

From: [Price, Henryetta](#)
To: [Green, Nikki](#)
Cc: [Yu, Olivia, EMNRD](#); [Rebecca Haskell](#); stucker@blm.gov; [Billings, Bradford, EMNRD](#); [Dakota Neel](#); [Sheldon Hitchcock](#)
Subject: [External] Re: 1RP-4648 - Sneed 9 Federal Com #2 - Remediation Summary and Soil Closure Request
Date: Monday, December 18, 2017 4:15:39 PM
Attachments: [image003.jpg](#)
[image002.jpg](#)
[image001.jpg](#)

BLM approves the above closure request. Please inform BLM if request is not approved by NMOCD.

Thank you.

Henryetta Price

Environmental Protection Specialist
Bureau Of Land Management
Hprice@blm.gov
Phone 575-234-5951
Cell 575-706-2780
Fax 575-234-5927

On Mon, Dec 18, 2017 at 1:53 PM, Green, Nikki <NGreen@trcsolutions.com> wrote:

Good Afternoon All,

Please find attached the Remediation Summary and Soil Closure Request for the Sneed 9 Federal Com #2 Release Site. TRC, on behalf of COG Operating, LLC, requests the NMOCD grant Site Closure Status to the Sneed 9 Federal #002H Release Site (1RP-4648). Please note, the Final C-141 is included in the Remediation Summary and Soil Closure Request. Please feel free to contact me with any questions.

Thank you,

Nikki Green
Project Manager

trc-logo-blue



2057 Commerce Drive, Midland, TX 79703

T: 432.520.7720 | F: 432.520.7701 | C: 432.664.6699

[LinkedIn](#) | [Twitter](#) | [Blog](#) | www.trcsolutions.com

From: Price, Henryetta [mailto:hprice@blm.gov]
Sent: Tuesday, September 19, 2017 2:32 PM
To: Green, Nikki <NGreen@trcsolutions.com>
Cc: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Rebecca Haskell <RHaskell@concho.com>; Lowry, Joel <JLowry@trcsolutions.com>; stucker@blm.gov; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Subject: Re: 1RP-4648 - Sneed 9 Federal Com #2 - Soil Investigation and Remediation Workplan

Thank you!

Henryetta Price

Environmental Protection Specialist

Bureau Of Land Management

Hprice@blm.gov

Phone 575-234-5951

Cell 575-706-2780

Fax 575-234-5927

* Tis the season for African Rue. Please do a 360 scan around your well locations and lease roads.

On Tue, Sep 19, 2017 at 12:59 PM, Green, Nikki <NGreen@trcsolutions.com> wrote:

Please find attached the Amended Soil Investigation and Remediation Workplan for the Sneed 9 Federal Com #2 Release Site. Please feel free to contact me with any questions.

Thank you,

Nikki Green
Project Manager



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From: Price, Henryetta [mailto:hprice@blm.gov]

Sent: Tuesday, September 19, 2017 1:07 PM

To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>

Cc: Rebecca Haskell <RHaskell@concho.com>; Lowry, Joel <JLowry@trcsolutions.com>;
stucker@blm.gov; Green, Nikki <NGreen@trcsolutions.com>; Billings, Bradford, EMNRD
<Bradford.Billings@state.nm.us>

Subject: Re: 1RP-4648 - Sneed 9 Federal Com #2 - Soil Investigation and Remediation Workplan

Looking over this work plan again and realized there was a revised C141 that was submitted. Please correct the work plan with updated amount of fluids released and recovered. and attach the revised more accurate C141. Thanks.

Henryetta Price

Environmental Protection Specialist

Bureau Of Land Management

Hprice@blm.gov

Phone 575-234-5951

Cell 575-706-2780
Fax 575-234-5927

* Tis the season for African Rue. Please do a 360 scan around your well locations and lease roads.

On Tue, Sep 5, 2017 at 4:00 PM, Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us> wrote:

Ms. Haskell:

Acknowledged. Thank you. Please see the attachment for your records.

Olivia

From: Rebecca Haskell [mailto:RHaskell@concho.com]
Sent: Tuesday, September 5, 2017 3:26 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Lowry, Joel <JLowry@trcsolutions.com>; hprice@blm.gov; stucker@blm.gov
Cc: Green, Nikki <NGreen@trcsolutions.com>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>

Subject: RE: 1RP-4648 - Sneed 9 Federal Com #2 - Soil Investigation and Remediation Workplan

Ms. Yu,

We will either collect a soil sample per every 50 cu yds. or dispose of the excavated soil.

Thank You,

Becky Haskell

Senior HSE Coordinator

COG Operating LLC

600 W Illinois Avenue | Midland, TX 79701
Direct: 432-818-2372 | Main: 432.683.7443

Cell: 432-556-5130

rhaskell@concho.com



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From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]

Sent: Tuesday, September 05, 2017 4:17 PM

To: Rebecca Haskell; Lowry, Joel; hprice@blm.gov; stucker@blm.gov

Cc: Green, Nikki; Billings, Bradford, EMNRD

Subject: [External] RE: 1RP-4648 - Sneed 9 Federal Com #2 - Soil Investigation and Remediation Workplan

Dear Ms. Haskell:

Thank you for the confirmation regarding the remediation conditions for 1RP-4648.

RE: soil blending

NMOCD's concern is that the soil used for backfilling is within permissible levels, not necessarily that blending of hydrocarbon-impacted soil is prohibited. Therefore, the Responsible Operator is required to provide verification. Please submit laboratory analyses (BTEX and TPH extended) of 1 soil sample per 50 yd3 of blended soil to be used for backfilling.

Please confirm or inform of alternative remedial action.

Thanks,

Olivia

From: Rebecca Haskell [<mailto:RHaskell@concho.com>]
Sent: Tuesday, September 5, 2017 11:36 AM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Lowry, Joel <JLowry@tresolutions.com>; hprice@blm.gov; stucker@blm.gov
Cc: Green, Nikki <NGreen@tresolutions.com>
Subject: RE: 1RP-4648 - Sneed 9 Federal Com #2 - Soil Investigation and Remediation Workplan

Ms. Yu,

COG agrees to having bottom and sidewall confirmation samples in T2 excavation.

There is no overspray in the pasture, the release remained on location.

Please explain why we can't blend excavated soil. Confirmation samples would be collected to show the excavated soil is below NMOCD standards prior to utilizing it as backfill.

Thank You,

Becky Haskell

Senior HSE Coordinator

COG Operating LLC

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From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]

Sent: Thursday, August 31, 2017 10:56 AM

To: Lowry, Joel; hprice@blm.gov; stucker@blm.gov

Cc: Rebecca Haskell; Green, Nikki

Subject: [External] RE: 1RP-4648 - Sneed 9 Federal Com #2 - Soil Investigation and Remediation Workplan

**** External email. Use caution. ****

Good morning Mr. Lowry:

NMOCD approves of the delineation completed for 1RP-4648. The conditions of approval for remediation:

- 1) Laboratory analyses (BTEX and TPH) of bottom and sidewall confirmation samples for the proposed excavation in the area represented by T2.
- 2) Statement of liner integrity and photo documentation of the release in the secondary containment.
- 3) Minimum of 1 confirmatory surface soil sample (0-6") in pasture affected by overspray.

4) Blended excavated soil is not permitted.

Please confirm.

Thanks,

Olivia Yu

Environmental Specialist

NMOCD, District I

Olivia.yu@state.nm.us

575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Lowry, Joel [<mailto:JLowry@trcsolutions.com>]
Sent: Friday, August 18, 2017 1:54 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; hprice@blm.gov; stucker@blm.gov
Cc: rhaskell@concho.com; Green, Nikki <NGreen@trcsolutions.com>
Subject: 1RP-4648 - Sneed 9 Federal Com #2 - Soil Investigation and Remediation Workplan

Please find attached the *Soil Investigation Summary and Proposed Remediation Workplan* that has been prepared for COG Operating's Sneed 9 Federal Com #2 environmental remediation site. The release site is located in UL "D", Sec. 9, Township

17 South, Range 32 East in Lea County, NM. Upon your review and approval, COG is prepared to begin the activities outlined in the attached *Workplan*.

If you have any questions or need any additional information, please feel free to contact Becky Haskell at 432-818-2372 or Nikki Green at 432-664-6699. Thanks and have a great weekend.

Joel Lowry

Senior Project Manager



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REMEDIATION SUMMARY AND SOIL CLOSURE REQUEST

COG Operating, LLC
Sneed 9 Federal Com #002H
Lea, County, New Mexico
Unit Letter "D", Section 9, Township 17 South, Range 32 East, NMPM
Latitude 32.8536568° North, Longitude 103.7796249° West
NMOCD Reference No. 1RP-4648

Prepared For:

COG Operating, LLC
600 W Illinois Avenue
Midland, Texas 79701

Prepared By:

TRC Environmental Corporation
2057 Commerce
Midland, Texas 79703

December 2017


Nikki Green
Project Manager


Jeffrey Kindley, P.G.
Senior Project Manager

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Appendix A – Laboratory Analytical Reports

Appendix B – Photographs

Appendix C – Release Notification and Corrective Action (NMOCD Form C-141)

INTRODUCTION

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG), has prepared this *Remediation Summary and Soil Closure Request* for the Site known as Sneed 9 Federal Com #002H Release Site (Release Site). The legal description of the Release Site is Unit Letter “D”, Section 9, Township 17 South, Range 32 East, in Lea County, New Mexico. The subject property is administered by the United States Bureau of Land Management (BLM). The GPS coordinates for the site are N 32.8536568° W 103.7796249°. A “Site Location Map” and “Site Map” are provided as Figure 1 and Figure 2, respectively.

On March 19, 2017, COG discovered a crude oil and produced water release from the Free Water Knock Out (FWKO) located within the Sneed 9 Federal Com #002H lined secondary containment. The release was partially contained within the lined secondary containment and impacted the caliche pad north of the secondary containment. The release area outside of the lined secondary containment measured approximately 9,218 square feet. On March 20, 2017, a COG representative verbally notified the New Mexico Oil Conservation Division (NMOCD) and BLM and submitted a Release Notification and Corrective Action (Form C-141) to the NMOCD on March 22, 2017. During initial response activities, COG dispatched a vacuum truck to remove all freestanding fluids. On April 28, 2017, a revised Form C-141 was submitted to the NMOCD and COG reported approximately one hundred and five (105) barrels of fluid was released from the FWKO, with approximately one hundred and three (103) barrels recovered. A copy of the revised NMOCD Form C-141 is provided as Appendix C. General photographs of the site are provided as Appendix B.

NMOCD SITE CLASSIFICATION

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) did not identify any registered water wells in Section 9, Township 17 South, Range 32 East. A reference map utilized by the NMOCD Lea District Office indicates groundwater should be encountered at approximately one hundred and twenty-five (125) feet below ground surface (bgs). Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

No water wells were observed within one-thousand (1,000) feet of the Release Site. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

No surface water was observed within one-thousand (1,000) feet of the release. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

The NMOCD guidelines indicate the Sneed 9 Federal Com #002H Release Site has a ranking score of zero (0). Soil remediation levels for a site with a ranking score of zero (0) points are as follows:

- Benzene – 10 mg/kg (ppm)
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) – 50 mg/kg (ppm)
- Total Petroleum Hydrocarbons (TPH) – 5,000 mg/kg (ppm)

- Chloride – 600 mg/kg (ppm) mg/Kg

INITIAL INVESTIGATION AND PROPOSED REMEDIATION WORKPLAN

On April 27, 2017, a Concho Representative collected sixteen (16) delineation soil samples (T1-Surface, T1-1', T1-2', T1-3', T1-4', T1-6', T1-8', T1-10', T2-Surface, T2-1', T2-2', T2-3', T2-4', T2-6', T2-8', and T2-10') from the impacted area. The soil samples were submitted to Xenco Laboratories in Midland, Texas for determination of concentrations of BTEX using Method SW 846-8021B, TPH using Method SW846-8015M, and chloride using Method E 300.1. The analytical results indicated benzene concentrations were less than the applicable laboratory Method Detection Limit (MDL) and NMOCD regulatory guidelines for the submitted soil samples. The laboratory results indicated BTEX concentrations ranged from less than the applicable laboratory MDL for soil samples T1-3', T1-6', T1-8', T1-10', T2-3', T2-4', T2-6', T2-8', and T2-10' to 63.18 mg/Kg for soil sample T2-Surface. A review of laboratory analytical results indicated BTEX concentrations for the submitted soil samples were below NMOCD regulatory guidelines, with the exception of soil sample T2-Surface. The laboratory results indicated TPH concentrations ranged from less than the applicable laboratory MDL for soil samples T1-1', T1-3', T1-4', T1-6', T1-8', T1-10', T2-3', T2-4', T2-6', T2-8', and T2-10' to 7,845 mg/Kg for soil sample T2-Surface. A review of laboratory analytical results indicated TPH concentrations were below NMOCD regulatory guidelines for the submitted soil samples, with the exception of soil sample T2-Surface, which was above NMOCD regulatory guidelines. Chloride concentrations ranged from less than the laboratory applicable MDL for soil samples T2-1', T2-3', T2-4', T2-6', T2-8', and T2-10' to 179 mg/Kg for soil sample T1-10', which indicated chloride concentrations were below NMOCD regulatory guidelines for all collected soil samples. Concentrations of benzene, BTEX, TPH, and chloride are provided in Table 1 and the laboratory analytical results are provided as Appendix A.

