30E

*UTM location was derived from PLSS - see Help

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

5/24/17 7:49 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Appendix C



Certificate of Analysis Summary 547700

COG Operating LLC, Artesia, NM

Project Name: Salada Vista State #1



Project Id:

Contact: Aaron Lieb

Project Location:

Date Received in Lab: Thu Mar-02-17 10:20 am

Report Date: 09-MAR-17

Project Manager: Liz Givens

Analysis Requested	Lab Id:	547700-001	547700-002	547700-003	547700-004	547700-005	547700-006
	Field Id:	T1- Surface	T1- 1'	T1- 2'	T1- 3'	T1- 4'	T1- 5'
	Depth:		1 ft	2 ft	3 ft	4 ft	5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Feb-22-17 14:00	Feb-22-17 14:00	Feb-22-17 14:00	Feb-22-17 14:00	Feb-22-17 14:00	Feb-22-17 14:00
BTEX by EPA 8021B	Extracted:	Mar-06-17 07:20	Mar-06-17 07:20	Mar-07-17 07:30	Mar-06-17 07:20	Mar-06-17 07:20	Mar-06-17 07:20
	Analyzed:	Mar-06-17 16:18	Mar-06-17 16:02	Mar-07-17 16:06	Mar-06-17 12:02	Mar-06-17 11:46	Mar-06-17 11:29
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		0.828 0.373	<0.00149 0.00149	<0.00150 0.00150	<0.00153 0.00153	<0.00151 0.00151	<0.00148 0.00148
Toluene		48.4 0.497	0.00230 0.00198	0.133 0.00200	<0.00204 0.00204	<0.00201 0.00201	<0.00198 0.00198
Ethylbenzene		42.9 0.497	<0.00198 0.00198	0.341 0.00200	<0.00204 0.00204	<0.00201 0.00201	<0.00198 0.00198
m_p-Xylenes		93.9 0.497	0.00385 0.00198	0.799 0.00200	<0.00204 0.00204	<0.00201 0.00201	<0.00198 0.00198
o-Xylene		33.5 0.746	<0.00297 0.00297	0.323 0.00301	<0.00305 0.00305	<0.00302 0.00302	<0.00296 0.00296
Total Xylenes		127 0.497	0.00385 0.00198	1.12 0.00200	<0.00204 0.00204	<0.00201 0.00201	<0.00198 0.00198
Total BTEX		220 0.373	0.00615 0.00149	1.60 0.00150	<0.00153 0.00153	<0.00151 0.00151	<0.00148 0.00148
Inorganic Anions by EPA 300/300.1	Extracted:	Mar-03-17 14:55	Mar-03-17 14:55	Mar-03-17 14:55	Mar-03-17 14:55	Mar-03-17 14:55	Mar-03-17 14:55
	Analyzed:	Mar-03-17 16:40	Mar-03-17 17:16	Mar-03-17 17:24	Mar-03-17 17:46	Mar-03-17 17:53	Mar-03-17 18:00
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		315 4.98	94.5 4.94	237 4.89	1330 4.88	637 4.92	51.8 4.90
TPH By SW8015 Mod	Extracted:	Mar-06-17 07:00	Mar-06-17 07:00	Mar-06-17 07:00	Mar-06-17 07:00	Mar-06-17 07:00	Mar-06-17 07:00
	Analyzed:	Mar-07-17 04:19	Mar-07-17 04:39	Mar-07-17 05:38	Mar-07-17 05:57	Mar-07-17 06:16	Mar-07-17 06:34
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		1610 15.0	43.4 15.0	676 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		3110 15.0	160 15.0	1480 15.0	54.6 15.0	57.9 15.0	25.4 15.0
C28-C35 Oil Range Hydrocarbons		208 15.0	<15.0 15.0	107 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		4930 15.0	203 15.0	2260 15.0	54.6 15.0	57.9 15.0	25.4 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.
Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Brandi Ritcherson

Brandi Ritcherson
Project Manager



Certificate of Analysis Summary 547700

COG Operating LLC, Artesia, NM

Project Name: Salada Vista State #1



Project Id:

Contact: Aaron Lieb

Project Location:

Date Received in Lab: Thu Mar-02-17 10:20 am

Report Date: 09-MAR-17

Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	547700-007	547700-008	547700-009	547700-010	547700-011	547700-012
	<i>Field Id:</i>	T1- 6'	T1- 8'	North-Surface	North-1'	South-Surface	South-1'
	<i>Depth:</i>	6 ft	8 ft		1 ft		1 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-22-17 14:00	Feb-22-17 14:00	Feb-23-17 10:00	Feb-23-17 10:00	Feb-23-17 10:00	Feb-23-17 10:00
BTEX by EPA 8021B	<i>Extracted:</i>			Mar-03-17 16:25	Mar-03-17 16:25	Mar-03-17 16:25	Mar-06-17 07:20
	<i>Analyzed:</i>			Mar-04-17 19:32	Mar-04-17 19:48	Mar-04-17 20:04	Mar-06-17 09:35
	<i>Units/RL:</i>			mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene				<0.00149 0.00149	<0.00148 0.00148	<0.00151 0.00151	<0.00150 0.00150
Toluene				<0.00199 0.00199	<0.00197 0.00197	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene				<0.00199 0.00199	<0.00197 0.00197	<0.00202 0.00202	<0.00200 0.00200
m_p-Xylenes				<0.00199 0.00199	<0.00197 0.00197	<0.00202 0.00202	<0.00200 0.00200
o-Xylene				<0.00299 0.00299	<0.00295 0.00295	<0.00302 0.00302	<0.00299 0.00299
Total Xylenes				<0.00199 0.00199	<0.00197 0.00197	<0.00202 0.00202	<0.00200 0.00200
Total BTEX				<0.00149 0.00149	<0.00148 0.00148	<0.00151 0.00151	<0.00150 0.00150
BTEX by EPA 8021B	<i>Extracted:</i>			Mar-03-17 16:25	Mar-03-17 16:25	Mar-03-17 16:25	
	<i>Analyzed:</i>			Mar-04-17 19:32	Mar-04-17 19:48	Mar-04-17 20:04	
	<i>Units/RL:</i>			mg/L RL	mg/L RL	mg/L RL	
MTBE				<0.00996 0.00996	<0.00984 0.00984	<0.0101 0.0101	
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Mar-03-17 14:55	Mar-03-17 14:55	Mar-03-17 14:55	Mar-03-17 14:55	Mar-03-17 14:55	Mar-03-17 14:55
	<i>Analyzed:</i>	Mar-03-17 18:08	Mar-03-17 18:15	Mar-03-17 18:22	Mar-03-17 18:44	Mar-03-17 18:52	Mar-03-17 19:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		755 4.99	10.1 4.89	6.99 4.89	12.4 4.93	101 4.98	24.7 4.88
TPH By SW8015 Mod	<i>Extracted:</i>			Mar-06-17 07:00	Mar-06-17 07:00	Mar-06-17 07:00	Mar-06-17 07:00
	<i>Analyzed:</i>			Mar-07-17 06:54	Mar-07-17 07:14	Mar-07-17 07:34	Mar-07-17 07:53
	<i>Units/RL:</i>			mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons				<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons				31.2 15.0	31.2 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons				<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH				31.2 15.0	31.2 15.0	<15.0 15.0	<15.0 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Brandi Ritcherson

