

SITE INFORMATION

Report Type: Work Plan 2RP-3802

General Site Information:

Site:	Showstopper 7 Federal Com #001H					
Company:	COG Operating					
Section, Township and Range	Unit A	Sec. 7	T 25S	R 29E		
Lease Number:	API No. 30-015-36559					
County:	Eddy					
Facility GPS:	32.1511154° N			104.0167618° W		
Release GPS:	32.15251° N			104.01238° W		
Surface Owner:	Federal					
Directions:	From the intersection of Longhorn Rd and Pipeline Road Number 1, travel northeast on Pipeline Road Number 1 for 1.8 miles. After 1.8 miles, turn north(left) onto unnamed lease road. Travel north for 2.1 miles and when you arrive at a "Y" stay left. The road will curve northwest and continue on this road for 1.19 miles until the unnamed lease road will "Y" again. Turn left and follow the lease road north for 1.95 miles and turn West (left). Travel west on this unnamed lease road for 0.25 miles and stay right (west) at the "Y" for another 0.70 miles and area of rupture flowline will be on the south side (left) of the lease road.					

Release Data:

Date Released:	7/16/2016
Type Release:	Produced Water
Source of Contamination:	Damaged Flowline
Fluid Released:	20 bbls
Fluids Recovered:	0 bbls

Official Communication:

Name:	Robert McNeil	Ike Tavarez
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.Tavarez@tetrattech.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>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



TETRA TECH

October 31, 2016

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

Re: Work Plan for the COG Operating LLC., Showstopper 7 Federal Com #001H, Unit A, Section 7, Township 25 South, Range 29 East, Eddy County, New Mexico. 2RP-3802

Ms. Patterson:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to assess a spill from Showstopper 7 Federal Com #001H, Unit A, Section 7, Township 25 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.15251°, W 104.01238°. 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 July 16, 2016, and released approximately twenty (20) barrels of produced water due to a ruptured poly flowline. None of the fluids were recovered. The initial C-141 form lists the site as being in Section 7, however the release occurred in the pasture in Section 5, and measured approximately 50' x 130'. The initial C-141 form is included in Appendix A.

Groundwater

According to the NMOCD groundwater map, the average depth to groundwater in this area is between 50' to 75' below surface. No water wells were listed in Section 7 or 5. 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 the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as

Tetra Tech

4000 North Big Spring, Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



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 August 15, 2016, Tetra Tech personnel were onsite to evaluate and sample the release area. Three (3) auger holes (AH-1, AH-2, and AH-3) were installed to depths of 3.5-4.5' below surface. Additionally, one background auger hole (AH-4 Background) was installed to 2.0-2.5' below surface to evaluate the native soils. Deeper samples were not collected due to dense caliche formations in the area. 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 D. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, none of the areas sampled showed total TPH or BTEX concentrations above the laboratory reporting limits. However, the areas of auger holes (AH-1, AH-2 and AH-3) showed elevated chloride concentrations in the shallow soils with chloride highs of 688 mg/kg at 0-1', 22,800 mg/kg at 0-1', and 16,400 mg/kg at 2-2.5' below surface, respectively. These areas were not vertically defined. The background auger hole (AH-4 Background) did not show any significant chloride concentrations in the native soils.

Based on the laboratory data, Tetra Tech personnel returned to the site on October 12, 2016, to install three (3) boreholes (BH-1, BH-2, and BH-3) to depths of 20-25' below surface in order to vertically define the chloride impacts. Selected samples were analyzed for chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix D. The borehole drilling logs are included in Appendix C. The sampling results are summarized in Table 1. The borehole locations are shown on Figure 3.

Referring to Table 1, the area of BH-1 (AH-1) showed a chloride spike of 1,100 mg/kg at 6-7', which then declined with depth to 48.0 mg/kg at 14-15' below surface. The chloride concentrations in the area of BH-2 (AH-2) also declined with depth from 11,700 mg/kg at 4-5' to 336 mg/kg at 20-25'; however there was a chloride spike of 4,560 mg/kg at 14-15' below surface. The area of BH-3 (AH-3) also showed chloride concentrations that declined with depth from 3,320 mg/kg at 6-7' to 64.0 mg/kg at 19-20' below surface. The sample at the interval of 6-7' at borehole (BH-2) was lost during sampling. However, the chloride concentrations appear to be similar and correlate to those found at borehole (BH-3).



TETRA TECH

Work Plan

Based on the results, COG proposes to remove impacted material as highlighted (green) in Table 1 and shown on Figure 4. The areas of boreholes (BH-2 and BH-3) will be excavated to approximately 6.0' to 7.0' below surface to remove the chloride impacted soils. The area of borehole (BH-1) did not show a significant chloride impact to the subsurface soils and the concentrations detected do not appear to be an environmental concern. The excavated areas will be backfilled with clean material to surface grade. Once completed, the excavated material will be transported offsite for proper disposal. The area will then be reseeded in June 2017 to coincide with the rainy season in southeastern New Mexico.