On August 18, 2017, TRC submitted a *Soil Remediation Summary and Proposed Remediation Workplan (Workplan)* to the NMOCD and BLM, on behalf of COG, which was designed to advance the site toward an approved closure. The *Workplan* proposed excavation of the area represented by soil sample T2 to approximately six (6) inches bgs. The excavated soil was to be mixed and blended and, based on laboratory results, utilized to backfill the excavation. The *Workplan* was subsequently approved by the NMOCD and BLM.

SUMMARY OF SOIL REMEDIATION ACTIVITIES

On September 13, 2017, remediation activities commenced at the release site. As per the approved *Workplan*, the impacted area represented by test trench T2 was excavated to a depth of approximately six (6) inches bgs. The excavated area measured approximately 100 feet in length and thirty-five (35) feet in width and generated approximately 100 cubic yards of excavated soil.

In addition, a visual inspection was conducted within the plastic lined metal secondary containment of the tank battery. During the inspection, there appeared to be no visible evidence the linear integrity had been compromised and free liquids should be contained within the plastic lined metal secondary containment. Photographs of the plastic liner are provided in Appendix B.

Following excavation activities, the excavated soil was remediated by mixing and blending and temporarily stockpiled on a plastic liner.

On September 13, 2017, five (5) confirmation floor and sidewall soil samples (BH-1 @ 6", North-1 3", East-1 3", South-1 3", and West-1 3") were collected from the excavated area and two (2) five point composite soil samples (SP-1 and SP-2) were collected from the remediated stockpiles. The collected soil samples were submitted to Xenco Laboratories in Midland, Texas for determination of concentrations of BTEX using Method SW 846-8021B and TPH using Method SW 846-8015M. Laboratory analytical results indicated benzene and BTEX concentrations were less than the applicable laboratory MDL for all submitted soil samples, with the exception of soil samples SP-1 and SP-2, which exhibited BTEX concentrations of 0.05240 mg/Kg and 0.09334 mg/Kg, respectively. A review of laboratory analytical results indicated BTEX concentrations were below NMOCD regulatory guidelines for the submitted soil samples. Laboratory analytical results indicated TPH concentrations ranged from less than the applicable laboratory MDL for soil samples BH-1 @ 6", North-1 3", and South-1 3" to 1,155.6 mg/Kg for soil sample SP-2. A review of laboratory analytical results indicated TPH concentrations were below NMOCD regulatory guidelines for the submitted soil samples.

On October 4, 2017, the excavated area was backfilled with the remediated soil and contoured to fit the surrounding area.

SITE CLOSURE REQUEST

Remediation activities were conducted in accordance with the NMOCD and BLM approved *Workplan*. Based on laboratory analytical results from soil samples collected during the initial investigation, impacted soil which exhibited concentrations above NMOCD regulatory guidelines was excavated and remediated by mixing and blending activities. Based on laboratory analytical results from the confirmation soil samples collected following remediation activities, the excavated area was backfilled and contoured to fit the surrounding area. Based on laboratory analytical results and field activities conducted to date, COG requests the NMOCD grant Site Closure Status to the Sneed 9 Federal Com #002H Release Site.

LIMITATIONS

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

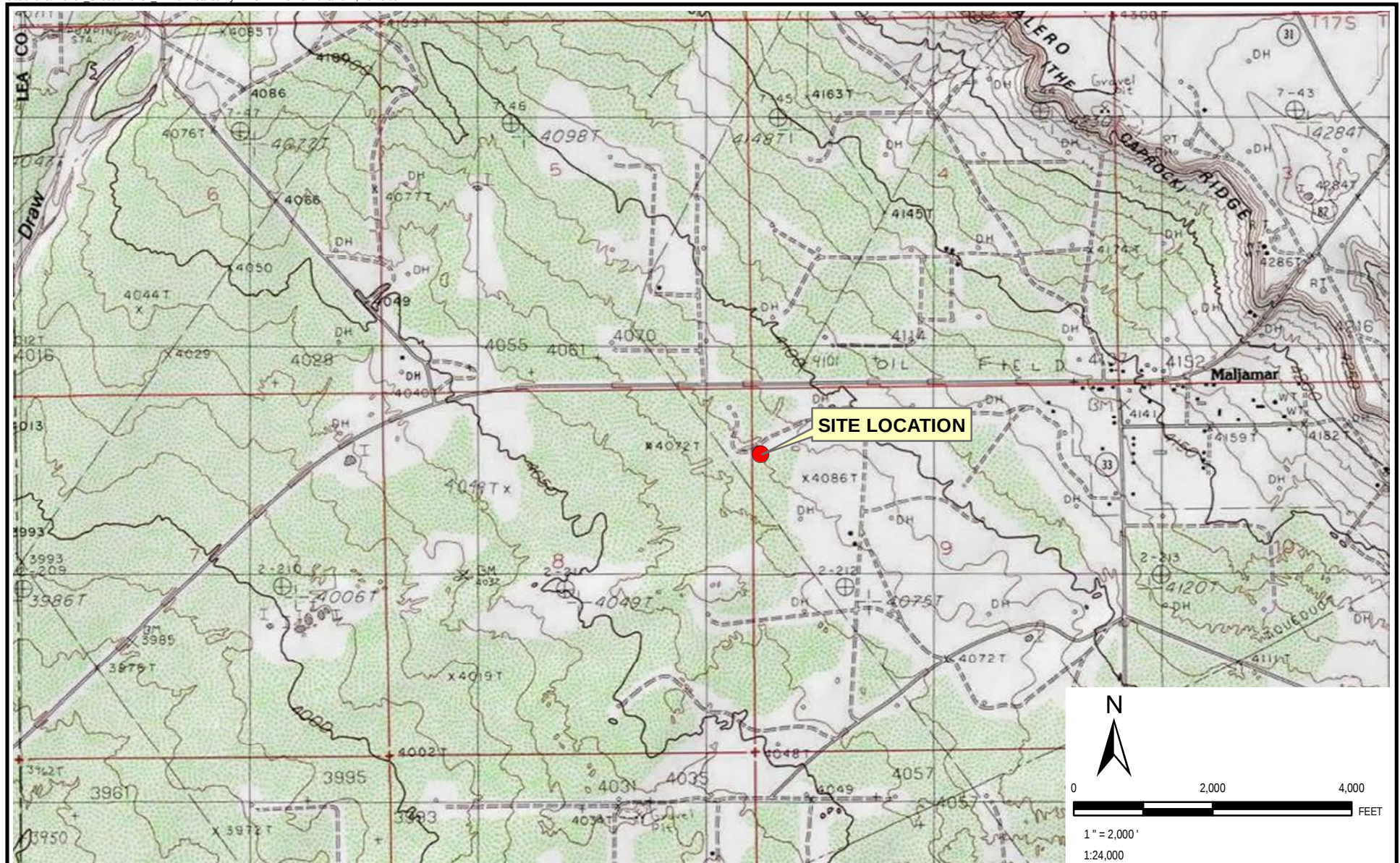
TRC has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. TRC has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and the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

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

DISTRIBUTION

- Copy 1: Olivia Yu
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 1
1625 French Drive
Hobbs, NM 88240
- Copy 2: Henryetta Price
Carlsbad Field Office
United States Department of the Interior
Bureau of Land Management
620 E. Greene Street
Carlsbad, New Mexico 88220
- Copy 3: Rebecca Haskell
COG Operating, LLC
600 W. Illinois Avenue
Midland, Texas 79701
- Copy 4: TRC Environmental Corporation
2057 Commerce Street
Midland, Texas 79703

J:\Concho\279784 Sneed\279784 1.mxd -- Saved By: MLOVELACE on 7/18/2017, 16:18:05 PM



2075 Commerce Drive
Midland, TX 79703
Phone: 432.520.770

TRC - GIS

TITLE:

FIGURE 1 SITE LOCATION MAP

PROJECT:

SNEED 9 FEDERAL COM #002H
LEA COUNTY, NEW MEXICO
COG OPERATING, LLC

DRAWN BY: MLOVELACE

CHECKED BY: NGREEN

APPROVED BY: NGREEN

DATE: JULY 2017

PROJ. NO.: 279784

GPS: LAT. N 32.8536568, LONG. W 103.779625

NW1/4 NW1/4 SEC 9 T17S R32E

J:\Concho\279784_Sneed\279784_2.mxd -- Saved By: MLOVELACE on 8/7/2017, 14:53:23 PM



2075 Commerce Drive
Midland, TX 79703
Phone: 432.520.770

TRC - GIS

TITLE:

FIGURE 2 SITE MAP

PROJECT:

**SNEED 9 FEDERAL COM #002H
LEA COUNTY, NEW MEXICO
COG OPERATING, LLC.**

DRAWN BY:

MLOVELACE

CHECKED BY:

NGREEN

APPROVED BY:

NGREEN

DATE:

AUGUST 2017

PROJ. NO.:

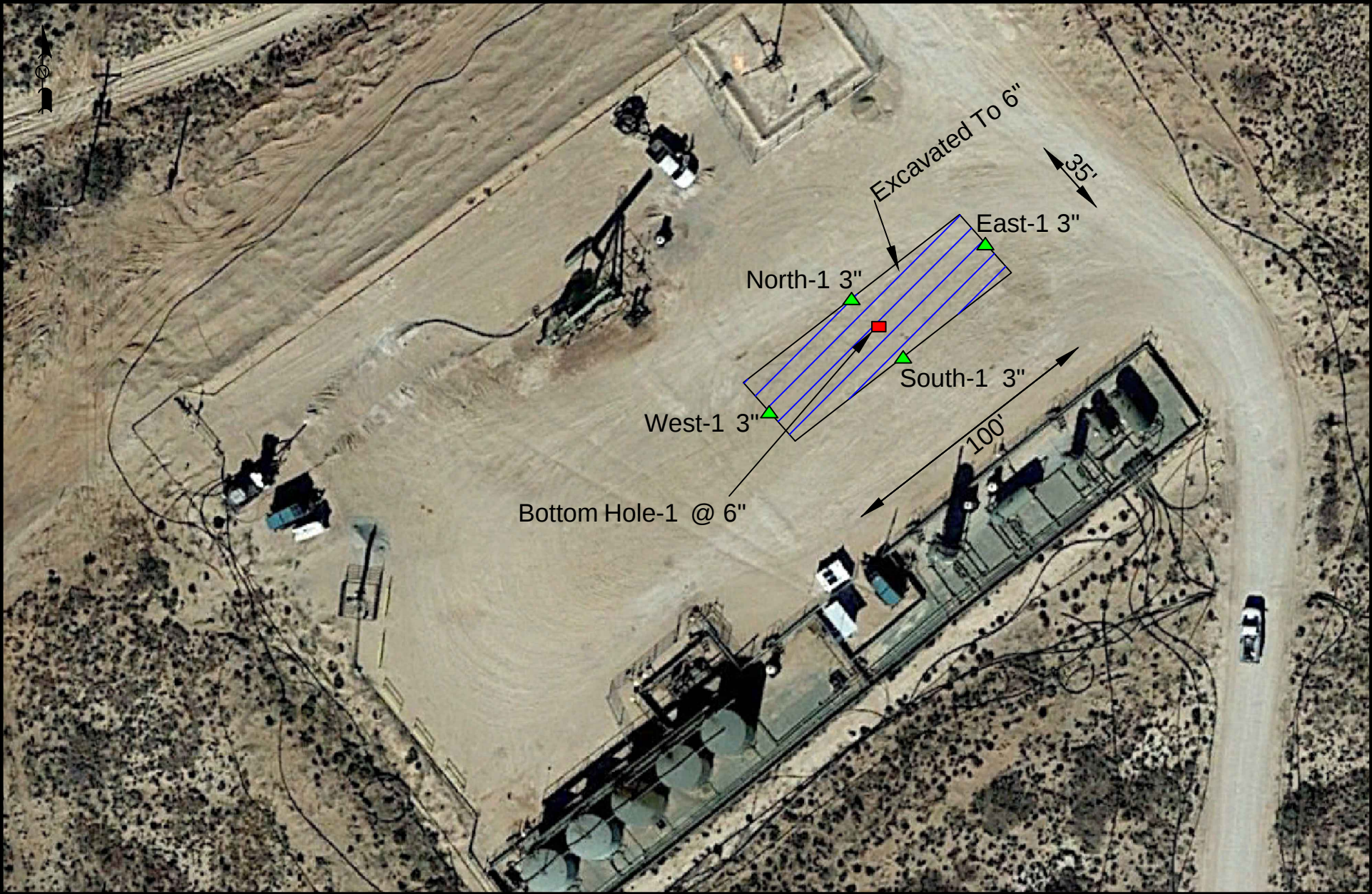
279784

GPS:

LAT. N 32.8536568, LONG. W 103.779625

NW1/4 NW1/4 SEC 9 T17S R32E

DRAWING NAME: Z:\Concho\ New Mexico\Sneed 9 Federal Com #2H 3-19-17\CAD\ Figure 3 Site Details & Confirmation soil sample Map 11-10-17.dwg --- PLOT DATE: November 10, 2017 - 3:35PM --- LAYOUT: Layout1



LEGEND:

- Excavated Area
- Side Wall Soil Sample Location
- Floor Soil Sample Location

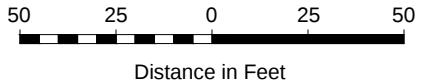


Figure 3
Site Details & Confirmation
Soil Sample Locations Map
COG Operating,LLC.
Sneed 9 Federal Com #002H
Lea County,NM

Scale: 1" = 50'	
CAD By: JH	Checked By: NG
Draft: November 10, 2017	
Lat. N 32.8536568° , Long. 103.779625°	
NW1/4 NW1/4 SEC 9 T17S R32E	
TRC Proj. No.: 279784	


2057 Commerce Drive
Midland, Texas 79703
432.520.7720

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

COG Operating LLC
Sneed 9 Federal Com #002H
LEA COUNTY, NEW MEXICO

All concentrations are reported in mg/Kg

SAMPLE LOCATION	SAMPLE DATE	SOIL STATUS	METHODS: SW 846-8021b						METHOD: SW 8015M				E 300.1
			BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE	TOTAL BTEX	TPH GRO C ₆ -C ₁₀	TPH DRO C ₁₀ -C ₂₈	TPH ORO C ₂₈ -C ₃₅	TOTAL TPH C ₆ -C ₃₅	CHLORIDE
NMOCD Site Classification Criteria			10					50				5,000	600
T1-Surface	4/27/2017	Trench	<0.00202	<0.00202	0.0676	0.131	0.0818	0.2804	426	975	113	1,514	66.4
T1-1'	4/27/2017	Trench	<0.00199	<0.00199	<0.00199	<0.00398	0.00254	0.00254	<15.0	<15.0	<15.0	<15.0	32.4
T1-2'	4/27/2017	Trench	<0.00199	<0.00199	<0.00199	0.00585	0.0156	0.02145	<15.0	41.0	<15.0	41.0	59.9
T1-3'	4/27/2017	Trench	<0.00202	<0.00202	<0.00202	<0.00404	<0.00202	<0.00404	<15.0	<15.0	<15.0	<15.0	46.2
T1-4'	4/27/2017	Trench	<0.00370	<0.00370	0.00970	<0.00741	<0.00370	0.00970	<15.0	<15.0	<15.0	<15.0	48.9
T1-6'	4/27/2017	Trench	<0.00199	<0.00199	<0.00199	<0.00398	<0.00199	<0.00398	<15.0	<15.0	<15.0	<15.0	9.44
T1-8'	4/27/2017	Trench	<0.00197	<0.00197	<0.00197	<0.00394	<0.00197	<0.00394	<15.0	<15.0	<15.0	<15.0	100
T1-10'	4/27/2017	Trench	<0.00200	<0.00200	<0.00200	<0.00401	<0.00200	<0.00401	<15.0	<15.0	<15.0	<15.0	179
T2-Surface	4/27/2017	Trench	<0.0998	2.98	19.9	27.1	13.2	63.18	2,640	4,570	635	7,845	14.5
T2-1'	4/27/2017	Trench	<0.00199	<0.00199	<0.00199	<0.00398	0.00818	0.00818	<14.9	20.5	<14.9	20.5	<4.93
T2-2'	4/27/2017	Trench	<0.00377	0.00692	0.0382	0.0789	0.0549	0.17892	55.0	137	<15.0	192	5.04
T2-3'	4/27/2017	Trench	<0.00344	<0.00344	<0.00344	<0.00687	<0.00344	<0.00687	<15.0	<15.0	<15.0	<15.0	<4.95
T2-4'	4/27/2017	Trench	<0.00369	<0.00369	<0.00369	<0.00738	<0.00369	<0.00738	<14.9	<14.9	<14.9	<14.9	<5.00
T2-6'	4/27/2017	Trench	<0.00200	<0.00200	<0.00200	<0.00399	<0.00200	<0.00399	<15.0	<15.0	<15.0	<15.0	<4.86
T2-8'	4/27/2017	Trench	<0.00380	<0.00380	<0.00380	<0.00760	<0.00380	<0.00760	<15.0	<15.0	<15.0	<15.0	<4.98
T2-10'	4/27/2017	Trench	<0.00202	<0.00202	<0.00202	<0.00403	<0.00202	<0.00403	<15.0	<15.0	<15.0	<15.0	<4.91
BH-1 @ 6"	9/13/2017	In-Situ	<0.00199	<0.00199	<0.00199	<0.00199		<0.00199	<15.0	<15.0	<15.0	<15.0	-
North-1 3"	9/13/2017	In-Situ	<0.00200	<0.00200	<0.00200	<0.00200		<0.00200	<14.9	<14.9	<14.9	<14.9	-
East-1 3"	9/13/2017	In-Situ	<0.00403	<0.00403	<0.00403	<0.00403		<0.00403	<15.0	611	104	715	-
South-1 3"	9/13/2017	In-Situ	<0.00399	<0.00399	<0.00399	<0.00399		<0.00399	<15.0	<15.0	<15.0	<15.0	-
West-1 3"	9/13/2017	In-Situ	<0.00341	<0.00341	<0.00341	<0.00341		<0.00341	<15.0	90.4	<15.0	90.4	-
SP-1	9/13/2017	Stockpile	<0.00202	0.00660	0.0129	0.0329		0.05240	18.1	922	158	1,098.1	-
SP-2	9/13/2017	Stockpile	<0.00199	0.00484	0.0196	0.0689		0.09334	39.6	980	136	1,155.6	-



Certificate of Analysis Summary 552076

COG Operating LLC, Artesia, NM

Project Name: Sneed Federal #002H



Project Id:

Contact: Aaron Lieb

Project Location: Sneed Federal #002H

Date Received in Lab: Fri Apr-28-17 11:00 am

Report Date: 05-MAY-17

Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	552076-001	552076-002	552076-003	552076-004	552076-005	552076-006
	<i>Field Id:</i>	T1- Surface	T1- 1'	T1- 2'	T1- 3'	T1- 4'	T1- 6'
	<i>Depth:</i>		1 ft	2 ft	3 ft	4 ft	6 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Apr-27-17 08:30	Apr-27-17 08:35	Apr-27-17 08:40	Apr-27-17 08:42	Apr-27-17 08:44	Apr-27-17 08:48
BTEX by EPA 8021B	<i>Extracted:</i>	May-02-17 14:00	May-02-17 14:00	May-03-17 16:00	May-03-17 16:00	May-04-17 11:55	May-03-17 16:00
	<i>Analyzed:</i>	May-02-17 21:32	May-02-17 21:16	May-04-17 11:59	May-04-17 12:15	May-04-17 21:58	May-04-17 12:48
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00370 0.00370	<0.00199 0.00199
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	<0.00370 0.00370	<0.00199 0.00199
Ethylbenzene		0.0676 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00202 0.00202	0.00970 0.00370	<0.00199 0.00199
m,p-Xylenes		0.131 0.00404	<0.00398 0.00398	0.00585 0.00398	<0.00404 0.00404	<0.00741 0.00741	<0.00398 0.00398
o-Xylene		0.0818 0.00202	0.00254 0.00199	0.0156 0.00199	<0.00202 0.00202	<0.00370 0.00370	<0.00199 0.00199
Total Xylenes		0.213 0.00202	0.00254 0.00199	0.0215 0.00199	<0.00202 0.00202	<0.00370 0.00370	<0.00199 0.00199
Total BTEX		0.280 0.00202	0.00254 0.00199	0.0215 0.00199	<0.00202 0.00202	0.00970 0.00370	<0.00199 0.00199
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	May-02-17 14:30	May-02-17 14:30	May-02-17 14:30	May-02-17 14:30	May-02-17 14:30	May-02-17 14:30
	<i>Analyzed:</i>	May-02-17 15:08	May-02-17 15:30	May-02-17 15:38	May-02-17 15:46	May-02-17 15:53	May-02-17 16:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		66.4 4.91	32.4 4.93	59.9 4.95	46.2 4.98	48.9 4.99	9.44 4.90
TPH By SW8015 Mod	<i>Extracted:</i>	May-02-17 11:00	May-02-17 11:00	May-02-17 11:00	May-02-17 11:00	May-02-17 11:00	May-02-17 11:00
	<i>Analyzed:</i>	May-02-17 22:36	May-02-17 22:56	May-02-17 23:17	May-02-17 23:38	May-02-17 23:59	May-03-17 00:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons		426 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		975 15.0	<15.0 15.0	41.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		113 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		1510 15.0	<15.0 15.0	41.0 15.0	<15.0 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



Certificate of Analysis Summary 552076

COG Operating LLC, Artesia, NM

Project Name: Sneed Federal #002H



Project Id:

Contact: Aaron Lieb

Project Location: Sneed Federal #002H

Date Received in Lab: Fri Apr-28-17 11:00 am

Report Date: 05-MAY-17

Project Manager: Liz Givens

<i>Analysis Requested</i>	<i>Lab Id:</i>	552076-007	552076-008	552076-009	552076-010	552076-011	552076-012
	<i>Field Id:</i>	T1- 8'	T1- 10'	T2-Surface	T2-1'	T2-2'	T2-3'
	<i>Depth:</i>	8 ft	10 ft		1 ft	2 ft	3 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Apr-27-17 08:50	Apr-27-17 08:55	Apr-27-17 09:00	Apr-27-17 09:02	Apr-27-17 09:05	Apr-27-17 09:10
BTEX by EPA 8021B	<i>Extracted:</i>	May-03-17 16:00	May-03-17 16:00	May-04-17 11:55	May-04-17 11:55	May-04-17 11:55	May-04-17 11:55
	<i>Analyzed:</i>	May-04-17 13:04	May-04-17 13:20	May-05-17 13:06	May-04-17 18:29	May-05-17 11:12	May-04-17 19:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00197 0.00197	<0.00200 0.00200	<0.0998 0.0998	<0.00199 0.00199	<0.00377 0.00377	<0.00344 0.00344
Toluene		<0.00197 0.00197	<0.00200 0.00200	2.98 0.0998	<0.00199 0.00199	0.00692 0.00377	<0.00344 0.00344
Ethylbenzene		<0.00197 0.00197	<0.00200 0.00200	19.9 0.0998	<0.00199 0.00199	0.0382 0.00377	<0.00344 0.00344
m,p-Xylenes		<0.00394 0.00394	<0.00401 0.00401	27.1 0.200	<0.00398 0.00398	0.0789 0.00755	<0.00687 0.00687
o-Xylene		<0.00197 0.00197	<0.00200 0.00200	13.2 0.0998	0.00818 0.00199	0.0549 0.00377	<0.00344 0.00344
Total Xylenes		<0.00197 0.00197	<0.00200 0.00200	40.3 0.0998	0.00818 0.00199	0.134 0.00377	<0.00344 0.00344
Total BTEX		<0.00197 0.00197	<0.00200 0.00200	63.2 0.0998	0.00818 0.00199	0.179 0.00377	<0.00344 0.00344
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	May-02-17 14:30	May-02-17 14:30	May-02-17 14:30	May-02-17 14:30	May-02-17 14:30	May-02-17 14:30
	<i>Analyzed:</i>	May-02-17 16:24	May-02-17 16:31	May-02-17 16:39	May-02-17 16:46	May-02-17 16:54	May-02-17 17:17
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		100 4.92	179 4.98	14.5 4.93	<4.93 4.93	5.04 4.94	<4.95 4.95
TPH By SW8015 Mod	<i>Extracted:</i>	May-02-17 11:00	May-02-17 11:00	May-02-17 11:00	May-02-17 11:00	May-02-17 11:00	May-02-17 11:00
	<i>Analyzed:</i>	May-03-17 00:40	May-03-17 01:00	May-03-17 01:21	May-03-17 01:41	May-03-17 02:42	May-03-17 03:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	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	2640 74.9	<14.9 14.9	55.0 15.0	<15.0 15.0
C10-C28 Diesel Range Hydrocarbons		<15.0 15.0	<15.0 15.0	4570 74.9	20.5 14.9	137 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	635 74.9	<14.9 14.9	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	7850 74.9	20.5 14.9	192 15.0	<15.0 15.0

