Reference No. 11194153



June 24, 2019

Mr. Mike Bratcher New Mexico Oil Conservation Division 811 South First Street Artesia, New Mexico 88210

#### Re: Closure Request SRO State Com #065 Remediation Permit Number 2RP-5362 Eddy County, New Mexico

Dear Mr. Bratcher:

GHD Services, Inc. (GHD), on behalf of COG Operating, LLC (COG), respectfully submits this Site Closure Report to the New Mexico Oil Conservation Division (NMOCD) District II office for the Remediation Permit Number 2RP-5362. This Site Closure Report provides documentation detailing delineation, soil sampling, remediation and restoration activities at the SRO State Com #065 (Site) located in SW/NW quarter (Unit Letter E) of Section 10, T-26-S, R-38E on surface lands owned by the State of New Mexico. The Site is located in Eddy County, approximately 26 miles south/southeast of Carlsbad, New Mexico and GPS coordinates for the Site are 32.05840 N, -104.08295 W (Figure 1).

### 1. Release Information and Response Activities

On March 27, 2019, approximately 5 barrels (bbls) of produced water were released into a pasture caused by a leak in the flow line transition to the ball valve. A vacuum truck was dispatched to remove the freestanding fluid. COG reported the release to the NMOCD on a Release Notification and Corrective Active C-141 form on April 11, 2019. The release was assigned a Remediation Permit (RP) Number 2RP-5362. A copy of the initial C-141 form is included in Appendix A.

## 2. Regulatory Framework

GHD characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter, 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data collected from the New Mexico Office of the State Engineer (NMOSE) database (Appendix B). The nearest permitted water well C 02160 with depth to groundwater information is located approximately 1.2 miles southeast of the Site, with a depth of 120 feet bgs. The nearest continuously flowing watercourse or significant watercourse is an unnamed dry wash located 2.1 miles south of the Site. The lateral extents of the release are greater than 200 feet of any lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a medium karst area. GHD understands this determination places the Site into the most stringent closure criteria category (<50 feet to groundwater). An aerial image of the general area with Bureau of Land Management (BLM) karst data is presented in Appendix C.





Based on these criteria, the following numerical limits on Table 1 to 19.15.29.12 NMAC closure criteria apply:

Medium Karst Area and/or depth to groundwater < 50 feet bgs	Chloride	600 mg/kg
	TPH (GRO/DRO/MRO)	100 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

## 3. Soil Assessment and Remediation

Soil Assessment and remediation activities were conducted on-site over the period from April 8 through May 16, 2019. A Utility Locate (One-Call) was submitted 48 hours prior to initiating any subsurface activities to notify companies with subsurface utilities in the area of the proposed intrusive assessment.

### 3.1 Soil Excavation and Confirmation Sampling

Under the direction of COG, GHD and COG's contractor Culberson Construction Energy Services (CCI) mobilized to the Site on April 8, 2019 to assess the nature and extent of the produced water release. Test pits were excavated in the direct vicinity of the release to a depth of approximately three feet. Using visual and Hach® chloride QuanTab® test strips field-screening methods, soil conditions indicated that the depth of impacts varied.

Between April 10 and 12, 2019, soil excavation activities were performed with the purpose of excavating impacted soils and the collecting horizontal and vertical delineation soil samples below the closure criteria established for the release site. Impacted soils were removed systemically using a backhoe, with a CCI spotter and GHD site supervisor directing the soil removal operations. The depth of excavation ranged from approximately one foot to seven feet bgs. The boundaries of the excavation measured 45 feet x 35 feet.