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, Tetra Tech will excavate the impacted soils to the maximum extent practicable

Upon completion, a final report 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 me at (432) 682-4559.

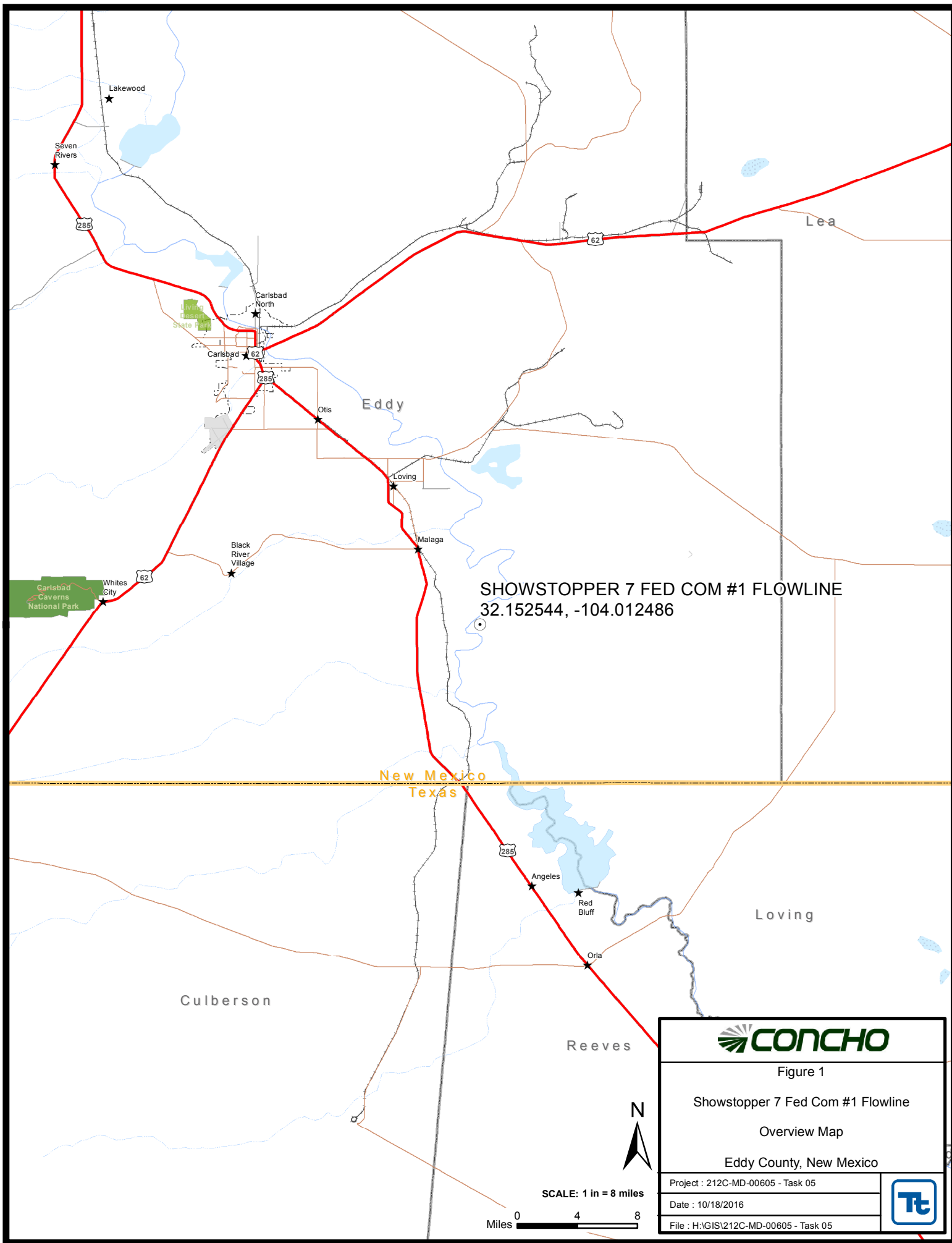
Respectfully submitted,
TETRA TECH

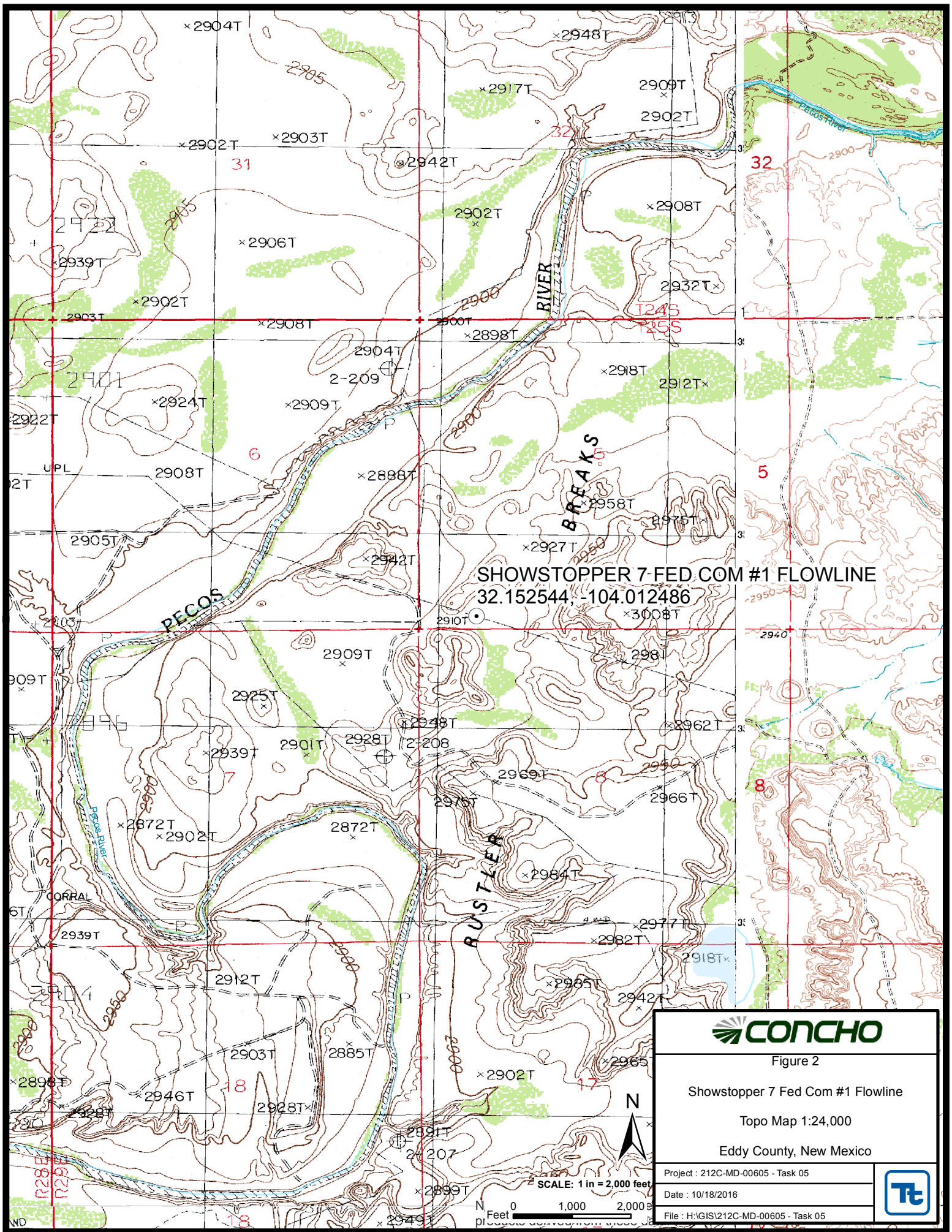
Clair Gonzales,
Geologist I

Ike Tavarez,
Senior Project Manager, P.G.

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

Figures







EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- BORE HOLE SAMPLE LOCATIONS
- ★ LEAK SOURCE
- SPILL AREA



Figure 3

Showstopper 7 Fed Com #1 Flowline
(32.15252, -104.01239)

Spill Assessment Map

Eddy County, New Mexico

Project : 212C-MD-00605 - Task 05

Date : 10/18/2016

File : H:\GIS\212C-MD-00605 - Task 05





EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- BORE HOLE SAMPLE LOCATIONS
- ★ LEAK SOURCE
- ▨ SPILL AREA

SCALE: 1 IN = 50 FEET

Feet 0 25 50



Figure 4

Showstopper 7 Fed Com #1 Flowline
(32.15252, -104.01239)