Brandi Ritcherson
Project Manager



Certificate of Analysis Summary 547700

COG Operating LLC, Artesia, NM

Project Name: Salada Vista State #1



Project Id:

Contact: Aaron Lieb

Project Location:

Date Received in Lab: Thu Mar-02-17 10:20 am

Report Date: 09-MAR-17

Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	547700-013	547700-014	547700-015	547700-016		
	<i>Field Id:</i>	East-Surface	East-1'	West-Surface	West-1'		
	<i>Depth:</i>		1 ft		1 ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Feb-23-17 10:00	Feb-23-17 10:00	Feb-23-17 10:00	Feb-23-17 10:00		
BTEX by EPA 8021B	<i>Extracted:</i>	Mar-06-17 07:20	Mar-06-17 07:20	Mar-06-17 07:20	Mar-06-17 07:20		
	<i>Analyzed:</i>	Mar-06-17 15:45	Mar-06-17 09:52	Mar-06-17 10:25	Mar-06-17 10:41		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00285 0.00285	<0.00152 0.00152	<0.00149 0.00149	<0.00150 0.00150		
Toluene		<0.00380 0.00380	<0.00203 0.00203	<0.00199 0.00199	<0.00200 0.00200		
Ethylbenzene		<0.00380 0.00380	<0.00203 0.00203	<0.00199 0.00199	<0.00200 0.00200		
m_p-Xylenes		<0.00380 0.00380	<0.00203 0.00203	<0.00199 0.00199	<0.00200 0.00200		
o-Xylene		<0.00570 0.00570	<0.00304 0.00304	<0.00299 0.00299	<0.00301 0.00301		
Total Xylenes		<0.00380 0.00380	<0.00203 0.00203	<0.00199 0.00199	<0.00200 0.00200		
Total BTEX		<0.00285 0.00285	<0.00152 0.00152	<0.00149 0.00149	<0.00150 0.00150		
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Mar-03-17 14:55	Mar-03-17 14:55	Mar-03-17 14:55	Mar-03-17 14:55		
	<i>Analyzed:</i>	Mar-03-17 19:21	Mar-03-17 19:29	Mar-03-17 19:36	Mar-03-17 19:43		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		202 4.92	271 4.87	158 4.92	158 4.88		
TPH By SW8015 Mod	<i>Extracted:</i>	Mar-06-17 07:00	Mar-06-17 07:00	Mar-06-17 07:00	Mar-06-17 07:00		
	<i>Analyzed:</i>	Mar-07-17 08:50	Mar-07-17 09:09	Mar-06-17 17:20	Mar-06-17 17:40		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C10 Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	17.7 15.0	<15.0 15.0	<15.0 15.0		
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<15.0 15.0	17.7 15.0	<15.0 15.0	<15.0 15.0		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.
Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brandi Ritcherson

Brandi Ritcherson
Project Manager

Analytical Report 547700

for
COG Operating LLC

Project Manager: Aaron Lieb

Salada Vista State #1

09-MAR-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



09-MAR-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **547700**

Salada Vista State #1

Project Address:

Aaron Lieb:

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) 547700. 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. 547700 will be filed for 60 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,

Brandi Ritcherson

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1- Surface	S	02-22-17 14:00		547700-001
T1- 1'	S	02-22-17 14:00	- 1 ft	547700-002
T1- 2'	S	02-22-17 14:00	- 2 ft	547700-003
T1- 3'	S	02-22-17 14:00	- 3 ft	547700-004
T1- 4'	S	02-22-17 14:00	- 4 ft	547700-005
T1- 5'	S	02-22-17 14:00	- 5 ft	547700-006
T1- 6'	S	02-22-17 14:00	- 6 ft	547700-007
T1- 8'	S	02-22-17 14:00	- 8 ft	547700-008
North-Surface	S	02-23-17 10:00	N/A	547700-009
North-1'	S	02-23-17 10:00	- 1 ft	547700-010
South-Surface	S	02-23-17 10:00	N/A	547700-011
South-1'	S	02-23-17 10:00	- 1 ft	547700-012
East-Surface	S	02-23-17 10:00	N/A	547700-013
East-1'	S	02-23-17 10:00	- 1 ft	547700-014
West-Surface	S	02-23-17 10:00	N/A	547700-015
West-1'	S	02-23-17 10:00	- 1 ft	547700-016



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Salada Vista State #1

Project ID:

Work Order Number(s): 547700

Report Date: 09-MAR-17

Date Received: 03/02/2017

Sample receipt non conformance and comments:

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3011637 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3011716 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3011846 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **T1- Surface**

Matrix: Soil

Date Received: 03.02.17 10.20

Lab Sample Id: 547700-001

Date Collected: 02.22.17 14.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 03.03.17 14.55

Basis: Wet Weight

Seq Number: 3011928

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	315	4.98	mg/kg	03.03.17 16.40		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 03.06.17 07.00

Basis: Wet Weight

Seq Number: 3011770

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	1610	15.0	mg/kg	03.07.17 04.19		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	3110	15.0	mg/kg	03.07.17 04.19		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	208	15.0	mg/kg	03.07.17 04.19		1
Total TPH	PHC635	4930	15.0	mg/kg	03.07.17 04.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	03.07.17 04.19	
o-Terphenyl	84-15-1	93	%	70-135	03.07.17 04.19	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **T1- Surface**

Matrix: Soil

Date Received: 03.02.17 10.20

Lab Sample Id: 547700-001

Date Collected: 02.22.17 14.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 03.06.17 07.20

Basis: Wet Weight

Seq Number: 3011716

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.828	0.373	mg/kg	03.06.17 16.18		250
Toluene	108-88-3	48.4	0.497	mg/kg	03.06.17 16.18		250
Ethylbenzene	100-41-4	42.9	0.497	mg/kg	03.06.17 16.18		250
m_p-Xylenes	179601-23-1	93.9	0.497	mg/kg	03.06.17 16.18		250
o-Xylene	95-47-6	33.5	0.746	mg/kg	03.06.17 16.18		250
Total Xylenes	1330-20-7	127	0.497	mg/kg	03.06.17 16.18		250
Total BTEX		220	0.373	mg/kg	03.06.17 16.18		250
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	87	%	80-120	03.06.17 16.18		
4-Bromofluorobenzene	460-00-4	89	%	80-120	03.06.17 16.18		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 1'
Lab Sample Id: 547700-002

Matrix: Soil
Date Collected: 02.22.17 14.00

Date Received: 03.02.17 10.20
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3011928

Date Prep: 03.03.17 14.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	94.5	4.94	mg/kg	03.03.17 17.16		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3011770

Date Prep: 03.06.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	43.4	15.0	mg/kg	03.07.17 04.39		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	160	15.0	mg/kg	03.07.17 04.39		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.07.17 04.39	U	1
Total TPH	PHC635	203	15.0	mg/kg	03.07.17 04.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	03.07.17 04.39	
o-Terphenyl	84-15-1	93	%	70-135	03.07.17 04.39	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 1'
Lab Sample Id: 547700-002

Matrix: Soil
Date Collected: 02.22.17 14.00

Date Received: 03.02.17 10.20
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 03.06.17 07.20

Basis: Wet Weight

Seq Number: 3011716

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00149	0.00149	mg/kg	03.06.17 16.02	U	1
Toluene	108-88-3	0.00230	0.00198	mg/kg	03.06.17 16.02		1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.06.17 16.02	U	1
m_p-Xylenes	179601-23-1	0.00385	0.00198	mg/kg	03.06.17 16.02		1
o-Xylene	95-47-6	<0.00297	0.00297	mg/kg	03.06.17 16.02	U	1
Total Xylenes	1330-20-7	0.00385	0.00198	mg/kg	03.06.17 16.02		1
Total BTEX		0.00615	0.00149	mg/kg	03.06.17 16.02		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	80-120	03.06.17 16.02		
1,4-Difluorobenzene	540-36-3	109	%	80-120	03.06.17 16.02		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 2' Matrix: Soil Date Received: 03.02.17 10.20
Lab Sample Id: 547700-003 Date Collected: 02.22.17 14.00 Sample Depth: 2 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 03.03.17 14.55 Basis: Wet Weight
Seq Number: 3011928

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	237	4.89	mg/kg	03.03.17 17.24		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 03.06.17 07.00 Basis: Wet Weight
Seq Number: 3011770

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	676	15.0	mg/kg	03.07.17 05.38		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	1480	15.0	mg/kg	03.07.17 05.38		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	107	15.0	mg/kg	03.07.17 05.38		1
Total TPH	PHC635	2260	15.0	mg/kg	03.07.17 05.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	03.07.17 05.38	
o-Terphenyl	84-15-1	72	%	70-135	03.07.17 05.38	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 2'
Lab Sample Id: 547700-003

Matrix: Soil
Date Collected: 02.22.17 14.00

Date Received: 03.02.17 10.20
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 03.07.17 07.30

Basis: Wet Weight

Seq Number: 3011846

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00150	0.00150	mg/kg	03.07.17 16.06	U	1
Toluene	108-88-3	0.133	0.00200	mg/kg	03.07.17 16.06		1
Ethylbenzene	100-41-4	0.341	0.00200	mg/kg	03.07.17 16.06		1
m_p-Xylenes	179601-23-1	0.799	0.00200	mg/kg	03.07.17 16.06		1
o-Xylene	95-47-6	0.323	0.00301	mg/kg	03.07.17 16.06		1
Total Xylenes	1330-20-7	1.12	0.00200	mg/kg	03.07.17 16.06		1
Total BTEX		1.60	0.00150	mg/kg	03.07.17 16.06		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96		%	80-120	03.07.17 16.06	
4-Bromofluorobenzene	460-00-4	85		%	80-120	03.07.17 16.06	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 3'
Lab Sample Id: 547700-004

Matrix: Soil
Date Collected: 02.22.17 14.00

Date Received: 03.02.17 10.20
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3011928

Date Prep: 03.03.17 14.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1330	4.88	mg/kg	03.03.17 17.46		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3011770