In efforts to delineate the excavation horizontally and vertically, four composite sidewall confirmation samples (NSW-1, WSW-1, ESW-1 and SSW-1) and eleven composite floor samples (at varying depths across the bottom of the excavation) were collected by a GHD representative on April 11, 2019 and May 6, 2019. The samples were transported under chain-of-custody to Xenco Laboratories (Xenco) in Midland, Texas and were analyzed for total petroleum hydrocarbons (TPH) by EPA Method 8015 modified; benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B, and chloride by EPA Method 300.0. All four of the sidewall confirmation samples and five of the vertical confirmation soil samples (SP 2-3', SP 5-3', SP 7-1, & SP 8-1) results exhibited TPH, BTEX and chloride concentrations below the determined closure criteria for this Site. Three excavation floor sample (SP 1-7' SP 3-5' & SP 6-1') results exhibited a chloride concentration above the closure criteria for this Site. On April 12, 2019, GHD directed CCI to perform additional excavation activities in these three respective areas to deeper depths in an effort to delineate vertically. Subsequent soil samples (SP 1-9', SP 3-6', SP 6-2') from these three corresponding areas were collected on April 17, 2019 and transported under chain-of-custody to Xenco then analyzed for



total petroleum hydrocarbons (TPH) by EPA Method 8015 modified, benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B and chloride by EPA Method 300.0. Sample results from these areas exhibited TPH, BTEX and chloride concentrations below the determined closure criteria for this Site.

The horizontal and vertical excavation extents, sample locations and final confirmation analytical results are shown in Figure 2 – Site Detail and Analytical Results Map and summarized on Table 1- Soil Analytical Data Summary – Confirmation Sampling. Laboratory analytical reports are included in Appendix D.

### 3.2 Site Remediation, Waste Management and Restoration Activities

On May 8, 2019, Baeza trucking completed the offsite hauling and transportation of the impacted materials for disposal to the R360 facility in Orla, Texas. Eighteen truckloads (18 cubic yards per load) or 324 cubic yards total were loaded onto haul trucks and transported to the R360 facility for disposal.

Approximately 324 cubic yards of clean soils were trucked to the Site by Baeza trucking from an offsite COG borrow pit near the Site. Between May 14 through 16, 2019, backfilling activities were performed. Soils were placed and compacted in the remedial excavation by CCI and the new ground surface was graded to match the surrounding topography.

A photographic log documenting Site conditions before excavation, during excavation, backfilling and remediation activities is provided in Appendix E.

### 4. Project Summary – No Further Action 2RP-5362

This Site Closure Report was prepared under the direction of COG. Impacted soil materials above the established closure criteria were removed from the Site. Final confirmation samples indicate the horizontal and vertical extent of the impacts were delineated to the applicable NMOCD closure standards for the release. The remedial excavation was backfilled with clean soil material from a nearby borrow pit and restored to near original condition. An updated NMOCD C-141 form is included in Appendix A. Based on these corrective actions performed at the Site to date and outlined in this report, no further action is recommended for the Site.

Sincerely,

GHD

Thomas Clayon

Thomas C. Larson Midland Operations Manager

TL/tc/01

Cc: Ike Tavarez, COG

James Olenel

James Ornelas Project Manager



#### Attachments:

Figure 1 – Site Location Map

Figure 2 – Site Detail and Analytical Results Map

Table 1 -- Soil Analytical Data Summary - Confirmation Sampling

Appendix A - Initial/Final NMOCD C-141 Forms (2RP-5362)

Appendix B - NMOSE Water Data

Appendix C – BLM Karst Potential Map

Appendix D - Analytical Laboratory Reports

Appendix E - Photographic Log

# Figures





CAD File: I:\CAD\Files\Eight Digit Job Numbers\1119----\11194153-SRO-State Com #65 Release\11194153-01\11194153-01(001)\11194153-01(001)GN-DL001.dwg

## FIGURE 1



Lat/Long: 32.058358° North, 104.082978° West

11194153-01



### 0 5 10ft Coordinate System: NAD 1983 (2011) StatePlane-New Mexico East (US Feet)

CONCHO OIL & GAS EDDY COUNTY, NEW MEXICO SRO STATE COM #65 RELEASE

## SITE DETAIL AND ANALYTICAL RESULTS MAP

### **FIGURE 2**

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1119----\11194153-SRO-State Com #65 Release\11194153-01(001)\11194153-01(001)\11194153-01(001)\GN-DL001.dwg