Proposed Excavation Area & Depth Map

Eddy County, New Mexico

Project : 212C-MD-00605 - Task 05

Date : 10/18/2016

File : H:\GIS\212C-MD-00605 - Task 05



Tables

Table 1
COG Operating LLC.
Showstopper 7 Federal Commingle #1H
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-1	8/15/2016	0-1	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	688
	"	1-1.5	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	192
	"	2-2.5	X		-	-	-	-	-	-	-	-	144
	"	3-3.5	X		-	-	-	-	-	-	-	-	496
	8/16/2016	4-4.5	X		-	-	-	-	-	-	-	-	400
BH-1	10/12/2016	6-7	X		-	-	-	-	-	-	-	-	1,100
	"	9-10	X		-	-	-	-	-	-	-	-	720
	"	14-15	X		-	-	-	-	-	-	-	-	48.0
	"	19-20	X		-	-	-	-	-	-	-	-	64.0
AH-2	8/15/2016	0-1	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	22,800
	"	1-1.5	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	16,000
	"	2-2.5	X		-	-	-	-	-	-	-	-	15,200
	8/16/2016	3-3.5	X		-	-	-	-	-	-	-	-	15,200
BH-2	10/12/2016	4-5	X		-	-	-	-	-	-	-	-	11,700
	"	9-10	X		-	-	-	-	-	-	-	-	160
	"	14-15	X		-	-	-	-	-	-	-	-	4,560
	"	19-20	X		-	-	-	-	-	-	-	-	112
	"	24-25	X		-	-	-	-	-	-	-	-	336

Table 1
COG Operating LLC.
Showstopper 7 Federal Commingle #1H
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-3	8/15/2016	0-1	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	11,200
	"	1-1.5	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	15,200
	"	2-2.5	X		-	-	-	-	-	-	-	-	16,400
	8/16/2016	3-3.5	X		-	-	-	-	-	-	-	-	12,800
BH-3	10/12/2016	4-5	X		-	-	-	-	-	-	-	-	2,520
	"	6-7	X		-	-	-	-	-	-	-	-	3,320
	"	9-10	X		-	-	-	-	-	-	-	-	400
	"	14-15	X		-	-	-	-	-	-	-	-	192
	"	19-20	X		-	-	-	-	-	-	-	-	64.0
AH-4 Background	8/15/2016	0-1	X		-	-	-	-	-	-	-	-	96.0
	"	1-1.5	X		-	-	-	-	-	-	-	-	32.0
	"	2-2.5	X		-	-	-	-	-	-	-	-	<16.0

(-) 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

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-141
Revised August 8, 2011

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

RECEIVED

Release Notification and Corrective Action

NAB 1421050720 OPERATOR ☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC <u>229137</u>	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: SHOWSTOPPER 7 FEDERAL COM #001H	Facility Type: Well

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-36559
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	7	25S	29E	330'	North	480'	East	Eddy

Latitude/Longitude 32.1511154,-104.0167618

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 20 bbls PW	Volume Recovered: 0 bbls PW
Source of Release: Poly Flowline Leak	Date and Hour of Occurrence: 7/16/2016, unknown	Date and Hour of Discovery: 7/16/2016 8:00 am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

This release was caused by a ruptured poly flowline. Although a vacuum truck was dispatched, due to the hot weather no fluid was recoverable.

Describe Area Affected and Cleanup Action Taken.*

This release occurred in the pasture along the road in section 8. It impacted approximately 3500 sq ft. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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

Signature: <u>Amanda T. Davis</u>	OIL CONSERVATION DIVISION	
Printed Name: Amanda Trujillo Davis	Approved by Environmental Specialist: <u>[Signature]</u>	
Title: Senior Environmental Coordinator	Approval Date: <u>7/25/16</u>	Expiration Date: <u>N/A</u>
E-mail Address: atrujillo@concho.com	Conditions of Approval:	
Date: July 22, 2016 Phone: 575-748-6940	Remediation per O.C.D. Rules & Guidelines <input type="checkbox"/> Attached <input type="checkbox"/>	

SUBMIT REMEDIATION PROPOSAL NO
LATER THAN: 9/1/16

2RP-3802

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Showstopper 7 Federal Com #001H
Eddy County, New Mexico

25 South			28 East		
6	5	4	35	3	2
	59			32	1
7	8	9		10	11
					12
18	17	16	15	48	14
67			49		13
19	20	21	22	23	24
	96				
30	29	28	27	26	40
	15	90			
31	32	33	34	35	36
					40

25 South			29 East		
6	5	4	3	2	1
40					
7	8	9	10	11	12
			40		
18	17	16	15	14	13
			60		
19	20	21	22	23	24
30	29	28	27	26	25
31	32	115	33	34	35
					36

25 South			30 East		
6	5	4	3	2	1
				295	
7	264	8	9	295	10
					390
18	17	16	15	14	13
19	20	21	265	22	23
		268			24
30	29	28	27	26	25
31	32	33	34	35	36

26 South			28 East		
6	5	4	3	2	1
				120	
7	8	9	10	11	12
					100
18	17	16	15	14	13
				120	56
19	20	21	22	23	24
			120		
30	29	28	27	26	25
31	32	33	34	35	36

26 South			29 East		
6	5	4	3	2	1
	78				
7	8	9	10	11	12
18	17	16	15	14	13
		125			
19	20	21	22	57	23
			69		24
30	29	28	27	26	25
31	32	33	34	35	36