Date Prep: 03.06.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.07.17 05.57	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	54.6	15.0	mg/kg	03.07.17 05.57		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.07.17 05.57	U	1
Total TPH	PHC635	54.6	15.0	mg/kg	03.07.17 05.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	03.07.17 05.57	
o-Terphenyl	84-15-1	97	%	70-135	03.07.17 05.57	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 3'
Lab Sample Id: 547700-004

Matrix: Soil
Date Collected: 02.22.17 14.00

Date Received: 03.02.17 10.20
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3011716

Date Prep: 03.06.17 07.20

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00153	0.00153	mg/kg	03.06.17 12.02	U	1
Toluene	108-88-3	<0.00204	0.00204	mg/kg	03.06.17 12.02	U	1
Ethylbenzene	100-41-4	<0.00204	0.00204	mg/kg	03.06.17 12.02	U	1
m_p-Xylenes	179601-23-1	<0.00204	0.00204	mg/kg	03.06.17 12.02	U	1
o-Xylene	95-47-6	<0.00305	0.00305	mg/kg	03.06.17 12.02	U	1
Total Xylenes	1330-20-7	<0.00204	0.00204	mg/kg	03.06.17 12.02	U	1
Total BTEX		<0.00153	0.00153	mg/kg	03.06.17 12.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	80-120	03.06.17 12.02		
4-Bromofluorobenzene	460-00-4	94	%	80-120	03.06.17 12.02		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 4'
Lab Sample Id: 547700-005

Matrix: Soil
Date Collected: 02.22.17 14.00

Date Received: 03.02.17 10.20
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3011928

Date Prep: 03.03.17 14.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	637	4.92	mg/kg	03.03.17 17.53		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3011770

Date Prep: 03.06.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.07.17 06.16	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	57.9	15.0	mg/kg	03.07.17 06.16		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.07.17 06.16	U	1
Total TPH	PHC635	57.9	15.0	mg/kg	03.07.17 06.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.07.17 06.16	
o-Terphenyl	84-15-1	114	%	70-135	03.07.17 06.16	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 4'
Lab Sample Id: 547700-005

Matrix: Soil
Date Collected: 02.22.17 14.00

Date Received: 03.02.17 10.20
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 03.06.17 07.20

Basis: Wet Weight

Seq Number: 3011716

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00151	0.00151	mg/kg	03.06.17 11.46	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.06.17 11.46	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.06.17 11.46	U	1
m_p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	03.06.17 11.46	U	1
o-Xylene	95-47-6	<0.00302	0.00302	mg/kg	03.06.17 11.46	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	03.06.17 11.46	U	1
Total BTEX		<0.00151	0.00151	mg/kg	03.06.17 11.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	109	%	80-120	03.06.17 11.46		
1,4-Difluorobenzene	540-36-3	98	%	80-120	03.06.17 11.46		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 5'
Lab Sample Id: 547700-006

Matrix: Soil
Date Collected: 02.22.17 14.00

Date Received: 03.02.17 10.20
Sample Depth: 5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3011928

Date Prep: 03.03.17 14.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.8	4.90	mg/kg	03.03.17 18.00		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3011770

Date Prep: 03.06.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.07.17 06.34	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	25.4	15.0	mg/kg	03.07.17 06.34		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.07.17 06.34	U	1
Total TPH	PHC635	25.4	15.0	mg/kg	03.07.17 06.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	03.07.17 06.34	
o-Terphenyl	84-15-1	116	%	70-135	03.07.17 06.34	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 5'
Lab Sample Id: 547700-006

Matrix: Soil
Date Collected: 02.22.17 14.00

Date Received: 03.02.17 10.20
Sample Depth: 5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3011716

Date Prep: 03.06.17 07.20

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00148	0.00148	mg/kg	03.06.17 11.29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.06.17 11.29	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.06.17 11.29	U	1
m_p-Xylenes	179601-23-1	<0.00198	0.00198	mg/kg	03.06.17 11.29	U	1
o-Xylene	95-47-6	<0.00296	0.00296	mg/kg	03.06.17 11.29	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	03.06.17 11.29	U	1
Total BTEX		<0.00148	0.00148	mg/kg	03.06.17 11.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	116	%	80-120	03.06.17 11.29		
4-Bromofluorobenzene	460-00-4	115	%	80-120	03.06.17 11.29		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 6'
Lab Sample Id: 547700-007

Matrix: Soil
Date Collected: 02.22.17 14.00

Date Received: 03.02.17 10.20
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 03.03.17 14.55

Basis: Wet Weight

Seq Number: 3011928

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	755	4.99	mg/kg	03.03.17 18.08		1



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: T1- 8'
Lab Sample Id: 547700-008

Matrix: Soil
Date Collected: 02.22.17 14.00

Date Received: 03.02.17 10.20
Sample Depth: 8 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 03.03.17 14.55

Basis: Wet Weight

Seq Number: 3011928

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.1	4.89	mg/kg	03.03.17 18.15		1



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **North-Surface**

Matrix: Soil

Date Received: 03.02.17 10.20

Lab Sample Id: 547700-009

Date Collected: 02.23.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 03.03.17 14.55

Basis: Wet Weight

Seq Number: 3011928

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.99	4.89	mg/kg	03.03.17 18.22		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 03.06.17 07.00

Basis: Wet Weight

Seq Number: 3011770

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.07.17 06.54	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	31.2	15.0	mg/kg	03.07.17 06.54		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.07.17 06.54	U	1
Total TPH	PHC635	31.2	15.0	mg/kg	03.07.17 06.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.07.17 06.54	
o-Terphenyl	84-15-1	109	%	70-135	03.07.17 06.54	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **North-Surface**

Matrix: Soil

Date Received: 03.02.17 10.20

Lab Sample Id: 547700-009

Date Collected: 02.23.17 10.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 03.03.17 16.25