# Table

## Table 1 Soil Analytical Data Summary - Confirmation Sampling SRO State Com #65 Release Concho Oil Gas Eddy County, New Mexico

										ТРН			
Sample ID	Sample	Denth (bas)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	GRO(C6- C12)	DRO(C12- C28)	MRO (C28- C35)	Total (GRO/DRO/MRO)	Chloride	
	Date		(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	
				Table I Closure Criteria for Soils <50 feet to Groundwater 19.15.29 NMAC									
			10 mg/Kg				50 mg/Kg				100 mg/Kg	600 mg/Kg	
	4/44/0040	SIDEWALL (COMPOSITE) AND BOTTOM CONFIRMATION SAMPLE RESULTS											
NSVV -1	4/11/2019	composite	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<25.0	<25.0	<25.0	<25.0	17.3	
NSVV -1	5/6/2019	composite						<15.0	<15.0	<15.0	<15.0		
WSW-1	4/11/2019	composite	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	<24.9	<24.9	<24.9	17.2	
WSW-1	5/6/2019	composite						<15.0	<15.0	<15.0	<15.0		
ESW-1	4/11/2019	composite	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<25.0	<25.0	<25.0	<25.0	<5.05	
ESW-1	5/6/2019	composite						<15.0	<15.0	<15.0	<15.0		
SSW-1	4/11/2019	composite	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<25.0	<25.0	<25.0	<25.0	<5.01	
SSW-1	5/6/2019	composite						<15.0	<15.0	<15.0	<15.0		
SP 1-7'	4/11/2019	7'	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.0	<25.0	<25.0	<25.0	1,070	
SP 1-9'	4/17/2019	9'	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	230	
SP 2-3'	4/11/2019	3'	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	38.3	
SP 2-3'	5/6/2019	3'						<14.9	<14.9	<14.9	<14.9		
SP 3-5'	4/11/2019	5'	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	<24.9	<24.9	<24.9	1,120	
SP 3-6'	4/17/2019	6'	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	450	
SP 4-3'	4/11/2019	3'	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<25.0	<25.0	<25.0	<25.0	9.45	
SP 4-3'	5/6/2019	3'						<15.0	<15.0	<15.0	<15.0		
SP 5-3'	4/11/2019	3'	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<24.9	<24.9	<24.9	<24.9	62.0	
SP 5-3'	5/6/2019	3'						<15.0	<15.0	<15.0	<15.0		
SP 6-1'	4/11/2019	1'	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<24.9	<24.9	<24.9	<24.9	678	
SP 6-2'	4/17/2019	2'	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<5.00	
SP 7-1	4/11/2019	1'	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<25.0	<25.0	<25.0	<25.0	10.0	
SP 7-1	5/6/2019	1'						<15.0	<15.0	<15.0	<15.0		
SP 8-1	4/11/2019	1'	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<25.0	<25.0	<25.0	<25.0	<5.05	
SP 8-1	5/6/2019	1'						<15.0	<15.0	<15.0	<15.0		

1. Values reported in mg/kg

2. < = Value Less than Reporting Limit (RL)

3. Bold Indicates Analyte Detected

4. Highlighted = Above Closure Criteria

5. BTEX analyses by EPA Method SW 8021B.

6. All final confirmation samples were analyzed for TPH by EPA Method SW 8015 Mod.

7. GRO/DRO/MRO = Gasoline Range Organic/Diesel Range Organic/Motor Oil Range Organic

8. Chloride anlaysis by EPA Method 300/300.1



GHD | COG Operating Closure Request | SOR State Com #65 | 11194153

# Appendix A Initial/Final NMOCD C-141 Form (2RP-5362)

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-5362
Facility ID	
Application ID	

## Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>&gt;100</u> (ft bgs)
Did this release impact groundwater or surface water?	🗌 Yes 🛛 No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	🗌 Yes 🛛 No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	🗌 Yes 🛛 No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	🗌 Yes 🛛 No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	🗌 Yes 🛛 No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	🗌 Yes 🛛 No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	🗌 Yes 🛛 No
Are the lateral extents of the release within 300 feet of a wetland?	🗌 Yes 🛛 No
Are the lateral extents of the release overlying a subsurface mine?	🗌 Yes 🛛 No
Are the lateral extents of the release overlying an unstable area such as karst geology?	🛛 Yes 🗌 No
Are the lateral extents of the release within a 100-year floodplain?	🗌 Yes 🛛 No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	🖂 Yes 🗌 No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

#### Characterization Report Checklist: Each of the following items must be included in the report.

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within <sup>1</sup>/<sub>2</sub>-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141	State of New Mexico	Incident ID	
Page 4	Oil Conservation Division	District RP	2RP-5362
		Facility ID	
		Application ID	
I hereby certify that the information regulations all operators are require public health or the environment. T failed to adequately investigate and addition, OCD acceptance of a C-1 and/or regulations. Printed Name: Ike Tavarez Signature: email:itavarez@concho.com	n given above is true and complete to the best of my kr ed to report and/or file certain release notifications and The acceptance of a C-141 report by the OCD does not 1 remediate contamination that pose a threat to groundv 41 report does not relieve the operator of responsibility Title: Title: Date: Telephone:43.	nowledge and understand that pursu perform corrective actions for rele relieve the operator of liability sho vater, surface water, human health y for compliance with any other fee Senior HSE Supervisor 2-685-2573	uant to OCD rules and cases which may endanger ould their operations have or the environment. In deral, state, or local laws
OCD Only			
Received by:	Dat	te:	

State of New Mexico Oil Conservation Division

Incident ID	
District RP	2RP-5362
Facility ID	
Application ID	

## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

<b><u>Closure Report Attachment Checklist</u>:</b> Each of the following a	items must be included in the closure report.								
A scaled site and sampling diagram as described in 19.15.29.11 NMAC									
Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)									
Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)									
Description of remediation activities									
I hereby certify that the information given above is true and comple and regulations all operators are required to report and/or file certai may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and re- human health or the environment. In addition, OCD acceptance of compliance with any other federal, state, or local laws and/or regula restore, reclaim, and re-vegetate the impacted surface area to the co- accordance with 19.15.29.13 NMAC including notification to the O Printed Name: Ike Tavarez	<pre>tet to the best of my knowledge and understand that pursuant to OCD rules in release notifications and perform corrective actions for releases which f a C-141 report by the OCD does not relieve the operator of liability mediate contamination that pose a threat to groundwater, surface water, 'a C-141 report does not relieve the operator of responsibility for ations. The responsible party acknowledges they must substantially onditions that existed prior to the release or their final land use in DCD when reclamation and re-vegetation are complete.</pre>								
OCD Only									
Received by:	Date:								
Closure approval by the OCD does not relieve the responsible party remediate contamination that poses a threat to groundwater, surface party of compliance with any other federal, state, or local laws and/	of liability should their operations have failed to adequately investigate and water, human health, or the environment nor does not relieve the responsible for regulations.								
Closure Approved by:	Date:								
Printed Name:									

# Appendix B NMOSE Water Data

GHD | COG Operating Closure Request I SOR State Com #65 | 11194153



# New Mexico Office of the State Engineer Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 LITM in meters)					
Well Tag	POD Number	Q64 Q16 Q4 S	Sec Tws Rng	X Y	_		
	C 02160	4 1 2 1	14 26S 28E	589243 3546044*	6		
Driller Licens	e:	Driller Company:					
Driller Name:	HEMLER						
Drill Start Dat	te:	Drill Finish Date:	12/01/1959	Plug Date:			
Log File Date	:	PCW Rcv Date:		Source:	Shallow		
Pump Type:	JOHNSO	Pipe Discharge Siz	ze:	Estimated Yiel	d:		
Casing Size:		Depth Well:	300 feet	Depth Water:	120 feet		