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Brandi Ritcherson

Brandi Ritcherson
Project Manager



Certificate of Analysis Summary 552076

COG Operating LLC, Artesia, NM

Project Name: Sneed Federal #002H



Project Id:

Contact: Aaron Lieb

Project Location: Sneed Federal #002H

Date Received in Lab: Fri Apr-28-17 11:00 am

Report Date: 05-MAY-17

Project Manager: Liz Givens

Analysis Requested	Lab Id:	552076-013	552076-014	552076-015	552076-016		
	Field Id:	T2-4'	T2-6'	T2-8'	T2-10'		
	Depth:	4 ft	6 ft	8 ft	10 ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Apr-27-17 09:12	Apr-27-17 09:15	Apr-27-17 09:20	Apr-27-17 09:25		
BTEX by EPA 8021B	Extracted:	May-04-17 11:55	May-04-17 11:55	May-04-17 11:55	May-04-17 11:55		
	Analyzed:	May-05-17 11:27	May-04-17 18:13	May-05-17 11:43	May-04-17 19:49		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00369 0.00369	<0.00200 0.00200	<0.00380 0.00380	<0.00202 0.00202		
Toluene		<0.00369 0.00369	<0.00200 0.00200	<0.00380 0.00380	<0.00202 0.00202		
Ethylbenzene		<0.00369 0.00369	<0.00200 0.00200	<0.00380 0.00380	<0.00202 0.00202		
m,p-Xylenes		<0.00738 0.00738	<0.00399 0.00399	<0.00760 0.00760	<0.00403 0.00403		
o-Xylene		<0.00369 0.00369	<0.00200 0.00200	<0.00380 0.00380	<0.00202 0.00202		
Total Xylenes		<0.00369 0.00369	<0.00200 0.00200	<0.00380 0.00380	<0.00202 0.00202		
Total BTEX		<0.00369 0.00369	<0.00200 0.00200	<0.00380 0.00380	<0.00202 0.00202		
Inorganic Anions by EPA 300/300.1	Extracted:	May-02-17 14:30	May-02-17 14:30	May-02-17 14:30	May-02-17 14:30		
	Analyzed:	May-02-17 17:24	May-02-17 17:47	May-02-17 17:55	May-02-17 18:02		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		<5.00 5.00	<4.86 4.86	<4.98 4.98	<4.91 4.91		
TPH By SW8015 Mod	Extracted:	May-02-17 11:00	May-02-17 11:00	May-02-17 11:00	May-02-17 11:00		
	Analyzed:	May-03-17 03:23	May-03-17 03:43	May-03-17 04:03	May-03-17 04:23		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C10 Gasoline Range Hydrocarbons		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0		
C10-C28 Diesel Range Hydrocarbons		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0		
C28-C35 Oil Range Hydrocarbons		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0		
Total TPH		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0		

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Brandi Ritcherson

Brandi Ritcherson
Project Manager

Analytical Report 552076

for
COG Operating LLC

Project Manager: Aaron Lieb

Sneed Federal #002H

05-MAY-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)



05-MAY-17

Project Manager: **Aaron Lieb**

COG Operating LLC

2407 Pecos Avenue

Artesia, NM 88210

Reference: XENCO Report No(s): **552076**

Sneed Federal #002H

Project Address: Sneed Federal #002H

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) 552076. 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. 552076 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,

A handwritten signature in black ink that reads 'Brandi Ritcherson'.

Brandi Ritcherson

Project Manager

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Sample Cross Reference 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1- Surface	S	04-27-17 08:30		552076-001
T1- 1'	S	04-27-17 08:35	- 1 ft	552076-002
T1- 2'	S	04-27-17 08:40	- 2 ft	552076-003
T1- 3'	S	04-27-17 08:42	- 3 ft	552076-004
T1- 4'	S	04-27-17 08:44	- 4 ft	552076-005
T1- 6'	S	04-27-17 08:48	- 6 ft	552076-006
T1- 8'	S	04-27-17 08:50	- 8 ft	552076-007
T1- 10'	S	04-27-17 08:55	- 10 ft	552076-008
T2-Surface	S	04-27-17 09:00	N/A	552076-009
T2-1'	S	04-27-17 09:02	- 1 ft	552076-010
T2-2'	S	04-27-17 09:05	- 2 ft	552076-011
T2-3'	S	04-27-17 09:10	- 3 ft	552076-012
T2-4'	S	04-27-17 09:12	- 4 ft	552076-013
T2-6'	S	04-27-17 09:15	- 6 ft	552076-014
T2-8'	S	04-27-17 09:20	- 8 ft	552076-015
T2-10'	S	04-27-17 09:25	- 10 ft	552076-016



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Sneed Federal #002H

Project ID:
Work Order Number(s): 552076

Report Date: 05-MAY-17
Date Received: 04/28/2017

Sample receipt non conformance and comments:

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3016335 BTEX by EPA 8021B

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

Batch: LBA-3016591 BTEX by EPA 8021B

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

Batch: LBA-3016595 BTEX by EPA 8021B

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



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: **T1- Surface**

Matrix: Soil

Date Received: 04.28.17 11.00

Lab Sample Id: 552076-001

Date Collected: 04.27.17 08.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.02.17 14.30

Basis: Wet Weight

Seq Number: 3016347

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	66.4	4.91	mg/kg	05.02.17 15.08		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.02.17 11.00

Basis: Wet Weight

Seq Number: 3016317

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	426	15.0	mg/kg	05.02.17 22.36		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	975	15.0	mg/kg	05.02.17 22.36		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	113	15.0	mg/kg	05.02.17 22.36		1
Total TPH	PHC635	1510	15.0	mg/kg	05.02.17 22.36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	05.02.17 22.36	
o-Terphenyl	84-15-1	115	%	70-135	05.02.17 22.36	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: **T1- Surface**

Matrix: Soil

Date Received: 04.28.17 11.00

Lab Sample Id: 552076-001

Date Collected: 04.27.17 08.30

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.02.17 14.00

Basis: Wet Weight

Seq Number: 3016335

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.02.17 21.32	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.02.17 21.32	U	1
Ethylbenzene	100-41-4	0.0676	0.00202	mg/kg	05.02.17 21.32		1
m,p-Xylenes	179601-23-1	0.131	0.00404	mg/kg	05.02.17 21.32		1
o-Xylene	95-47-6	0.0818	0.00202	mg/kg	05.02.17 21.32		1
Total Xylenes	1330-20-7	0.213	0.00202	mg/kg	05.02.17 21.32		1
Total BTEX		0.280	0.00202	mg/kg	05.02.17 21.32		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111		%	80-120	05.02.17 21.32	
1,4-Difluorobenzene	540-36-3	101		%	80-120	05.02.17 21.32	



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 1' Matrix: Soil Date Received: 04.28.17 11.00
 Lab Sample Id: 552076-002 Date Collected: 04.27.17 08.35 Sample Depth: 1 ft
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
 Tech: MGO % Moisture:
 Analyst: MGO Date Prep: 05.02.17 14.30 Basis: Wet Weight
 Seq Number: 3016347

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.4	4.93	mg/kg	05.02.17 15.30		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 05.02.17 11.00 Basis: Wet Weight
 Seq Number: 3016317

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.02.17 22.56	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.02.17 22.56	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.02.17 22.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.02.17 22.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	05.02.17 22.56	
o-Terphenyl	84-15-1	100	%	70-135	05.02.17 22.56	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 1'
Lab Sample Id: 552076-002

Matrix: Soil
Date Collected: 04.27.17 08.35

Date Received: 04.28.17 11.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.02.17 14.00

Basis: Wet Weight

Seq Number: 3016335

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.02.17 21.16	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.02.17 21.16	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.02.17 21.16	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.02.17 21.16	U	1
o-Xylene	95-47-6	0.00254	0.00199	mg/kg	05.02.17 21.16		1
Total Xylenes	1330-20-7	0.00254	0.00199	mg/kg	05.02.17 21.16		1
Total BTEX		0.00254	0.00199	mg/kg	05.02.17 21.16		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	80-120	05.02.17 21.16		
1,4-Difluorobenzene	540-36-3	115	%	80-120	05.02.17 21.16		



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 2' Matrix: Soil Date Received: 04.28.17 11.00
 Lab Sample Id: 552076-003 Date Collected: 04.27.17 08.40 Sample Depth: 2 ft
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
 Tech: MGO % Moisture:
 Analyst: MGO Date Prep: 05.02.17 14.30 Basis: Wet Weight
 Seq Number: 3016347

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	59.9	4.95	mg/kg	05.02.17 15.38		1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ARM % Moisture:
 Analyst: ARM Date Prep: 05.02.17 11.00 Basis: Wet Weight
 Seq Number: 3016317

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.02.17 23.17	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	41.0	15.0	mg/kg	05.02.17 23.17		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.02.17 23.17	U	1
Total TPH	PHC635	41.0	15.0	mg/kg	05.02.17 23.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	05.02.17 23.17	
o-Terphenyl	84-15-1	105	%	70-135	05.02.17 23.17	



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 2'
Lab Sample Id: 552076-003

Matrix: Soil
Date Collected: 04.27.17 08.40

Date Received: 04.28.17 11.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.03.17 16.00

Basis: Wet Weight

Seq Number: 3016591

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.04.17 11.59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.04.17 11.59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.04.17 11.59	U	1
m,p-Xylenes	179601-23-1	0.00585	0.00398	mg/kg	05.04.17 11.59		1
o-Xylene	95-47-6	0.0156	0.00199	mg/kg	05.04.17 11.59		1
Total Xylenes	1330-20-7	0.0215	0.00199	mg/kg	05.04.17 11.59		1
Total BTEX		0.0215	0.00199	mg/kg	05.04.17 11.59		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	113		%	80-120	05.04.17 11.59	
4-Bromofluorobenzene	460-00-4	90		%	80-120	05.04.17 11.59	



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 3'
Lab Sample Id: 552076-004

Matrix: Soil
Date Collected: 04.27.17 08.42

Date Received: 04.28.17 11.00
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3016347

Date Prep: 05.02.17 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	46.2	4.98	mg/kg	05.02.17 15.46		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3016317

Date Prep: 05.02.17 11.00

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	05.02.17 23.38	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.02.17 23.38	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.02.17 23.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.02.17 23.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	05.02.17 23.38	
o-Terphenyl	84-15-1	109	%	70-135	05.02.17 23.38	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 3'
Lab Sample Id: 552076-004

Matrix: Soil
Date Collected: 04.27.17 08.42

Date Received: 04.28.17 11.00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.03.17 16.00

Basis: Wet Weight

Seq Number: 3016591

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.04.17 12.15	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.04.17 12.15	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.04.17 12.15	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	05.04.17 12.15	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.04.17 12.15	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.04.17 12.15	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.04.17 12.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	80-120	05.04.17 12.15		
1,4-Difluorobenzene	540-36-3	119	%	80-120	05.04.17 12.15		



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 4'
Lab Sample Id: 552076-005

Matrix: Soil
Date Collected: 04.27.17 08.44

Date Received: 04.28.17 11.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3016347

Date Prep: 05.02.17 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	48.9	4.99	mg/kg	05.02.17 15.53		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3016317