Basis: Wet Weight

Seq Number: 3011637

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00149	0.00149	mg/kg	03.04.17 19.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.04.17 19.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.04.17 19.32	U	1
m_p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	03.04.17 19.32	U	1
o-Xylene	95-47-6	<0.00299	0.00299	mg/kg	03.04.17 19.32	U	1
MTBE	1634-04-4	<0.00996	0.00996	mg/L	03.04.17 19.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.04.17 19.32	U	1
Total BTEX		<0.00149	0.00149	mg/kg	03.04.17 19.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	105	%	80-120	03.04.17 19.32		
1,4-Difluorobenzene	540-36-3	116	%	80-120	03.04.17 19.32		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **North-1'**
Lab Sample Id: 547700-010

Matrix: Soil
Date Collected: 02.23.17 10.00

Date Received: 03.02.17 10.20
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1
Tech: MGO
Analyst: MGO
Seq Number: 3011928

Date Prep: 03.03.17 14.55

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.4	4.93	mg/kg	03.03.17 18.44		1

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3011770

Date Prep: 03.06.17 07.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.07.17 07.14	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	31.2	15.0	mg/kg	03.07.17 07.14		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.07.17 07.14	U	1
Total TPH	PHC635	31.2	15.0	mg/kg	03.07.17 07.14		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	111	%	70-135	03.07.17 07.14		
o-Terphenyl	84-15-1	110	%	70-135	03.07.17 07.14		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **North-1'**
Lab Sample Id: 547700-010

Matrix: Soil
Date Collected: 02.23.17 10.00

Date Received: 03.02.17 10.20
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3011637

Date Prep: 03.03.17 16.25

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00148	0.00148	mg/kg	03.04.17 19.48	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	03.04.17 19.48	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	03.04.17 19.48	U	1
m_p-Xylenes	179601-23-1	<0.00197	0.00197	mg/kg	03.04.17 19.48	U	1
o-Xylene	95-47-6	<0.00295	0.00295	mg/kg	03.04.17 19.48	U	1
MTBE	1634-04-4	<0.00984	0.00984	mg/L	03.04.17 19.48	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	03.04.17 19.48	U	1
Total BTEX		<0.00148	0.00148	mg/kg	03.04.17 19.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	80-120	03.04.17 19.48		
4-Bromofluorobenzene	460-00-4	96	%	80-120	03.04.17 19.48		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **South-Surface**

Matrix: Soil

Date Received: 03.02.17 10.20

Lab Sample Id: 547700-011

Date Collected: 02.23.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 03.03.17 14.55

Basis: Wet Weight

Seq Number: 3011928

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	101	4.98	mg/kg	03.03.17 18.52		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 03.06.17 07.00

Basis: Wet Weight

Seq Number: 3011770

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.07.17 07.34	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.07.17 07.34	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.07.17 07.34	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.07.17 07.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	03.07.17 07.34	
o-Terphenyl	84-15-1	95	%	70-135	03.07.17 07.34	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **South-Surface**

Matrix: Soil

Date Received: 03.02.17 10.20

Lab Sample Id: 547700-011

Date Collected: 02.23.17 10.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 03.03.17 16.25

Basis: Wet Weight

Seq Number: 3011637

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00151	0.00151	mg/kg	03.04.17 20.04	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.04.17 20.04	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.04.17 20.04	U	1
m_p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	03.04.17 20.04	U	1
o-Xylene	95-47-6	<0.00302	0.00302	mg/kg	03.04.17 20.04	U	1
MTBE	1634-04-4	<0.0101	0.0101	mg/L	03.04.17 20.04	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	03.04.17 20.04	U	1
Total BTEX		<0.00151	0.00151	mg/kg	03.04.17 20.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	80-120	03.04.17 20.04		
4-Bromofluorobenzene	460-00-4	106	%	80-120	03.04.17 20.04		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **South-1'**
Lab Sample Id: 547700-012

Matrix: Soil
Date Collected: 02.23.17 10.00

Date Received: 03.02.17 10.20
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3011928

Date Prep: 03.03.17 14.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.7	4.88	mg/kg	03.03.17 19.14		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3011770

Date Prep: 03.06.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.07.17 07.53	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.07.17 07.53	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.07.17 07.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.07.17 07.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	03.07.17 07.53	
o-Terphenyl	84-15-1	92	%	70-135	03.07.17 07.53	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **South-1'**
Lab Sample Id: 547700-012

Matrix: Soil
Date Collected: 02.23.17 10.00

Date Received: 03.02.17 10.20
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 03.06.17 07.20

Basis: Wet Weight

Seq Number: 3011716

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00150	0.00150	mg/kg	03.06.17 09.35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.17 09.35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.17 09.35	U	1
m_p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	03.06.17 09.35	U	1
o-Xylene	95-47-6	<0.00299	0.00299	mg/kg	03.06.17 09.35	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.17 09.35	U	1
Total BTEX		<0.00150	0.00150	mg/kg	03.06.17 09.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	80-120	03.06.17 09.35		
1,4-Difluorobenzene	540-36-3	117	%	80-120	03.06.17 09.35		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **East-Surface**

Matrix: Soil

Date Received: 03.02.17 10.20

Lab Sample Id: 547700-013

Date Collected: 02.23.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 03.03.17 14.55

Basis: Wet Weight

Seq Number: 3011928

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	202	4.92	mg/kg	03.03.17 19.21		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 03.06.17 07.00

Basis: Wet Weight

Seq Number: 3011770

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.07.17 08.50	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.07.17 08.50	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.07.17 08.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.07.17 08.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	03.07.17 08.50	
o-Terphenyl	84-15-1	104	%	70-135	03.07.17 08.50	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **East-Surface**

Matrix: Soil

Date Received: 03.02.17 10.20

Lab Sample Id: 547700-013

Date Collected: 02.23.17 10.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 03.06.17 07.20