\*UTM location was derived from PLSS - see Help

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



# Appendix C USGS Karst Map

# **Karst Potential Map**

Data from BLM

720



Malaga



A N

7 mi



285



© 2018 Google

Appendix D Analytical Laboratory Reports (not included in Draft form)



## **Analytical Report 620919**

for

## **Concho Resources Inc.**

**Project Manager: Dakota Neel** 

Concho SRO 65 11194153 04.15.2019

Collected By: Client



1211 W. Florida Ave Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429), North Carolina (483) Xenco-Lakeland: Florida (E84098)



04.15.2019 Project Manager: **Dakota Neel Concho Resources Inc.** 1 Concho Center 600 West Illinois Ave Midland, TX 79701

Reference: XENCO Report No(s): 620919 Concho SRO 65 Project Address:

#### Dakota Neel:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620919. 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. 620919 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,

Debbie Semmon

**Debbie Simmons** Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



## Sample Cross Reference 620919

### Concho Resources Inc., Midland, TX

Concho SRO 65

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
NSW-1	S	04.11.2019 12:25		620919-001
WSW-1	S	04.11.2019 11:30		620919-002
ESW-1	S	04.11.2019 14:50		620919-003
SSW-1	S	04.11.2019 14:40		620919-004
SP1 7'	S	04.11.2019 15:00	7 ft	620919-005
SP2 3'	S	04.11.2019 11:40	3 ft	620919-006
SP-3 5'	S	04.11.2019 15:05	5 ft	620919-007
SP-4-3'	S	04.11.2019 13:10	3 ft	620919-008
S-5 3'	S	04.11.2019 12:45	3 ft	620919-009
SP-6 1'	S	04.11.2019 14:30	1 ft	620919-010
SP7-1	S	04.11.2019 14:55		620919-011
SP8-1	S	04.11.2019 13:00		620919-012



## **CASE NARRATIVE**

Client Name: Concho Resources Inc. Project Name: Concho SRO 65

 Project ID:
 11194153

 Work Order Number(s):
 620919

 Report Date:
 04.15.2019

 Date Received:
 04.12.2019

#### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

#### Analytical non conformances and comments:

Batch: LBA-3085717 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030. Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 620919-001,620919-002,620919-003,620919-004,620919-012,620919-008,620919-010,620919-011,620919-007.

Lab Sample ID 620919-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes recovered below QC limits in the Matrix Spike. Benzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 620919-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene is within laboratory Control Limits, therefore the data was accepted.