Date Prep: 05.02.17 11.00

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	05.02.17 23.59	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.02.17 23.59	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.02.17 23.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.02.17 23.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	05.02.17 23.59	
o-Terphenyl	84-15-1	106	%	70-135	05.02.17 23.59	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 4'
Lab Sample Id: 552076-005

Matrix: Soil
Date Collected: 04.27.17 08.44

Date Received: 04.28.17 11.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3016595

Prep Method: SW5030B

% Moisture:

Date Prep: 05.04.17 11.55

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00370	0.00370	mg/kg	05.04.17 21.58	U	1
Toluene	108-88-3	<0.00370	0.00370	mg/kg	05.04.17 21.58	U	1
Ethylbenzene	100-41-4	0.00970	0.00370	mg/kg	05.04.17 21.58		1
m,p-Xylenes	179601-23-1	<0.00741	0.00741	mg/kg	05.04.17 21.58	U	1
o-Xylene	95-47-6	<0.00370	0.00370	mg/kg	05.04.17 21.58	U	1
Total Xylenes	1330-20-7	<0.00370	0.00370	mg/kg	05.04.17 21.58	U	1
Total BTEX		0.00970	0.00370	mg/kg	05.04.17 21.58		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	117	%	80-120	05.04.17 21.58		
4-Bromofluorobenzene	460-00-4	81	%	80-120	05.04.17 21.58		



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 6'
Lab Sample Id: 552076-006

Matrix: Soil
Date Collected: 04.27.17 08.48

Date Received: 04.28.17 11.00
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3016347

Date Prep: 05.02.17 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.44	4.90	mg/kg	05.02.17 16.16		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3016317

Date Prep: 05.02.17 11.00

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	05.03.17 00.19	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.03.17 00.19	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.03.17 00.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.03.17 00.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	05.03.17 00.19	
o-Terphenyl	84-15-1	106	%	70-135	05.03.17 00.19	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 6'
Lab Sample Id: 552076-006

Matrix: Soil
Date Collected: 04.27.17 08.48

Date Received: 04.28.17 11.00
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.03.17 16.00

Basis: Wet Weight

Seq Number: 3016591

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.04.17 12.48	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.04.17 12.48	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.04.17 12.48	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.04.17 12.48	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.04.17 12.48	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.04.17 12.48	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.04.17 12.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	80-120	05.04.17 12.48		
4-Bromofluorobenzene	460-00-4	86	%	80-120	05.04.17 12.48		



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 8'
Lab Sample Id: 552076-007

Matrix: Soil
Date Collected: 04.27.17 08.50

Date Received: 04.28.17 11.00
Sample Depth: 8 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.02.17 14.30

Basis: Wet Weight

Seq Number: 3016347

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	100	4.92	mg/kg	05.02.17 16.24		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.02.17 11.00

Basis: Wet Weight

Seq Number: 3016317

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.03.17 00.40	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.03.17 00.40	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.03.17 00.40	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.03.17 00.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	05.03.17 00.40	
o-Terphenyl	84-15-1	109	%	70-135	05.03.17 00.40	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: **T1- 8'**
 Lab Sample Id: 552076-007

Matrix: Soil
 Date Collected: 04.27.17 08.50

Date Received: 04.28.17 11.00
 Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.03.17 16.00

Basis: Wet Weight

Seq Number: 3016591

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00197	0.00197	mg/kg	05.04.17 13.04	U	1
Toluene	108-88-3	<0.00197	0.00197	mg/kg	05.04.17 13.04	U	1
Ethylbenzene	100-41-4	<0.00197	0.00197	mg/kg	05.04.17 13.04	U	1
m,p-Xylenes	179601-23-1	<0.00394	0.00394	mg/kg	05.04.17 13.04	U	1
o-Xylene	95-47-6	<0.00197	0.00197	mg/kg	05.04.17 13.04	U	1
Total Xylenes	1330-20-7	<0.00197	0.00197	mg/kg	05.04.17 13.04	U	1
Total BTEX		<0.00197	0.00197	mg/kg	05.04.17 13.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	80-120	05.04.17 13.04		
4-Bromofluorobenzene	460-00-4	94	%	80-120	05.04.17 13.04		



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 10'
Lab Sample Id: 552076-008

Matrix: Soil
Date Collected: 04.27.17 08.55

Date Received: 04.28.17 11.00
Sample Depth: 10 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3016347

Date Prep: 05.02.17 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	179	4.98	mg/kg	05.02.17 16.31		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3016317

Date Prep: 05.02.17 11.00

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	05.03.17 01.00	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.03.17 01.00	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.03.17 01.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.03.17 01.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	05.03.17 01.00	
o-Terphenyl	84-15-1	107	%	70-135	05.03.17 01.00	



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T1- 10'
Lab Sample Id: 552076-008

Matrix: Soil
Date Collected: 04.27.17 08.55

Date Received: 04.28.17 11.00
Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.03.17 16.00

Basis: Wet Weight

Seq Number: 3016591

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.04.17 13.20	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.04.17 13.20	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.04.17 13.20	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.04.17 13.20	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.04.17 13.20	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.04.17 13.20	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.04.17 13.20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	80-120	05.04.17 13.20		
1,4-Difluorobenzene	540-36-3	100	%	80-120	05.04.17 13.20		



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: **T2-Surface**

Matrix: Soil

Date Received: 04.28.17 11.00

Lab Sample Id: 552076-009

Date Collected: 04.27.17 09.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.02.17 14.30

Basis: Wet Weight

Seq Number: 3016347

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.5	4.93	mg/kg	05.02.17 16.39		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.02.17 11.00

Basis: Wet Weight

Seq Number: 3016317

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	2640	74.9	mg/kg	05.03.17 01.21		5
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	4570	74.9	mg/kg	05.03.17 01.21		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	635	74.9	mg/kg	05.03.17 01.21		5
Total TPH	PHC635	7850	74.9	mg/kg	05.03.17 01.21		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	05.03.17 01.21	
o-Terphenyl	84-15-1	100	%	70-135	05.03.17 01.21	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: **T2-Surface**

Matrix: Soil

Date Received: 04.28.17 11.00

Lab Sample Id: 552076-009

Date Collected: 04.27.17 09.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.04.17 11.55

Basis: Wet Weight

Seq Number: 3016595

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0998	0.0998	mg/kg	05.05.17 13.06	U	50
Toluene	108-88-3	2.98	0.0998	mg/kg	05.05.17 13.06		50
Ethylbenzene	100-41-4	19.9	0.0998	mg/kg	05.05.17 13.06		50
m,p-Xylenes	179601-23-1	27.1	0.200	mg/kg	05.05.17 13.06		50
o-Xylene	95-47-6	13.2	0.0998	mg/kg	05.05.17 13.06		50
Total Xylenes	1330-20-7	40.3	0.0998	mg/kg	05.05.17 13.06		50
Total BTEX		63.2	0.0998	mg/kg	05.05.17 13.06		50
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	81	%	80-120	05.05.17 13.06		
1,4-Difluorobenzene	540-36-3	85	%	80-120	05.05.17 13.06		



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-1'
Lab Sample Id: 552076-010

Matrix: Soil
Date Collected: 04.27.17 09.02

Date Received: 04.28.17 11.00
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.02.17 14.30

Basis: Wet Weight

Seq Number: 3016347

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.93	4.93	mg/kg	05.02.17 16.46	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.02.17 11.00

Basis: Wet Weight

Seq Number: 3016317

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	05.03.17 01.41	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	20.5	14.9	mg/kg	05.03.17 01.41		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<14.9	14.9	mg/kg	05.03.17 01.41	U	1
Total TPH	PHC635	20.5	14.9	mg/kg	05.03.17 01.41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	05.03.17 01.41	
o-Terphenyl	84-15-1	108	%	70-135	05.03.17 01.41	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-1'
Lab Sample Id: 552076-010

Matrix: Soil
Date Collected: 04.27.17 09.02

Date Received: 04.28.17 11.00
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3016595

Date Prep: 05.04.17 11.55

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.04.17 18.29	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.04.17 18.29	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.04.17 18.29	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.04.17 18.29	U	1
o-Xylene	95-47-6	0.00818	0.00199	mg/kg	05.04.17 18.29		1
Total Xylenes	1330-20-7	0.00818	0.00199	mg/kg	05.04.17 18.29		1
Total BTEX		0.00818	0.00199	mg/kg	05.04.17 18.29		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	112	%	80-120	05.04.17 18.29		
1,4-Difluorobenzene	540-36-3	112	%	80-120	05.04.17 18.29		



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-2'
Lab Sample Id: 552076-011

Matrix: Soil
Date Collected: 04.27.17 09.05

Date Received: 04.28.17 11.00
Sample Depth: 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3016347

Date Prep: 05.02.17 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.04	4.94	mg/kg	05.02.17 16.54		1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3016317

Date Prep: 05.02.17 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	55.0	15.0	mg/kg	05.03.17 02.42		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	137	15.0	mg/kg	05.03.17 02.42		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.03.17 02.42	U	1
Total TPH	PHC635	192	15.0	mg/kg	05.03.17 02.42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	05.03.17 02.42	
o-Terphenyl	84-15-1	106	%	70-135	05.03.17 02.42	



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-2'
Lab Sample Id: 552076-011

Matrix: Soil
Date Collected: 04.27.17 09.05

Date Received: 04.28.17 11.00
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.04.17 11.55

Basis: Wet Weight

Seq Number: 3016595

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00377	0.00377	mg/kg	05.05.17 11.12	U	1
Toluene	108-88-3	0.00692	0.00377	mg/kg	05.05.17 11.12		1
Ethylbenzene	100-41-4	0.0382	0.00377	mg/kg	05.05.17 11.12		1
m,p-Xylenes	179601-23-1	0.0789	0.00755	mg/kg	05.05.17 11.12		1
o-Xylene	95-47-6	0.0549	0.00377	mg/kg	05.05.17 11.12		1
Total Xylenes	1330-20-7	0.134	0.00377	mg/kg	05.05.17 11.12		1
Total BTEX		0.179	0.00377	mg/kg	05.05.17 11.12		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	82		%	80-120	05.05.17 11.12	
1,4-Difluorobenzene	540-36-3	103		%	80-120	05.05.17 11.12	



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-3'
Lab Sample Id: 552076-012

Matrix: Soil
Date Collected: 04.27.17 09.10

Date Received: 04.28.17 11.00
Sample Depth: 3 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.02.17 14.30

Basis: Wet Weight

Seq Number: 3016347

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	05.02.17 17.17	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.02.17 11.00

Basis: Wet Weight

Seq Number: 3016317

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.03.17 03.03	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.03.17 03.03	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.03.17 03.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.03.17 03.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	05.03.17 03.03	
o-Terphenyl	84-15-1	108	%	70-135	05.03.17 03.03	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-3'
Lab Sample Id: 552076-012

Matrix: Soil
Date Collected: 04.27.17 09.10

Date Received: 04.28.17 11.00
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3016595

Prep Method: SW5030B

% Moisture:

Date Prep: 05.04.17 11.55

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00344	0.00344	mg/kg	05.04.17 19.01	U	1
Toluene	108-88-3	<0.00344	0.00344	mg/kg	05.04.17 19.01	U	1
Ethylbenzene	100-41-4	<0.00344	0.00344	mg/kg	05.04.17 19.01	U	1
m,p-Xylenes	179601-23-1	<0.00687	0.00687	mg/kg	05.04.17 19.01	U	1
o-Xylene	95-47-6	<0.00344	0.00344	mg/kg	05.04.17 19.01	U	1
Total Xylenes	1330-20-7	<0.00344	0.00344	mg/kg	05.04.17 19.01	U	1
Total BTEX		<0.00344	0.00344	mg/kg	05.04.17 19.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	80-120	05.04.17 19.01		
1,4-Difluorobenzene	540-36-3	111	%	80-120	05.04.17 19.01		



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-4'
Lab Sample Id: 552076-013

Matrix: Soil
Date Collected: 04.27.17 09.12

Date Received: 04.28.17 11.00
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.02.17 14.30

Basis: Wet Weight

Seq Number: 3016347

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	05.02.17 17.24	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.02.17 11.00

Basis: Wet Weight

Seq Number: 3016317

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<14.9	14.9	mg/kg	05.03.17 03.23	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<14.9	14.9	mg/kg	05.03.17 03.23	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<14.9	14.9	mg/kg	05.03.17 03.23	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	05.03.17 03.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	05.03.17 03.23	
o-Terphenyl	84-15-1	108	%	70-135	05.03.17 03.23	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-4'
Lab Sample Id: 552076-013

Matrix: Soil
Date Collected: 04.27.17 09.12

Date Received: 04.28.17 11.00
Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.04.17 11.55