Basis: Wet Weight

Seq Number: 3011716

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00285	0.00285	mg/kg	03.06.17 15.45	U	1
Toluene	108-88-3	<0.00380	0.00380	mg/kg	03.06.17 15.45	U	1
Ethylbenzene	100-41-4	<0.00380	0.00380	mg/kg	03.06.17 15.45	U	1
m_p-Xylenes	179601-23-1	<0.00380	0.00380	mg/kg	03.06.17 15.45	U	1
o-Xylene	95-47-6	<0.00570	0.00570	mg/kg	03.06.17 15.45	U	1
Total Xylenes	1330-20-7	<0.00380	0.00380	mg/kg	03.06.17 15.45	U	1
Total BTEX		<0.00285	0.00285	mg/kg	03.06.17 15.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	85	%	80-120	03.06.17 15.45		
4-Bromofluorobenzene	460-00-4	91	%	80-120	03.06.17 15.45		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **East-1'**
Lab Sample Id: 547700-014

Matrix: Soil
Date Collected: 02.23.17 10.00

Date Received: 03.02.17 10.20
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3011928

Date Prep: 03.03.17 14.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	271	4.87	mg/kg	03.03.17 19.29		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3011770

Date Prep: 03.06.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.07.17 09.09	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	17.7	15.0	mg/kg	03.07.17 09.09		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.07.17 09.09	U	1
Total TPH	PHC635	17.7	15.0	mg/kg	03.07.17 09.09		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	03.07.17 09.09	
o-Terphenyl	84-15-1	100	%	70-135	03.07.17 09.09	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **East-1'**
Lab Sample Id: 547700-014

Matrix: Soil
Date Collected: 02.23.17 10.00

Date Received: 03.02.17 10.20
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3011716

Date Prep: 03.06.17 07.20

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00152	0.00152	mg/kg	03.06.17 09.52	U	1
Toluene	108-88-3	<0.00203	0.00203	mg/kg	03.06.17 09.52	U	1
Ethylbenzene	100-41-4	<0.00203	0.00203	mg/kg	03.06.17 09.52	U	1
m_p-Xylenes	179601-23-1	<0.00203	0.00203	mg/kg	03.06.17 09.52	U	1
o-Xylene	95-47-6	<0.00304	0.00304	mg/kg	03.06.17 09.52	U	1
Total Xylenes	1330-20-7	<0.00203	0.00203	mg/kg	03.06.17 09.52	U	1
Total BTEX		<0.00152	0.00152	mg/kg	03.06.17 09.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	90	%	80-120	03.06.17 09.52		
1,4-Difluorobenzene	540-36-3	107	%	80-120	03.06.17 09.52		

COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **West-Surface**

Matrix: Soil

Date Received: 03.02.17 10.20

Lab Sample Id: 547700-015

Date Collected: 02.23.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 03.03.17 14.55

Basis: Wet Weight

Seq Number: 3011928

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	158	4.92	mg/kg	03.03.17 19.36		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 03.06.17 07.00

Basis: Wet Weight

Seq Number: 3011763

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 17.20	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 17.20	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 17.20	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 17.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.06.17 17.20	
o-Terphenyl	84-15-1	116	%	70-135	03.06.17 17.20	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **West-Surface**

Matrix: Soil

Date Received: 03.02.17 10.20

Lab Sample Id: 547700-015

Date Collected: 02.23.17 10.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 03.06.17 07.20

Basis: Wet Weight

Seq Number: 3011716

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00149	0.00149	mg/kg	03.06.17 10.25	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.06.17 10.25	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.06.17 10.25	U	1
m_p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	03.06.17 10.25	U	1
o-Xylene	95-47-6	<0.00299	0.00299	mg/kg	03.06.17 10.25	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	03.06.17 10.25	U	1
Total BTEX		<0.00149	0.00149	mg/kg	03.06.17 10.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	115	%	80-120	03.06.17 10.25		
4-Bromofluorobenzene	460-00-4	105	%	80-120	03.06.17 10.25		



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **West-1'**
Lab Sample Id: 547700-016

Matrix: Soil
Date Collected: 02.23.17 10.00

Date Received: 03.02.17 10.20
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3011928

Date Prep: 03.03.17 14.55

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	158	4.88	mg/kg	03.03.17 19.43		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3011763

Date Prep: 03.06.17 07.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	03.06.17 17.40	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	03.06.17 17.40	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	03.06.17 17.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	03.06.17 17.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	03.06.17 17.40	
o-Terphenyl	84-15-1	108	%	70-135	03.06.17 17.40	



Certificate of Analytical Results 547700



COG Operating LLC, Artesia, NM

Salada Vista State #1

Sample Id: **West-1'**
Lab Sample Id: 547700-016

Matrix: Soil
Date Collected: 02.23.17 10.00

Date Received: 03.02.17 10.20
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 03.06.17 07.20

Basis: Wet Weight

Seq Number: 3011716

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00150	0.00150	mg/kg	03.06.17 10.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.06.17 10.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.06.17 10.41	U	1
m_p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	03.06.17 10.41	U	1
o-Xylene	95-47-6	<0.00301	0.00301	mg/kg	03.06.17 10.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	03.06.17 10.41	U	1
Total BTEX		<0.00150	0.00150	mg/kg	03.06.17 10.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	80-120	03.06.17 10.41		
1,4-Difluorobenzene	540-36-3	106	%	80-120	03.06.17 10.41		

- 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

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QC Summary 547700

COG Operating LLC Salada Vista State #1

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3011928

Matrix: Solid

Prep Method: E300P

MB Sample Id: 721009-1-BLK

LCS Sample Id: 721009-1-BKS

Date Prep: 03.03.17

LCSD Sample Id: 721009-1-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	246	98	250	100	90-110	2	20	mg/kg	03.03.17 16:25	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3011928

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 547700-001

MS Sample Id: 547700-001 S

Date Prep: 03.03.17

MSD Sample Id: 547700-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	315	249	556	97	560	98	90-110	1	20	mg/kg	03.03.17 16:47	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3011928

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 547700-009

MS Sample Id: 547700-009 S

Date Prep: 03.03.17

MSD Sample Id: 547700-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.99	245	253	100	252	100	90-110	0	20	mg/kg	03.03.17 18:30	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3011763