26 South			30 East		
6	5	4	3	2	1
	179				
7	180	8	9	10	11
					12
18	17	16	15	14	13
19	20	21	22	23	24
					180
30	29	28	27	26	25
31	32	33	34	35	36

- 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	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 01337	C	ED		2	1	30	25S	29E		591926	3552642*	180	30	150
C 01880	C	ED		3	3	2	06	25S	29E	592161	3558605*	85	40	45
C 02371	C	ED		2	3	15	25S	29E		596741	3555106*	200	60	140
C 02459	C	ED		4	4	1	02	25S	29E	598422	3558663*	150		
C 02518	C	ED		3	4	08	25S	29E		593895	3556300*	462		
C 02680	C	ED		2	3	15	25S	29E		596741	3555106*	200		
RA 07162 EXP2		ED		1	3	1	10	25S	29E	596214	3557222*	55	40	15

Average Depth to Water: **42 feet**

Minimum Depth: **30 feet**

Maximum Depth: **60 feet**

Record Count: 7

PLSS Search:

Township: 25S

Range: 29E

*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.

Appendix C

SAMPLE LOG

Client:	COG			
Site Name	Showstopper 7 Fed Com #1			
Boring/Well:	BH-1			
GPS	32.15251, -104.01238			
Project #:	212C-MD-00605.05			
Total Depth	20'			
Date Installed:	10/12/2016			

[illegible]

SAMPLE LOG

Client:	COG			
Site Name	Showstopper 7 Fed Com #1			
Boring/Well:	BH-2			
GPS	32.15254, -104.01268			
Project #:	212C-MD-00605.05			
Total Depth	25'			
Date Installed:	10/12/2016			

[illegible]

SAMPLE LOG

Client:	COG			
Site Name	Showstopper 7 Fed Com #1			
Boring/Well:	BH-3			
GPS	32.15261, -104.01260			
Project #:	212C-MD-00605.05			
Total Depth	20'			
Date Installed:	10/12/2016			

[illegible]

Appendix D



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

August 23, 2016

DAKOTA NEEL

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: SHOWSTOPPER 7 FED COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 08/16/16 16:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

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

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONEReported:
23-Aug-16 09:20

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH-1 (0-1')	H601832-01	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-1 (1-1.5')	H601832-02	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-1 (2-2.5')	H601832-03	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-1 (3-3.5')	H601832-04	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-1 (4-4.5')	H601832-05	Soil	16-Aug-16 00:00	16-Aug-16 16:45
AH-2 (0-1')	H601832-06	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-2 (1-1.5')	H601832-07	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-2 (2-2.5')	H601832-08	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-2 (3-3.5')	H601832-09	Soil	16-Aug-16 00:00	16-Aug-16 16:45
AH-3 (0-1')	H601832-10	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-3 (1-1.5')	H601832-11	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-3 (2-2.5')	H601832-12	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-3 (3-3.5')	H601832-13	Soil	16-Aug-16 00:00	16-Aug-16 16:45
AH-4 BACKGROUND (0-1')	H601832-14	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-4 BACKGROUND (1-1.5')	H601832-15	Soil	15-Aug-16 00:00	16-Aug-16 16:45
AH-4 BACKGROUND (2-2.5')	H601832-16	Soil	15-Aug-16 00:00	16-Aug-16 16:45

Cardinal Laboratories

*=Accredited Analyte

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

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONE

Reported:
23-Aug-16 09:20

AH-1 (0-1') H601832-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	688		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Toluene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	6081701	MS	17-Aug-16	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			108 %	73.6-140		6081701	MS	17-Aug-16	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	

Surrogate: 1-Chlorooctane			84.4 %	35-147		6081702	MS	17-Aug-16	8015B	
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Surrogate: 1-Chlorooctadecane			93.7 %	28-171		6081702	MS	17-Aug-16	8015B	
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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONE

Reported:
23-Aug-16 09:20

AH-1 (1-1.5') H601832-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	192		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Toluene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	6081701	MS	17-Aug-16	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.6-140 6081701 MS 17-Aug-16 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	

Surrogate: 1-Chlorooctane 84.8 % 35-147 6081702 MS 17-Aug-16 8015B

Surrogate: 1-Chlorooctadecane 95.3 % 28-171 6081702 MS 17-Aug-16 8015B

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

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONEReported:
23-Aug-16 09:20**AH-1 (2-2.5')
H601832-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	144		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONEReported:
23-Aug-16 09:20**AH-1 (3-3.5')
H601832-04 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	496		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONEReported:
23-Aug-16 09:20**AH-1 (4-4.5')
H601832-05 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	400		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONE

Reported:
23-Aug-16 09:20

AH-2 (0-1') H601832-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	22800		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Toluene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			108 %	73.6-140		6081701	MS	17-Aug-16	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	
Surrogate: 1-Chlorooctane			93.8 %	35-147		6081702	MS	17-Aug-16	8015B	
Surrogate: 1-Chlorooctadecane			108 %	28-171		6081702	MS	17-Aug-16	8015B	

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

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONE

Reported:
23-Aug-16 09:20

AH-2 (1-1.5') H601832-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	16000		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Toluene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			108 %	73.6-140		6081701	MS	17-Aug-16	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	
Surrogate: 1-Chlorooctane			94.2 %	35-147		6081702	MS	17-Aug-16	8015B	
Surrogate: 1-Chlorooctadecane			104 %	28-171		6081702	MS	17-Aug-16	8015B	

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

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONEReported:
23-Aug-16 09:20**AH-2 (2-2.5')
H601832-08 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	15200		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONEReported:
23-Aug-16 09:20**AH-2 (3-3.5')
H601832-09 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	15200		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONE

Reported:
23-Aug-16 09:20

AH-3 (0-1') H601832-10 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	11200		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Toluene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			107 %	73.6-140		6081701	MS	17-Aug-16	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	
Surrogate: 1-Chlorooctane			87.2 %	35-147		6081702	MS	17-Aug-16	8015B	
Surrogate: 1-Chlorooctadecane			94.4 %	28-171		6081702	MS	17-Aug-16	8015B	

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

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONE

Reported:
23-Aug-16 09:20

AH-3 (1-1.5') H601832-11 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	15200		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Toluene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	6081701	MS	17-Aug-16	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	6081701	MS	17-Aug-16	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 109 % 73.6-140 6081701 MS 17-Aug-16 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	6081702	MS	17-Aug-16	8015B	

Surrogate: 1-Chlorooctane 92.4 % 35-147 6081702 MS 17-Aug-16 8015B

Surrogate: 1-Chlorooctadecane 107 % 28-171 6081702 MS 17-Aug-16 8015B

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

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONEReported:
23-Aug-16 09:20**AH-3 (2-2.5')
H601832-12 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	16400		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONEReported:
23-Aug-16 09:20**AH-3 (3-3.5')
H601832-13 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	12800		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Cardinal Laboratories

*=Accredited Analyte

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

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONEReported:
23-Aug-16 09:20**AH-4 BACKGROUND (0-1')****H601832-14 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	96.0		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONEReported:
23-Aug-16 09:20**AH-4 BACKGROUND (1-1.5')****H601832-15 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	32.0		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONEReported:
23-Aug-16 09:20**AH-4 BACKGROUND (2-2.5')****H601832-16 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	<16.0		16.0	mg/kg	4	6081706	AC	18-Aug-16	4500-Cl-B	
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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 COG OPERATING
 P. O. BOX 1630
 ARTESIA NM, 88210

 Project: SHOWSTOPPER 7 FED COM #1H
 Project Number: NONE GIVEN
 Project Manager: DAKOTA NEEL
 Fax To: NONE

 Reported:
 23-Aug-16 09:20

Inorganic Compounds - Quality Control
Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 6081706 - 1:4 DI Water									
Blank (6081706-BLK1)									
					Prepared: 17-Aug-16 Analyzed: 18-Aug-16				
Chloride	ND	16.0	mg/kg						
LCS (6081706-BS1)									
					Prepared: 17-Aug-16 Analyzed: 18-Aug-16				
Chloride	400	16.0	mg/kg	400	100	80-120			
LCS Dup (6081706-BSD1)									
					Prepared: 17-Aug-16 Analyzed: 18-Aug-16				
Chloride	400	16.0	mg/kg	400	100	80-120	0.00	20	

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

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONE

Reported:
23-Aug-16 09:20

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 6081701 - Volatiles

Blank (6081701-BLK1)

Prepared & Analyzed: 17-Aug-16

Benzene	ND	0.050	mg/kg						
Toluene	ND	0.050	mg/kg						
Ethylbenzene	ND	0.050	mg/kg						
Total Xylenes	ND	0.150	mg/kg						
Total BTEX	ND	0.300	mg/kg						
Surrogate: 4-Bromofluorobenzene (PID)	0.0537		mg/kg	0.0500		107	73.6-140		

LCS (6081701-BS1)

Prepared & Analyzed: 17-Aug-16

Benzene	2.32	0.050	mg/kg	2.00		116	82.6-122		
Toluene	2.37	0.050	mg/kg	2.00		119	72.9-122		
Ethylbenzene	2.29	0.050	mg/kg	2.00		114	65.4-131		
Total Xylenes	6.90	0.150	mg/kg	6.00		115	73.8-125		
Surrogate: 4-Bromofluorobenzene (PID)	0.0538		mg/kg	0.0500		108	73.6-140		