Basis: Wet Weight

Seq Number: 3016595

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00369	0.00369	mg/kg	05.05.17 11.27	U	1
Toluene	108-88-3	<0.00369	0.00369	mg/kg	05.05.17 11.27	U	1
Ethylbenzene	100-41-4	<0.00369	0.00369	mg/kg	05.05.17 11.27	U	1
m,p-Xylenes	179601-23-1	<0.00738	0.00738	mg/kg	05.05.17 11.27	U	1
o-Xylene	95-47-6	<0.00369	0.00369	mg/kg	05.05.17 11.27	U	1
Total Xylenes	1330-20-7	<0.00369	0.00369	mg/kg	05.05.17 11.27	U	1
Total BTEX		<0.00369	0.00369	mg/kg	05.05.17 11.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	80-120	05.05.17 11.27		
4-Bromofluorobenzene	460-00-4	84	%	80-120	05.05.17 11.27		



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-6'
Lab Sample Id: 552076-014

Matrix: Soil
Date Collected: 04.27.17 09.15

Date Received: 04.28.17 11.00
Sample Depth: 6 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.02.17 14.30

Basis: Wet Weight

Seq Number: 3016347

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.86	4.86	mg/kg	05.02.17 17.47	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.02.17 11.00

Basis: Wet Weight

Seq Number: 3016317

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.03.17 03.43	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.03.17 03.43	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.03.17 03.43	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.03.17 03.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	05.03.17 03.43	
o-Terphenyl	84-15-1	109	%	70-135	05.03.17 03.43	



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-6'
Lab Sample Id: 552076-014

Matrix: Soil
Date Collected: 04.27.17 09.15

Date Received: 04.28.17 11.00
Sample Depth: 6 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3016595

Date Prep: 05.04.17 11.55

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.04.17 18.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.04.17 18.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.04.17 18.13	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.04.17 18.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.04.17 18.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.04.17 18.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.04.17 18.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	117	%	80-120	05.04.17 18.13		
4-Bromofluorobenzene	460-00-4	102	%	80-120	05.04.17 18.13		



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-8'
Lab Sample Id: 552076-015

Matrix: Soil
Date Collected: 04.27.17 09.20

Date Received: 04.28.17 11.00
Sample Depth: 8 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Tech: MGO

Analyst: MGO

Seq Number: 3016347

Date Prep: 05.02.17 14.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.98	4.98	mg/kg	05.02.17 17.55	U	1

Analytical Method: TPH By SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3016317

Date Prep: 05.02.17 11.00

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	05.03.17 04.03	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.03.17 04.03	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.03.17 04.03	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.03.17 04.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	05.03.17 04.03	
o-Terphenyl	84-15-1	110	%	70-135	05.03.17 04.03	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-8'
Lab Sample Id: 552076-015

Matrix: Soil
Date Collected: 04.27.17 09.20

Date Received: 04.28.17 11.00
Sample Depth: 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.04.17 11.55

Basis: Wet Weight

Seq Number: 3016595

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00380	0.00380	mg/kg	05.05.17 11.43	U	1
Toluene	108-88-3	<0.00380	0.00380	mg/kg	05.05.17 11.43	U	1
Ethylbenzene	100-41-4	<0.00380	0.00380	mg/kg	05.05.17 11.43	U	1
m,p-Xylenes	179601-23-1	<0.00760	0.00760	mg/kg	05.05.17 11.43	U	1
o-Xylene	95-47-6	<0.00380	0.00380	mg/kg	05.05.17 11.43	U	1
Total Xylenes	1330-20-7	<0.00380	0.00380	mg/kg	05.05.17 11.43	U	1
Total BTEX		<0.00380	0.00380	mg/kg	05.05.17 11.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	80-120	05.05.17 11.43		
4-Bromofluorobenzene	460-00-4	84	%	80-120	05.05.17 11.43		



Certificate of Analytical Results 552076



COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-10'
Lab Sample Id: 552076-016

Matrix: Soil
Date Collected: 04.27.17 09.25

Date Received: 04.28.17 11.00
Sample Depth: 10 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.02.17 14.30

Basis: Wet Weight

Seq Number: 3016347

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.91	4.91	mg/kg	05.02.17 18.02	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.02.17 11.00

Basis: Wet Weight

Seq Number: 3016317

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.03.17 04.23	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.03.17 04.23	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.03.17 04.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.03.17 04.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	05.03.17 04.23	
o-Terphenyl	84-15-1	106	%	70-135	05.03.17 04.23	



Certificate of Analytical Results 552076

COG Operating LLC, Artesia, NM

Sneed Federal #002H

Sample Id: T2-10'
Lab Sample Id: 552076-016

Matrix: Soil
Date Collected: 04.27.17 09.25

Date Received: 04.28.17 11.00
Sample Depth: 10 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 05.04.17 11.55

Basis: Wet Weight

Seq Number: 3016595

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.04.17 19.49	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.04.17 19.49	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.04.17 19.49	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.04.17 19.49	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.04.17 19.49	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.04.17 19.49	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.04.17 19.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	80-120	05.04.17 19.49		
4-Bromofluorobenzene	460-00-4	84	%	80-120	05.04.17 19.49		



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



COG Operating LLC

Sneed Federal #002H

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016347

Matrix: Solid

Prep Method: E300P

MB Sample Id: 723947-1-BLK

LCS Sample Id: 723947-1-BKS

Date Prep: 05.02.17

LCSD Sample Id: 723947-1-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	242	97	251	100	90-110	4	20	mg/kg	05.02.17 14:45	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016347

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552076-001

MS Sample Id: 552076-001 S

Date Prep: 05.02.17

MSD Sample Id: 552076-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	66.4	246	329	107	330	107	90-110	0	20	mg/kg	05.02.17 15:15	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016347

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 552076-011

MS Sample Id: 552076-011 S

Date Prep: 05.02.17

MSD Sample Id: 552076-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.04	247	253	100	256	102	90-110	1	20	mg/kg	05.02.17 17:02	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3016317

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 723953-1-BLK

LCS Sample Id: 723953-1-BKS

Date Prep: 05.02.17

LCSD Sample Id: 723953-1-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	915	92	1080	108	70-135	17	35	mg/kg	05.02.17 21:54	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	955	96	1060	106	70-135	10	35	mg/kg	05.02.17 21:54	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		106		124		70-135	%	05.02.17 21:54
o-Terphenyl	114		109		126		70-135	%	05.02.17 21:54



COG Operating LLC

Sneed Federal #002H

Analytical Method: TPH By SW8015 Mod

Seq Number: 3016317

Parent Sample Id: 552076-016

Matrix: Soil

MS Sample Id: 552076-016 S

Prep Method: TX1005P

Date Prep: 05.02.17

MSD Sample Id: 552076-016 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	896	90	860	86	70-135	4	35	mg/kg	05.03.17 04:43	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	852	85	878	88	70-135	3	35	mg/kg	05.03.17 04:43	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		96		70-135	%	05.03.17 04:43
o-Terphenyl	102		101		70-135	%	05.03.17 04:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3016335

MB Sample Id: 723960-1-BLK

Matrix: Solid

LCS Sample Id: 723960-1-BKS

Prep Method: SW5030B

Date Prep: 05.02.17

LCSD Sample Id: 723960-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0963	96	0.110	109	70-130	13	35	mg/kg	05.02.17 13:22	
Toluene	<0.00200	0.100	0.0909	91	0.104	103	70-130	13	35	mg/kg	05.02.17 13:22	
Ethylbenzene	<0.00200	0.100	0.104	104	0.122	121	71-129	16	35	mg/kg	05.02.17 13:22	
m,p-Xylenes	<0.00401	0.200	0.203	102	0.234	116	70-135	14	35	mg/kg	05.02.17 13:22	
o-Xylene	<0.00200	0.100	0.0988	99	0.117	116	71-133	17	35	mg/kg	05.02.17 13:22	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		92		114		80-120	%	05.02.17 13:22
4-Bromofluorobenzene	80		93		93		80-120	%	05.02.17 13:22

Analytical Method: BTEX by EPA 8021B

Seq Number: 3016591

MB Sample Id: 724088-1-BLK

Matrix: Solid

LCS Sample Id: 724088-1-BKS

Prep Method: SW5030B

Date Prep: 05.03.17

LCSD Sample Id: 724088-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0990	99	0.0954	96	70-130	4	35	mg/kg	05.04.17 06:45	
Toluene	<0.00199	0.0996	0.101	101	0.0945	95	70-130	7	35	mg/kg	05.04.17 06:45	
Ethylbenzene	<0.00199	0.0996	0.114	114	0.106	106	71-129	7	35	mg/kg	05.04.17 06:45	
m,p-Xylenes	<0.00398	0.199	0.220	111	0.205	103	70-135	7	35	mg/kg	05.04.17 06:45	
o-Xylene	<0.00199	0.0996	0.104	104	0.109	109	71-133	5	35	mg/kg	05.04.17 06:45	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		93		100		80-120	%	05.04.17 06:45
4-Bromofluorobenzene	94		98		112		80-120	%	05.04.17 06:45



COG Operating LLC

Sneed Federal #002H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3016595

MB Sample Id: 724125-1-BLK

Matrix: Solid

LCS Sample Id: 724125-1-BKS

Prep Method: SW5030B

Date Prep: 05.04.17

LCSD Sample Id: 724125-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.101	101	0.0978	97	70-130	3	35	mg/kg	05.04.17 15:47	
Toluene	<0.00201	0.100	0.0980	98	0.103	102	70-130	5	35	mg/kg	05.04.17 15:47	
Ethylbenzene	<0.00201	0.100	0.111	111	0.120	119	71-129	8	35	mg/kg	05.04.17 15:47	
m,p-Xylenes	<0.00402	0.201	0.217	108	0.235	116	70-135	8	35	mg/kg	05.04.17 15:47	
o-Xylene	<0.00201	0.100	0.102	102	0.102	101	71-133	0	35	mg/kg	05.04.17 15:47	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		105		105		80-120	%	05.04.17 15:47
4-Bromofluorobenzene	96		102		96		80-120	%	05.04.17 15:47

Analytical Method: BTEX by EPA 8021B

Seq Number: 3016335

Parent Sample Id: 552079-004

Matrix: Soil

MS Sample Id: 552079-004 S

Prep Method: SW5030B

Date Prep: 05.02.17

MSD Sample Id: 552079-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00452	0.226	0.212	94	0.219	101	70-130	3	35	mg/kg	05.02.17 22:05	
Toluene	<0.00452	0.226	0.207	92	0.204	94	70-130	1	35	mg/kg	05.02.17 22:05	
Ethylbenzene	<0.00452	0.226	0.217	96	0.226	104	71-129	4	35	mg/kg	05.02.17 22:05	
m,p-Xylenes	<0.00905	0.452	0.414	92	0.437	100	70-135	5	35	mg/kg	05.02.17 22:05	
o-Xylene	0.00912	0.226	0.208	88	0.209	92	71-133	0	35	mg/kg	05.02.17 22:05	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		108		80-120	%	05.02.17 22:05
4-Bromofluorobenzene	102		97		80-120	%	05.02.17 22:05

Analytical Method: BTEX by EPA 8021B

Seq Number: 3016591

Parent Sample Id: 552196-001

Matrix: Soil

MS Sample Id: 552196-001 S

Prep Method: SW5030B

Date Prep: 05.03.17

MSD Sample Id: 552196-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00375	0.187	0.160	86	0.151	82	70-130	6	35	mg/kg	05.04.17 07:18	
Toluene	<0.00375	0.187	0.149	80	0.136	74	70-130	9	35	mg/kg	05.04.17 07:18	
Ethylbenzene	<0.00375	0.187	0.144	77	0.136	74	71-129	6	35	mg/kg	05.04.17 07:18	
m,p-Xylenes	<0.00749	0.375	0.280	75	0.252	68	70-135	11	35	mg/kg	05.04.17 07:18	X
o-Xylene	<0.00375	0.187	0.139	74	0.131	71	71-133	6	35	mg/kg	05.04.17 07:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	115		109		80-120	%	05.04.17 07:18
4-Bromofluorobenzene	113		112		80-120	%	05.04.17 07:18