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 721097-1-BLK

LCS Sample Id: 721097-1-BKS

Date Prep: 03.06.17

LCSD Sample Id: 721097-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	1020	102	966	97	70-135	5	35	mg/kg	03.06.17 09:08	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1000	100	950	95	70-135	5	35	mg/kg	03.06.17 09:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		108		104		70-135	%	03.06.17 09:08
o-Terphenyl	117		107		100		70-135	%	03.06.17 09:08



QC Summary 547700

COG Operating LLC Salada Vista State #1

Analytical Method: TPH By SW8015 Mod

Seq Number: 3011770

MB Sample Id: 721098-1-BLK

Matrix: Solid

LCS Sample Id: 721098-1-BKS

Prep Method: TX1005P

Date Prep: 03.06.17

LCSD Sample Id: 721098-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	985	99	988	99	70-135	0	35	mg/kg	03.07.17 03:42	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	920	92	916	92	70-135	0	35	mg/kg	03.07.17 03:42	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	119		102		102		70-135	%	03.07.17 03:42			
o-Terphenyl	126		97		95		70-135	%	03.07.17 03:42			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3011763

Parent Sample Id: 547697-006

Matrix: Soil

MS Sample Id: 547697-006 S

Prep Method: TX1005P

Date Prep: 03.06.17

MSD Sample Id: 547697-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	1050	105	939	94	70-135	11	35	mg/kg	03.06.17 11:51	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	1040	104	954	95	70-135	9	35	mg/kg	03.06.17 11:51	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			108		101		70-135	%	03.06.17 11:51			
o-Terphenyl			106		96		70-135	%	03.06.17 11:51			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3011770

Parent Sample Id: 547700-002

Matrix: Soil

MS Sample Id: 547700-002 S

Prep Method: TX1005P

Date Prep: 03.06.17

MSD Sample Id: 547700-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	43.4	998	1060	102	966	92	70-135	9	35	mg/kg	03.07.17 04:59	
C10-C28 Diesel Range Hydrocarbons	160	998	1270	111	1200	104	70-135	6	35	mg/kg	03.07.17 04:59	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			98		91		70-135	%	03.07.17 04:59			
o-Terphenyl			86		75		70-135	%	03.07.17 04:59			

COG Operating LLC
Salada Vista State #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3011637

MB Sample Id: 721035-1-BLK

Matrix: Solid

LCS Sample Id: 721035-1-BKS

Prep Method: SW5030B

Date Prep: 03.03.17

LCSD Sample Id: 721035-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00151	0.100	0.0868	87	0.0842	83	70-130	3	35	mg/kg	03.04.17 01:48	
Toluene	<0.00201	0.100	0.0957	96	0.0904	90	70-130	6	35	mg/kg	03.04.17 01:48	
Ethylbenzene	<0.00201	0.100	0.0959	96	0.0918	91	71-129	4	35	mg/kg	03.04.17 01:48	
m_p-Xylenes	<0.00201	0.201	0.187	93	0.178	88	70-135	5	35	mg/kg	03.04.17 01:48	
o-Xylene	<0.00301	0.100	0.0962	96	0.0930	92	71-133	3	35	mg/kg	03.04.17 01:48	
MTBE	<0.0100	0.502	0.467	93	0.467	93	71-133	0	35	mg/L	03.04.17 01:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		107		99		80-120	%	03.04.17 01:48
4-Bromofluorobenzene	94		92		94		80-120	%	03.04.17 01:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3011716

MB Sample Id: 721088-1-BLK

Matrix: Solid

LCS Sample Id: 721088-1-BKS

Prep Method: SW5030B

Date Prep: 03.06.17

LCSD Sample Id: 721088-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00151	0.101	0.0862	85	0.0872	86	70-130	1	35	mg/kg	03.06.17 07:56	
Toluene	<0.00201	0.101	0.0947	94	0.0962	95	70-130	2	35	mg/kg	03.06.17 07:56	
Ethylbenzene	<0.00201	0.101	0.0975	97	0.0967	96	71-129	1	35	mg/kg	03.06.17 07:56	
m_p-Xylenes	<0.00201	0.201	0.190	95	0.188	93	70-135	1	35	mg/kg	03.06.17 07:56	
o-Xylene	<0.00302	0.101	0.0998	99	0.100	99	71-133	0	35	mg/kg	03.06.17 07:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		106		104		80-120	%	03.06.17 07:56
4-Bromofluorobenzene	93		100		95		80-120	%	03.06.17 07:56

Analytical Method: BTEX by EPA 8021B

Seq Number: 3011846

MB Sample Id: 721149-1-BLK

Matrix: Solid

LCS Sample Id: 721149-1-BKS

Prep Method: SW5030B

Date Prep: 03.07.17

LCSD Sample Id: 721149-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00149	0.0990	0.0959	97	0.110	110	70-130	14	35	mg/kg	03.07.17 11:59	
Toluene	<0.00198	0.0990	0.103	104	0.118	118	70-130	14	35	mg/kg	03.07.17 11:59	
Ethylbenzene	<0.00198	0.0990	0.101	102	0.117	117	71-129	15	35	mg/kg	03.07.17 11:59	
m_p-Xylenes	<0.00198	0.198	0.198	100	0.230	115	70-135	15	35	mg/kg	03.07.17 11:59	
o-Xylene	<0.00297	0.0990	0.103	104	0.119	119	71-133	14	35	mg/kg	03.07.17 11:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	115		103		101		80-120	%	03.07.17 11:59
4-Bromofluorobenzene	89		96		96		80-120	%	03.07.17 11:59