## Certificate of Analysis Summary 620919

Concho Resources Inc., Midland, TX

Project Name: Concho SRO 65

Project Id: 11194153 Contact: Dakota Neel

**Project Location:** 

 Date Received in Lab:
 Fri 04.12.2019 10:10

 Report Date:
 04.15.2019 18:14

 Project Manager:
 Debbie Simmons

	Lab Id:	620919-001		620919-002		620919-003		620919-004		620919-005		620919-006	
Analysis Requested	Field Id:	NSW-1		WSW-1		ESW-1		SSW-1		SP1 7'		SP2 3'	
Απαιγείες Λεγμεείεα	Depth:									7- ft		3- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL	,	SOIL		SOIL	
	Sampled:	04.11.2019	12:25	04.11.2019	11:30	04.11.2019	14:50	04.11.2019	14:40	04.11.2019	15:00	04.11.2019	11:40
BTEX by EPA 8021B	Extracted:	04.14.2019	16:07	04.14.2019	16:07	04.14.2019	16:07	04.14.2019	16:07	04.14.2019	16:07	04.14.2019 16:07	
	Analyzed:	04.14.2019	19:59	04.14.2019	20:18	04.14.2019	20:37	04.14.2019	20:55	04.14.2019	21:14	04.14.2019	21:33
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200
Toluene		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200
Ethylbenzene		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200
m,p-Xylenes		< 0.00396	0.00396	< 0.00401	0.00401	< 0.00403	0.00403	< 0.00402	0.00402	< 0.00398	0.00398	< 0.00399	0.00399
o-Xylene		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200
Total Xylenes		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200
Total BTEX		< 0.00198	0.00198	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00201	0.00201	< 0.00199	0.00199	< 0.00200	0.00200
Chloride by EPA 300	Extracted:	04.12.2019	11:30	04.12.2019 11:30		04.12.2019 11:30		04.12.2019 11:30		04.12.2019 11:30		04.12.2019 11:30	
	Analyzed:	04.13.2019	00:22	04.12.2019	14:32	04.12.2019	14:38	04.12.2019	14:45	04.12.2019	14:51	04.12.2019	15:10
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		17.3	4.98	17.2	5.01	< 5.05	5.05	<5.01	5.01	1070	49.6	38.3	4.99
TPH by Texas1005	Extracted:	04.13.2019	08:00	04.13.2019	08:00	04.13.2019	08:00	04.13.2019	08:00	04.13.2019	08:00	04.13.2019	08:00
	Analyzed:	04.13.2019	09:48	04.13.2019	10:35	04.13.2019	10:51	04.13.2019	11:07	04.13.2019	11:23	04.13.2019	11:38
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Range Hydrocarbons		<25.0	25.0	<24.9	24.9	<25.0	25.0	<25.0	25.0	<25.0	25.0	<25.0	25.0
C12-C28 Range Hydrocarbons		<25.0	25.0	<24.9	24.9	<25.0	25.0	<25.0	25.0	<25.0	25.0	<25.0	25.0
C28-C35 Range Hydrocarbons		<25.0	25.0	<24.9	24.9	<25.0	25.0	<25.0	25.0	<25.0	25.0	<25.0	25.0
Total TPH		<25.0	25.0	<24.9	24.9	<25.0	25.0	<25.0	25.0	<25.0	25.0	<25.0	25.0

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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Debbie Seminour

Debbie Simmons Project Manager

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## Certificate of Analysis Summary 620919

Concho Resources Inc., Midland, TX

Project Name: Concho SRO 65

Project Id: 11194153 Dakota Neel

**Contact:** 

**Project Location:** 

Date Received in Lab: Fri 04.12.2019 10:10 Report Date: 04.15.2019 18:14 Project Manager: Debbie Simmons