COG Operating LLC

Sneed Federal #002H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3016595

Parent Sample Id: 552076-014

Matrix: Soil

MS Sample Id: 552076-014 S

Prep Method: SW5030B

Date Prep: 05.04.17

MSD Sample Id: 552076-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0819	81	0.0764	77	70-130	7	35	mg/kg	05.04.17 16:52	
Toluene	<0.00202	0.101	0.0843	83	0.0775	78	70-130	8	35	mg/kg	05.04.17 16:52	
Ethylbenzene	<0.00202	0.101	0.0923	91	0.0902	91	71-129	2	35	mg/kg	05.04.17 16:52	
m,p-Xylenes	<0.00403	0.202	0.178	88	0.172	86	70-135	3	35	mg/kg	05.04.17 16:52	
o-Xylene	<0.00202	0.101	0.0948	94	0.0887	89	71-133	7	35	mg/kg	05.04.17 16:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		104		80-120	%	05.04.17 16:52
4-Bromofluorobenzene	98		117		80-120	%	05.04.17 16:52

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

Phoenix, Arizona (480-355-0900)

CHAIN OF CUSTODY

Page 1 Of 2Final 1.000

Page 2 Of 2

Phoenix, Arizona (480-355-0900)

Final 1,000



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 04/28/2017 11:00:00 AM

Work Order #: 552076

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R9

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	5
#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?	N/A
#7 *Custody Seals Signed and dated?	N/A
#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)?	No
#21 VOC samples have zero headspace?	N/A
#22 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ? 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 NaAsO ₂ +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

Date: 05/01/2017

Checklist reviewed by:

Brandi Ritcherson

Date: 05/01/2017



Certificate of Analysis Summary 562895

TRC Solutions, Inc, Midland, TX

Project Name: Sneed 9 Federal Com #2H (3-19-17)



Project Id:

Contact: Nikki Green

Project Location: Lea County NM

Date Received in Lab: Thu Sep-14-17 02:45 pm

Report Date: 20-SEP-17

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	562895-001	562895-002	562895-003	562895-004	562895-005	562895-006
	<i>Field Id:</i>	BH-1 @ 6"	North-1 3"	East-1 3"	South-1 3"	West-1 3"	SP-1
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-13-17 14:00	Sep-13-17 14:05	Sep-13-17 14:10	Sep-13-17 14:15	Sep-13-17 14:20	Sep-13-17 14:25
BTEX by EPA 8021B	<i>Extracted:</i>	Sep-18-17 14:16	Sep-15-17 09:00	Sep-18-17 14:16	Sep-18-17 14:16	Sep-18-17 14:16	Sep-15-17 09:00
	<i>Analyzed:</i>	Sep-19-17 10:21	Sep-15-17 16:12	Sep-19-17 10:43	Sep-19-17 11:03	Sep-19-17 10:00	Sep-15-17 17:47
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00403 0.00403	<0.00399 0.00399	<0.00341 0.00341	<0.00202 0.00202
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00403 0.00403	<0.00399 0.00399	<0.00341 0.00341	0.00660 0.00202
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00403 0.00403	<0.00399 0.00399	<0.00341 0.00341	0.0129 0.00202
Xylenes, Total		<0.00199 0.00199	<0.002 0.002	<0.00403 0.00403	<0.00399 0.00399	<0.00341 0.00341	0.0329 0.00202
Total BTEX		<0.00199 0.00199	<0.002 0.002	<0.00403 0.00403	<0.00399 0.00399	<0.00341 0.00341	0.0524 0.00202
TPH by SW8015 Mod	<i>Extracted:</i>	Sep-15-17 18:00	Sep-15-17 18:00	Sep-15-17 18:00	Sep-15-17 18:00	Sep-15-17 18:00	Sep-15-17 18:00
	<i>Analyzed:</i>	Sep-16-17 08:42	Sep-16-17 09:04	Sep-16-17 09:24	Sep-16-17 09:45	Sep-16-17 10:07	Sep-16-17 10:28
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	18.1 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<14.9 14.9	611 15.0	<15.0 15.0	90.4 15.0	922 15.0
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<14.9 14.9	104 15.0	<15.0 15.0	<15.0 15.0	158 15.0
Total TPH		<15 15	<14.9 14.9	715 15	<15 15	90.4 15	1098.1 15

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

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 562895

TRC Solutions, Inc, Midland, TX

Project Name: Sneed 9 Federal Com #2H (3-19-17)



Project Id:

Contact: Nikki Green

Project Location: Lea County NM

Date Received in Lab: Thu Sep-14-17 02:45 pm

Report Date: 20-SEP-17

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	562895-007					
	Field Id:	SP-2					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Sep-13-17 14:30					
BTEX by EPA 8021B	Extracted:	Sep-15-17 09:00					
	Analyzed:	Sep-15-17 18:06					
	Units/RL:	mg/kg RL					
Benzene		<0.00199 0.00199					
Toluene		0.00484 0.00199					
Ethylbenzene		0.0196 0.00199					
Xylenes, Total		0.0689 0.00199					
Total BTEX		0.09334 0.00199					
TPH by SW8015 Mod	Extracted:	Sep-15-17 18:00					
	Analyzed:	Sep-16-17 10:49					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		39.6 15.0					
Diesel Range Organics (DRO)		980 15.0					
Oil Range Hydrocarbons (ORO)		136 15.0					
Total TPH		1155.6 15					

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

Kelsey Brooks
Project Manager

Analytical Report 562895

for
TRC Solutions, Inc

Project Manager: Nikki Green
Sneed 9 Federal Com #2H (3-19-17)

20-SEP-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)



20-SEP-17

Project Manager: **Nikki Green**

TRC Solutions, Inc

2057 Commerce

Midland, TX 79703

Reference: XENCO Report No(s): **562895**

Sneed 9 Federal Com #2H (3-19-17)

Project Address: Lea County NM

Nikki Green:

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) 562895. 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. 562895 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink, appearing to read 'Kelsey Brooks', written over a horizontal line.

Kelsey Brooks

Project Manager

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

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**Sample Cross Reference 562895****TRC Solutions, Inc, Midland, TX**

Sneed 9 Federal Com #2H (3-19-17)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-1 @ 6"	S	09-13-17 14:00		562895-001
North-1 3"	S	09-13-17 14:05		562895-002
East-1 3"	S	09-13-17 14:10		562895-003
South-1 3"	S	09-13-17 14:15		562895-004
West-1 3"	S	09-13-17 14:20		562895-005
SP-1	S	09-13-17 14:25		562895-006
SP-2	S	09-13-17 14:30		562895-007



CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: Sneed 9 Federal Com #2H (3-19-17)

Project ID:

Work Order Number(s): 562895

Report Date: 20-SEP-17

Date Received: 09/14/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3028024 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 562895-002.

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

Batch: LBA-3028038 BTEX by EPA 8021B

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



Certificate of Analytical Results 562895

TRC Solutions, Inc, Midland, TX

Sneed 9 Federal Com #2H (3-19-17)

Sample Id: BH-1 @ 6"

Matrix: Soil

Date Received: 09.14.17 14.45

Lab Sample Id: 562895-001

Date Collected: 09.13.17 14.00

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.15.17 18.00

Basis: Wet Weight

Seq Number: 3027864

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.16.17 08.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.16.17 08.42	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.16.17 08.42	U	1
Total TPH	PHC635	<15	15	mg/kg	09.16.17 08.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.16.17 08.42	
o-Terphenyl	84-15-1	98	%	70-135	09.16.17 08.42	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.18.17 14.16

Basis: Wet Weight

Seq Number: 3028038

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.19.17 10.21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.19.17 10.21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.19.17 10.21	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	09.19.17 10.21	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.19.17 10.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	81	%	80-120	09.19.17 10.21	
1,4-Difluorobenzene	540-36-3	93	%	80-120	09.19.17 10.21	



Certificate of Analytical Results 562895



TRC Solutions, Inc, Midland, TX

Sneed 9 Federal Com #2H (3-19-17)

Sample Id: **North-1 3"**

Matrix: Soil

Date Received: 09.14.17 14.45

Lab Sample Id: 562895-002

Date Collected: 09.13.17 14.05

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.15.17 18.00

Basis: Wet Weight

Seq Number: 3027864

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	09.16.17 09.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	09.16.17 09.04	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	09.16.17 09.04	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	09.16.17 09.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	09.16.17 09.04	
o-Terphenyl	84-15-1	93	%	70-135	09.16.17 09.04	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.15.17 09.00

Basis: Wet Weight

Seq Number: 3028024

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	09.15.17 16.12	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	09.15.17 16.12	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	09.15.17 16.12	U	1
Xylenes, Total	1330-20-7	<0.002	0.002	mg/kg	09.15.17 16.12	U	1
Total BTEX		<0.002	0.002	mg/kg	09.15.17 16.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	33	%	80-120	09.15.17 16.12	**
1,4-Difluorobenzene	540-36-3	97	%	80-120	09.15.17 16.12	



Certificate of Analytical Results 562895



TRC Solutions, Inc, Midland, TX

Sneed 9 Federal Com #2H (3-19-17)

Sample Id: **East-1 3"**

Matrix: Soil

Date Received: 09.14.17 14.45

Lab Sample Id: 562895-003

Date Collected: 09.13.17 14.10

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.15.17 18.00

Basis: Wet Weight

Seq Number: 3027864

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.16.17 09.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	611	15.0	mg/kg	09.16.17 09.24		1
Oil Range Hydrocarbons (ORO)	PHCG2835	104	15.0	mg/kg	09.16.17 09.24		1
Total TPH	PHC635	715	15	mg/kg	09.16.17 09.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	09.16.17 09.24	
o-Terphenyl	84-15-1	95	%	70-135	09.16.17 09.24	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.18.17 14.16

Basis: Wet Weight

Seq Number: 3028038

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00403	0.00403	mg/kg	09.19.17 10.43	U	2
Toluene	108-88-3	<0.00403	0.00403	mg/kg	09.19.17 10.43	U	2
Ethylbenzene	100-41-4	<0.00403	0.00403	mg/kg	09.19.17 10.43	U	2
Xylenes, Total	1330-20-7	<0.00403	0.00403	mg/kg	09.19.17 10.43	U	2
Total BTEX		<0.00403	0.00403	mg/kg	09.19.17 10.43	U	2

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	80-120	09.19.17 10.43	
4-Bromofluorobenzene	460-00-4	93	%	80-120	09.19.17 10.43	



Certificate of Analytical Results 562895

TRC Solutions, Inc, Midland, TX

Sneed 9 Federal Com #2H (3-19-17)

Sample Id: South-1 3"

Matrix: Soil

Date Received: 09.14.17 14.45

Lab Sample Id: 562895-004

Date Collected: 09.13.17 14.15

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.15.17 18.00

Basis: Wet Weight

Seq Number: 3027864

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.16.17 09.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	09.16.17 09.45	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.16.17 09.45	U	1
Total TPH	PHC635	<15	15	mg/kg	09.16.17 09.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	09.16.17 09.45	
o-Terphenyl	84-15-1	94	%	70-135	09.16.17 09.45	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.18.17 14.16

Basis: Wet Weight

Seq Number: 3028038

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00399	0.00399	mg/kg	09.19.17 11.03	U	2
Toluene	108-88-3	<0.00399	0.00399	mg/kg	09.19.17 11.03	U	2
Ethylbenzene	100-41-4	<0.00399	0.00399	mg/kg	09.19.17 11.03	U	2
Xylenes, Total	1330-20-7	<0.00399	0.00399	mg/kg	09.19.17 11.03	U	2
Total BTEX		<0.00399	0.00399	mg/kg	09.19.17 11.03	U	2

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	86	%	80-120	09.19.17 11.03	
4-Bromofluorobenzene	460-00-4	82	%	80-120	09.19.17 11.03	



Certificate of Analytical Results 562895

TRC Solutions, Inc, Midland, TX

Sneed 9 Federal Com #2H (3-19-17)

Sample Id: West-1 3"

Matrix: Soil

Date Received: 09.14.17 14.45

Lab Sample Id: 562895-005

Date Collected: 09.13.17 14.20

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.15.17 18.00

Basis: Wet Weight

Seq Number: 3027864

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	09.16.17 10.07	U	1
Diesel Range Organics (DRO)	C10C28DRO	90.4	15.0	mg/kg	09.16.17 10.07		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	09.16.17 10.07	U	1
Total TPH	PHC635	90.4	15	mg/kg	09.16.17 10.07		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	09.16.17 10.07	
o-Terphenyl	84-15-1	93	%	70-135	09.16.17 10.07	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.18.17 14.16