QC Summary 547700

COG Operating LLC Salada Vista State #1

Analytical Method: BTEX by EPA 8021B

Seq Number: 3011716

Parent Sample Id: 547700-012

Matrix: Soil

MS Sample Id: 547700-012 S

Prep Method: SW5030B

Date Prep: 03.06.17

MSD Sample Id: 547700-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00150	0.100	0.0843	84	0.0834	84	70-130	1	35	mg/kg	03.06.17 08:29	
Toluene	<0.00200	0.100	0.0880	88	0.0896	90	70-130	2	35	mg/kg	03.06.17 08:29	
Ethylbenzene	<0.00200	0.100	0.0905	91	0.0882	88	71-129	3	35	mg/kg	03.06.17 08:29	
m_p-Xylenes	<0.00200	0.200	0.175	88	0.172	86	70-135	2	35	mg/kg	03.06.17 08:29	
o-Xylene	<0.00301	0.100	0.0887	89	0.0906	91	71-133	2	35	mg/kg	03.06.17 08:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		108		80-120	%	03.06.17 08:29
4-Bromofluorobenzene	104		107		80-120	%	03.06.17 08:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3011846

Parent Sample Id: 547957-003

Matrix: Soil

MS Sample Id: 547957-003 S

Prep Method: SW5030B

Date Prep: 03.07.17

MSD Sample Id: 547957-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00280	0.187	0.151	81	0.158	86	70-130	5	35	mg/kg	03.07.17 12:33	
Toluene	<0.00373	0.187	0.157	84	0.179	98	70-130	13	35	mg/kg	03.07.17 12:33	
Ethylbenzene	<0.00373	0.187	0.154	82	0.162	89	71-129	5	35	mg/kg	03.07.17 12:33	
m_p-Xylenes	<0.00373	0.373	0.307	82	0.321	88	70-135	4	35	mg/kg	03.07.17 12:33	
o-Xylene	<0.00560	0.187	0.158	84	0.165	90	71-133	4	35	mg/kg	03.07.17 12:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		119		80-120	%	03.07.17 12:33
4-Bromofluorobenzene	117		111		80-120	%	03.07.17 12:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3011637

Parent Sample Id: 547697-012

Matrix: Soil

MS Sample Id: 547697-012 S

Prep Method: SW5030B

Date Prep: 03.03.17

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.00148	0.0988	0.0814	82	70-130	mg/kg	03.04.17 02:53	
Toluene	<0.00198	0.0988	0.0927	94	70-130	mg/kg	03.04.17 02:53	
Ethylbenzene	<0.00198	0.0988	0.109	110	71-129	mg/kg	03.04.17 02:53	
m_p-Xylenes	<0.00198	0.198	0.202	102	70-135	mg/kg	03.04.17 02:53	
o-Xylene	<0.00296	0.0988	0.118	119	71-133	mg/kg	03.04.17 02:53	
MTBE	<0.00988	0.494	<0.00988	0	71-133	mg/L	03.04.17 02:53	X

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		80-120	%	03.04.17 02:53
4-Bromofluorobenzene	105		80-120	%	03.04.17 02:53

Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 3 of 3

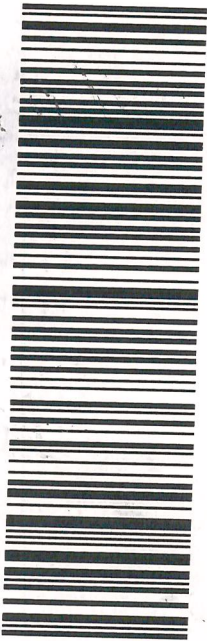
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

www.xenco.com										Xenco Quote #	Xenco Job #				
Client / Reporting Information				Project Information				Analytical Information		Matrix Codes					
Company Name / Branch: COG Operating LLC				Project Name/Number: Salada Vista State #1						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					
Company Address: 2407 PECOS Avenue Artesia NM 88210				Project Location:											
Email: alleb@concho.com dneel2@concho.com rhaskei@concho.com				Invoice To: COG Operating LLC Attn: Robert McNeill 600 W. Illinois Midland TX 79701											
Project Contact: Aaron Lieb				PO Number:											
Sampler's Name: Aaron Lieb															
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	North - Surface	Surf	3/17/17	10:14am											BTEX
2	North - 1'	1'		10:14am											TPH
3	South - Surface	Surf		10:14am											chloride
4	South - 1'	1'		10:14am											
5	East - Surface	Surf		10:14am											
6	East - 1'	1'		10:14am											
7	West - Surface	Surf		10:14am											
8	West - 1'	1'		10:14am											
9															
10															
Turnaround Time (Business days)															
Data Deliverable Information															
Notes:															
TAT Starts Day received by Lab, if received by 5:00 pm															
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY															
FED-EX / UPS: Tracking #															
Relinquished by Sampler:															
Relinquished By:															
Date Time:															
Received By:															
Date Time:															
Custody Seal #															
Preserved where applicable															
On Ice															
Cooler Temp.															
Thermo. Corr. Factor															

Part # 156148-434 RRD 04/16



41 MAFA

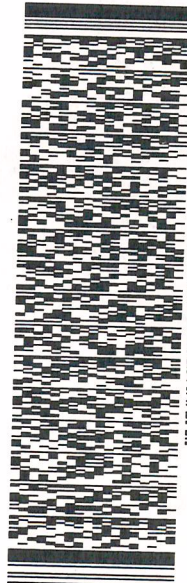
79701
TX-US LBB

TRK# 6606 3913 7980

THU - 02 MAR 10:30A
PRIORITY OVERNIGHT



J151315081301uv



(432) 563-1800
INV: REF:
PO: DEPT:



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 03/02/2017 10:20:00 AM

Work Order #: 547700

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)?	1.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	Yes
#5 *Custody Seals intact on shipping container/ cooler?	Yes
#6 Custody Seals intact on sample bottles?	Yes
#7 *Custody Seals Signed and dated?	Yes
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	N/A
#21 VOC samples have zero headspace?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 03/02/2017

Checklist reviewed by:

Holly Taylor

Holly Taylor

Date: 03/02/2017