LCS Dup (6081701-BSD1)

Prepared & Analyzed: 17-Aug-16

Benzene	2.35	0.050	mg/kg	2.00		117	82.6-122	1.22	8.23
Toluene	2.41	0.050	mg/kg	2.00		120	72.9-122	1.57	8.71
Ethylbenzene	2.33	0.050	mg/kg	2.00		116	65.4-131	1.73	9.46
Total Xylenes	7.00	0.150	mg/kg	6.00		117	73.8-125	1.52	8.66
Surrogate: 4-Bromofluorobenzene (PID)	0.0530		mg/kg	0.0500		106	73.6-140		

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

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: SHOWSTOPPER 7 FED COM #1H
Project Number: NONE GIVEN
Project Manager: DAKOTA NEEL
Fax To: NONE

Reported:
23-Aug-16 09:20

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 6081702 - General Prep - Organics

Blank (6081702-BLK1)

Prepared & Analyzed: 17-Aug-16

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	47.6		mg/kg	50.0		95.1	35-147			
Surrogate: 1-Chlorooctadecane	52.0		mg/kg	50.0		104	28-171			

LCS (6081702-BS1)

Prepared & Analyzed: 17-Aug-16

GRO C6-C10	189	10.0	mg/kg	200		94.3	76.7-115			
DRO >C10-C28	198	10.0	mg/kg	200		98.9	78.3-122			
Total TPH C6-C28	386	10.0	mg/kg	400		96.6	79.8-117			
Surrogate: 1-Chlorooctane	49.3		mg/kg	50.0		98.6	35-147			
Surrogate: 1-Chlorooctadecane	52.8		mg/kg	50.0		106	28-171			

LCS Dup (6081702-BSD1)

Prepared & Analyzed: 17-Aug-16

GRO C6-C10	204	10.0	mg/kg	200		102	76.7-115	7.74	9.42	
DRO >C10-C28	212	10.0	mg/kg	200		106	78.3-122	7.06	13.2	
Total TPH C6-C28	416	10.0	mg/kg	400		104	79.8-117	7.39	10.7	
Surrogate: 1-Chlorooctane	51.7		mg/kg	50.0		103	35-147			
Surrogate: 1-Chlorooctadecane	56.1		mg/kg	50.0		112	28-171			

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

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

Analysis Request of Chain of Custody Record



TETRA TECH

1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

H601632

CLIENT NAME: COG SITE MANAGER: Adrian Garcia

PROJECT NO.: 016-m1-00605 PROJECT NAME: COG - Showstopper 7 Fed Con #14

LAB I.D. NUMBER: 2016 DATE: 8/15 TIME: 5 MATRIX: X COMP: AH 1 GRAB: (0-1) SAMPLE IDENTIFICATION: Eddy Co. NM

NUMBER OF CONTAINERS: 1 FILTERED (Y/N): N HCL: X HNO3: X ICE: X NONE: X

BTX 8021B
TPH 8015 MOD. TX1005 (Ext. to C35)
PAH 8270
RCRA Metals Ag As Ba Cd Cr Pb Hg Se
TCLP Metals Ag As Ba Cd Vr Pd Hg Se
TCLP Volatiles
TCLP Semi Volatiles
RCI
GC.MS Vol. 8240/8260/624
GC.MS Semi. Vol. 8270/625
PCB's 8080/608
Pest. 808/608
Chloride
Gamma Spec.
Alpha Beta (Air)
PLM (Asbestos)
Major Anions/Cations, pH, TDS

PAGE: 1 OF: 2
ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS	
1	8/15		S	X	AH 1	(0-1)	1	N			X		X	X	X															
2	8/15					(1-1.5')							X	X	X															
3	8/15					(2-2.5')							X	X	X															
4	8/15					(3-3.5')							X	X	X															
5	8/16					(4-4.5')							X	X	X															
6	8/15					AH 2 (0-1)							X	X	X															
7	8/15					(1-1.5')							X	X	X															
8	8/15					(2-2.5')							X	X	X															
9	8/16					(2-2.5') (3-3.5')							X	X	X															
10	8/15					AH 3 (0-1)							X	X	X															

RELINQUISHED BY: (Signature) Adrian Garcia Date: 8/16/16 Time: 4:45
RELINQUISHED BY: (Signature) Adrian Garcia Date: 8/16/16 Time: 4:45
RELINQUISHED BY: (Signature) Adrian Garcia Date: 8/16/16 Time: 4:45
RECEIVING LABORATORY: THE TACON RECEIVED BY: (Signature) THE TACON Date: 8/16/16 Time: 4:45
ADDRESS: THE TACON STATE: TX ZIP: 79705
CITY: THE TACON PHONE: THE TACON DATE: THE TACON TIME: THE TACON
CONTACT: THE TACON