Basis: Wet Weight

Seq Number: 3028038

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00341	0.00341	mg/kg	09.19.17 10.00	U	1
Toluene	108-88-3	<0.00341	0.00341	mg/kg	09.19.17 10.00	U	1
Ethylbenzene	100-41-4	<0.00341	0.00341	mg/kg	09.19.17 10.00	U	1
Xylenes, Total	1330-20-7	<0.00341	0.00341	mg/kg	09.19.17 10.00	U	1
Total BTEX		<0.00341	0.00341	mg/kg	09.19.17 10.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	84	%	80-120	09.19.17 10.00	
4-Bromofluorobenzene	460-00-4	89	%	80-120	09.19.17 10.00	



Certificate of Analytical Results 562895



TRC Solutions, Inc, Midland, TX

Sneed 9 Federal Com #2H (3-19-17)

Sample Id: SP-1

Matrix: Soil

Date Received: 09.14.17 14.45

Lab Sample Id: 562895-006

Date Collected: 09.13.17 14.25

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.15.17 18.00

Basis: Wet Weight

Seq Number: 3027864

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	18.1	15.0	mg/kg	09.16.17 10.28		1
Diesel Range Organics (DRO)	C10C28DRO	922	15.0	mg/kg	09.16.17 10.28		1
Oil Range Hydrocarbons (ORO)	PHCG2835	158	15.0	mg/kg	09.16.17 10.28		1
Total TPH	PHC635	1098.1	15	mg/kg	09.16.17 10.28		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	95	%	70-135	09.16.17 10.28		
o-Terphenyl	84-15-1	87	%	70-135	09.16.17 10.28		

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.15.17 09.00

Basis: Wet Weight

Seq Number: 3028024

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	09.15.17 17.47	U	1
Toluene	108-88-3	0.00660	0.00202	mg/kg	09.15.17 17.47		1
Ethylbenzene	100-41-4	0.0129	0.00202	mg/kg	09.15.17 17.47		1
Xylenes, Total	1330-20-7	0.0329	0.00202	mg/kg	09.15.17 17.47		1
Total BTEX		0.0524	0.00202	mg/kg	09.15.17 17.47		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	80-120	09.15.17 17.47		
1,4-Difluorobenzene	540-36-3	86	%	80-120	09.15.17 17.47		



Certificate of Analytical Results 562895



TRC Solutions, Inc, Midland, TX

Sneed 9 Federal Com #2H (3-19-17)

Sample Id: SP-2

Matrix: Soil

Date Received: 09.14.17 14.45

Lab Sample Id: 562895-007

Date Collected: 09.13.17 14.30

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 09.15.17 18.00

Basis: Wet Weight

Seq Number: 3027864

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	39.6	15.0	mg/kg	09.16.17 10.49		1
Diesel Range Organics (DRO)	C10C28DRO	980	15.0	mg/kg	09.16.17 10.49		1
Oil Range Hydrocarbons (ORO)	PHCG2835	136	15.0	mg/kg	09.16.17 10.49		1
Total TPH	PHC635	1155.6	15	mg/kg	09.16.17 10.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	09.16.17 10.49	
o-Terphenyl	84-15-1	91	%	70-135	09.16.17 10.49	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 09.15.17 09.00

Basis: Wet Weight

Seq Number: 3028024

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.15.17 18.06	U	1
Toluene	108-88-3	0.00484	0.00199	mg/kg	09.15.17 18.06		1
Ethylbenzene	100-41-4	0.0196	0.00199	mg/kg	09.15.17 18.06		1
Xylenes, Total	1330-20-7	0.0689	0.00199	mg/kg	09.15.17 18.06		1
Total BTEX		0.09334	0.00199	mg/kg	09.15.17 18.06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	80-120	09.15.17 18.06	
1,4-Difluorobenzene	540-36-3	85	%	80-120	09.15.17 18.06	



Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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TRC Solutions, Inc
Sneed 9 Federal Com #2H (3-19-17)

Analytical Method: TPH by SW8015 Mod

Seq Number: 3027864

MB Sample Id: 731082-1-BLK

Matrix: Solid

LCS Sample Id: 731082-1-BKS

Prep Method: TX1005P

Date Prep: 09.15.17

LCSD Sample Id: 731082-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1080	108	985	99	70-135	9	35	mg/kg	09.16.17 05:56	
Diesel Range Organics (DRO)	<15.0	1000	1130	113	1060	106	70-135	6	35	mg/kg	09.16.17 05:56	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	107		118		107		70-135	%	09.16.17 05:56			
o-Terphenyl	102		117		105		70-135	%	09.16.17 05:56			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3027864

Parent Sample Id: 562531-001

Matrix: Soil

MS Sample Id: 562531-001 S

Prep Method: TX1005P

Date Prep: 09.15.17

MSD Sample Id: 562531-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	1110	111	1010	101	70-135	9	35	mg/kg	09.16.17 06:57	
Diesel Range Organics (DRO)	<15.0	997	1120	112	1080	108	70-135	4	35	mg/kg	09.16.17 06:57	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			118		105		70-135	%	09.16.17 06:57			
o-Terphenyl			112		101		70-135	%	09.16.17 06:57			

Analytical Method: BTEX by EPA 8021B

Seq Number: 3028024

MB Sample Id: 731180-1-BLK

Matrix: Solid

LCS Sample Id: 731180-1-BKS

Prep Method: SW5030B

Date Prep: 09.15.17

LCSD Sample Id: 731180-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.101	101	0.101	100	70-130	0	35	mg/kg	09.15.17 14:20	
Toluene	<0.00200	0.100	0.0963	96	0.0970	96	70-130	1	35	mg/kg	09.15.17 14:20	
Ethylbenzene	<0.00200	0.100	0.0947	95	0.0947	94	71-129	0	35	mg/kg	09.15.17 14:20	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1,4-Difluorobenzene	91		96		95		80-120	%	09.15.17 14:20			
4-Bromofluorobenzene	80		94		88		80-120	%	09.15.17 14:20			



TRC Solutions, Inc
Sneed 9 Federal Com #2H (3-19-17)

Analytical Method: BTEX by EPA 8021B

Seq Number: 3028038

MB Sample Id: 731191-1-BLK

Matrix: Solid

LCS Sample Id: 731191-1-BKS

Prep Method: SW5030B

Date Prep: 09.18.17

LCSD Sample Id: 731191-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0796	80	0.0830	82	70-130	4	35	mg/kg	09.19.17 00:14	
Toluene	<0.00201	0.100	0.0918	92	0.0867	86	70-130	6	35	mg/kg	09.19.17 00:14	
Ethylbenzene	<0.00201	0.100	0.0933	93	0.0882	87	71-129	6	35	mg/kg	09.19.17 00:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	92		105		106		80-120	%	09.19.17 00:14
4-Bromofluorobenzene	96		105		99		80-120	%	09.19.17 00:14

Analytical Method: BTEX by EPA 8021B

Seq Number: 3028024

Parent Sample Id: 562895-002

Matrix: Soil

MS Sample Id: 562895-002 S

Prep Method: SW5030B

Date Prep: 09.15.17

MSD Sample Id: 562895-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0895	90	0.0919	92	70-130	3	35	mg/kg	09.15.17 14:57	
Toluene	<0.00199	0.0996	0.0869	87	0.0882	88	70-130	1	35	mg/kg	09.15.17 14:57	
Ethylbenzene	<0.00199	0.0996	0.0806	81	0.0823	82	71-129	2	35	mg/kg	09.15.17 14:57	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		97		80-120	%	09.15.17 14:57
4-Bromofluorobenzene	94		95		80-120	%	09.15.17 14:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3028038

Parent Sample Id: 562914-001

Matrix: Soil

MS Sample Id: 562914-001 S

Prep Method: SW5030B

Date Prep: 09.18.17

MSD Sample Id: 562914-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0671	67	0.0566	57	70-130	17	35	mg/kg	09.19.17 00:56	X
Toluene	<0.00201	0.100	0.0650	65	0.0605	61	70-130	7	35	mg/kg	09.19.17 00:56	X
Ethylbenzene	<0.00201	0.100	0.0657	66	0.0612	61	71-129	7	35	mg/kg	09.19.17 00:56	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		82		80-120	%	09.19.17 00:56
4-Bromofluorobenzene	107		115		80-120	%	09.19.17 00:56

[illegible]



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: TRC Solutions, Inc

Date/ Time Received: 09/14/2017 02:45:00 PM

Work Order #: 562895

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist**Comments**

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Connie Hernandez

Date: 09/15/2017

Checklist reviewed by:

Kelsey Brooks

Date: 09/15/2017



Photographic Documentation

Client: COG Operating, LLC
Project Name: Sneed 9 Federal Com #2H

Prepared by: TRC Environmental Corp.
Location: Lea County, NM

Photograph No. 1

Date:
June 9, 2017

Direction:
Northwest

GPS:
32.853639°,
-103.779049°

Description:
View of release
site.



Photograph No. 2

Date:
June 9, 2017

Direction:
Northwest

GPS:
32.853639°,
-103.779049°

Description:
View of release
site.





Photographic Documentation

Client: COG Operating, LLC
Project Name: Sneed 9 Federal Com #2H

Prepared by: TRC Environmental Corp.
Location: Lea County, NM

Photograph No. 3

Date:
September 13, 2017

Direction:
Northeast

GPS:
32.853467°,
-103.779304°

Description:
View of excavation
activities.



Photograph No. 4

Date:
September 13, 2017

Direction:
Northwest

GPS:
32.853467°,
-103.779304°

Description:
View of excavation
activities.





Photographic Documentation

Client: COG Operating, LLC
Project Name: Sneed 9 Federal Com #2H

Prepared by: TRC Environmental Corp.
Location: Lea County, NM

Photograph No. 5

Date:
October 4, 2017

Direction:
Northeast

GPS:
32.853421°,
-103.779407°

Description:
View of the
backfilled area.



Photograph No. 6

Date:
October 4, 2017

Direction:
Northwest

GPS:
32.853597°,
-103.779073°

Description:
View of backfilled
area.





Photographic Documentation

Client: COG Operating, LLC
Project Name: Sneed 9 Federal Com #2H

Prepared by: TRC Environmental Corp.
Location: Lea County, NM

Photograph No. 7

Date:
June 9, 2017

Direction:
Southwest

GPS:
32.853531°, -103.779081°

Description:
View of the lined secondary containment.



Photograph No. 8

Date:
September 13, 2017

Direction:
Southwest

GPS:
32.853531°, -103.779081°

Description:
View of lined secondary containment area.



Page 89 of 90
Received by OCD: 4/11/2023 11:31:00 AM
Released to Imaging: 4/19/2023 7:43:59 AM

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

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised April 3, 2017
Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR ☐ Initial Report ☒ Final Report

Name of Company	COG Operating, LLC	Contact	Robert McNeil
Address	600 West Illinois Avenue, Midland, Texas 79701	Telephone No.	432-683-7443
Facility Name	Sneed 9 Federal Com #002H	Facility Type	Tank Battery

Surface Owner	Federal	Mineral Owner		API No.	30-025-41409
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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
D	09	17S	32E	990	North	150	West	Lea

Latitude 32.8536568 Longitude -103.7796249 NAD83

NATURE OF RELEASE

Type of Release	Oil and Produced Water	Volume of Release	100 bbls Oil & 5 bbls PW	Volume Recovered	99 bbls Oil & 4 bbls PW
Source of Release	Free Water Knock Out	Date and Hour of Occurrence	March 19, 2017 7:00 am	Date and Hour of Discovery	March 19, 2017 7:00am
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	Ms. Yu - NMOCD & Ms. Tucker - BLM		
By Whom?	Rebecca Haskell	Date and Hour	March 20, 2017 12:27 PM		
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.*
The release was due to a pressure increase in the FWKO which caused the pop off to engage.

Describe Area Affected and Cleanup Action Taken.*
The release occurred within a lined facility and on the pad location. A vacuum truck was dispatched to remove all freestanding fluids. Concho sampled and delineated the impacted area and submitted a remediation workplan which was approved by the NMOCD. The impacted area was excavated and backfilled with remediated soil.

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>Rebecca Haskell</u>	OIL CONSERVATION DIVISION		
Printed Name: Rebecca Haskell	Approved by Environmental Specialist: <u>Buttan Hall</u>		
Title: Senior HSE Coordinator	Approval Date: 4/19/2023	Expiration Date: N/A	
E-mail Address: rhaskell@concho.com	Conditions of Approval: Closure approved under previous rules per approved workplan.		Attached ☐
Date: December 18, 2017	Phone: 432-683-7443		

Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 206291

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 206291
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
bhall	Closure approved under previous rules per approved workplan.	4/19/2023