SAMPLE CONDITION WHEN RECEIVED: 3.5c REMARKS: #75
Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

October 14, 2016

IKE TAVAREZ

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: SHOWSTOPPER 7 FED COM #1

Enclosed are the results of analyses for samples received by the laboratory on 10/12/16 15:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

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

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH-1 (AH-1) 6-7	H602308-01	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-1 (AH-1) 9-10	H602308-02	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-1 (AH-1) 14-15	H602308-03	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-1 (AH-1) 19-20	H602308-04	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-2 (AH-2) 4-5	H602308-05	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-2 (AH-2) 9-10	H602308-06	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-2 (AH-2) 14-15	H602308-07	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-2 (AH-2) 19-20	H602308-08	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-2 (AH-2) 24-25	H602308-09	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-3 (AH-3) 4-5	H602308-10	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-3 (AH-3) 6-7	H602308-11	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-3 (AH-3) 9-10	H602308-12	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-3 (AH-3) 14-15	H602308-13	Soil	12-Oct-16 00:00	12-Oct-16 15:50
BH-3 (AH-3) 19-20	H602308-14	Soil	12-Oct-16 00:00	12-Oct-16 15:50

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-1 (AH-1) 6-7
H602308-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1100		16.0	mg/kg	4	6101308	AC	13-Oct-16	4500-Cl-B	
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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-1 (AH-1) 9-10****H602308-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	--------------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	720		16.0	mg/kg	4	6101308	AC	13-Oct-16	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-1 (AH-1) 14-15****H602308-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	48.0		16.0	mg/kg	4	6101308	AC	13-Oct-16	4500-Cl-B	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-1 (AH-1) 19-20****H602308-04 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	64.0		16.0	mg/kg	4	6101308	AC	14-Oct-16	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-2 (AH-2) 4-5****H602308-05 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	11700		16.0	mg/kg	4	6101308	AC	14-Oct-16	4500-Cl-B	
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Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-2 (AH-2) 9-10****H602308-06 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	160		16.0	mg/kg	4	6101308	AC	14-Oct-16	4500-Cl-B	
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Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-2 (AH-2) 14-15****H602308-07 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	4560		16.0	mg/kg	4	6101308	AC	14-Oct-16	4500-Cl-B	
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Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-2 (AH-2) 19-20****H602308-08 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	112		16.0	mg/kg	4	6101308	AC	14-Oct-16	4500-Cl-B	
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Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-2 (AH-2) 24-25****H602308-09 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	336		16.0	mg/kg	4	6101308	AC	14-Oct-16	4500-Cl-B	
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Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-3 (AH-3) 4-5****H602308-10 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2520		16.0	mg/kg	4	6101308	AC	14-Oct-16	4500-Cl-B	
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Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-3 (AH-3) 6-7****H602308-11 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	3320		16.0	mg/kg	4	6101308	AC	14-Oct-16	4500-Cl-B	
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Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-3 (AH-3) 9-10****H602308-12 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	400		16.0	mg/kg	4	6101308	AC	14-Oct-16	4500-Cl-B	
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P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-3 (AH-3) 14-15****H602308-13 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	192		16.0	mg/kg	4	6101308	AC	14-Oct-16	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONEReported:
14-Oct-16 16:15**BH-3 (AH-3) 19-20****H602308-14 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	64.0		16.0	mg/kg	4	6101308	AC	14-Oct-16	4500-Cl-B	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: SHOWSTOPPER 7 FED COM #1
Project Number: 2120-MD-00605.05
Project Manager: IKE TAVAREZ
Fax To: NONE

Reported:
14-Oct-16 16:15

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 6101308 - 1:4 DI Water									
Blank (6101308-BLK1)					Prepared & Analyzed: 13-Oct-16				
Chloride	ND	16.0	mg/kg						
LCS (6101308-BS1)					Prepared & Analyzed: 13-Oct-16				
Chloride	400	16.0	mg/kg	400		100	80-120		
LCS Dup (6101308-BSD1)					Prepared & Analyzed: 13-Oct-16				
Chloride	416	16.0	mg/kg	400		104	80-120	3.92	20
Duplicate (6101308-DUP1)					Prepared & Analyzed: 13-Oct-16				
Chloride	112	16.0	mg/kg		96.0			15.4	20
Matrix Spike (6101308-MS1)					Prepared & Analyzed: 13-Oct-16				
Chloride	480	16.0	mg/kg	400	96.0	96.0	80-120		

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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PAGE: 1 OF: 2



(432) 682-4559 • Fax (432) 682-3946

1

Ike Tavaraz

Showstopper 7 Fed Cann #1

Major Anions/Cations, pH, TDS

TIME:

Bill direct to COG

Page 19 of 20