	Lab Id:	620919-0	07	620919-0	08	620919-009		620919-010		620919-011		620919-012	
Analysis Requested	Field Id:	SP-3 5'		SP-4-3'		S-5 3'		SP-6 1'		SP7-1		SP8-1	
Απαιγείε Κεγμεείεα	Depth:	5- ft		3- ft		3- ft		1- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	04.11.2019	15:05	04.11.2019	13:10	04.11.2019	12:45	04.11.2019	14:30	04.11.2019	14:55	04.11.2019	13:00
BTEX by EPA 8021B	Extracted:	04.14.2019	16:07	04.14.2019	16:07	04.14.2019	16:07	04.14.2019	16:07	04.14.2019	16:07	04.14.2019	16:07
	Analyzed:	04.14.2019	21:52	04.14.2019	22:11	04.14.2019	22:30	04.14.2019	22:49	04.15.2019	00:04	04.15.2019	00:23
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00199	0.00199
Toluene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00199	0.00199
Ethylbenzene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00199	0.00199
m,p-Xylenes		< 0.00400	0.00400	< 0.00400	0.00400	< 0.00402	0.00402	< 0.00401	0.00401	< 0.00403	0.00403	< 0.00398	0.00398
o-Xylene		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00199	0.00199
Total Xylenes		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00199	0.00199
Total BTEX		< 0.00200	0.00200	< 0.00200	0.00200	< 0.00201	0.00201	< 0.00200	0.00200	< 0.00202	0.00202	< 0.00199	0.00199
Chloride by EPA 300	Extracted:	04.12.2019	11:30	04.12.2019 11:30		04.12.2019 11:30		04.12.2019 11:30		04.12.2019 11:30		04.12.2019 11:30	
	Analyzed:	04.12.2019	15:16	04.12.2019	15:23	04.12.2019	15:29	04.12.2019	15:35	04.13.2019	00:41	04.12.2019	16:01
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1120	24.9	9.45	4.99	62.0	5.03	678	5.05	10.0	5.01	< 5.05	5.05
TPH by Texas1005	Extracted:	04.13.2019	08:00	04.13.2019	08:00	04.13.2019	08:00	04.13.2019	08:00	04.13.2019	08:00	04.13.2019	08:00
	Analyzed:	!: 04.13.2019 11:54		04.13.2019	12:10	04.13.2019	12:26	04.13.2019	12:42	04.13.2019	13:30	04.13.2019	13:45
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Range Hydrocarbons		<24.9	24.9	<25.0	25.0	<24.9	24.9	<24.9	24.9	<25.0	25.0	<25.0	25.0
C12-C28 Range Hydrocarbons		<24.9	24.9	<25.0	25.0	<24.9	24.9	<24.9	24.9	<25.0	25.0	<25.0	25.0
C28-C35 Range Hydrocarbons		<24.9	24.9	<25.0	25.0	<24.9	24.9	<24.9	24.9	<25.0	25.0	<25.0	25.0
Total TPH		<24.9	24.9	<25.0	25.0	<24.9	24.9	<24.9	24.9	<25.0	25.0	<25.0	25.0

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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Debbie Seminour

**Debbie Simmons** Project Manager

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## **Flagging Criteria**

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

\*\* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

- RL Reporting Limit
- MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	nt Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labo	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate
	~			

+ NELAC certification not offered for this compound.

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



Work Orders: 620919 Project ID: 11194153 Lab Batch #: 3085693 Matrix: Soil Sample: 620919-001 / SMP Batch: 1 Date Analyzed: 04.13.2019 09:48 Units: mg/kg SURROGATE RECOVERY STUDY Amount True Control **TPH by Texas1005** Found Limits Amount Recovery Flags %R %R [A] [B] Analytes [D] o-Terphenyl 48.0 50.0 96 70-130 1-Chlorooctane 91.3 99.9 91 70-130 Lab Batch #: 3085693 Sample: 620919-002 / SMP Batch: 1 Matrix: Soil mg/kg Date Analyzed: 04.13.2019 10:35 Units: SURROGATE RECOVERY STUDY Amount True Control **TPH by Texas1005** Recovery Flags Found Amount Limits [A] [**B**] %R %R [D] Analytes o-Terphenyl 47.6 49.8 96 70-130 1-Chlorooctane 91.6 99.6 92 70-130 Sample: 620919-003 / SMP Lab Batch #: 3085693 Matrix: Soil Batch: 1 Date Analyzed: 04.13.2019 10:51 Units: mg/kg SURROGATE RECOVERY STUDY Amount True Control **TPH by Texas1005** Found Amount Recovery Limits Flags %R [A] [B] %R [D] Analytes o-Terphenyl 47.5 50.0 95 70-130 1-Chlorooctane 91.7 99.9 92 70-130 Lab Batch #: 3085693 Sample: 620919-004 / SMP Matrix: Soil Batch: 1 Units: mg/kg Date Analyzed: 04.13.2019 11:07 SURROGATE RECOVERY STUDY Amount True Control **TPH by Texas1005** Found Amount Recovery Limits Flags [A] [B] %R %R [D] Analytes o-Terphenyl 49.1 49.9 98 70-130 1-Chlorooctane 92.5 99.8 93 70-130 Lab Batch #: 3085693 Sample: 620919-005 / SMP Batch: 1 Matrix: Soil Date Analyzed: 04.13.2019 11:23 Units: mg/kg SURROGATE RECOVERY STUDY Amount True Control **TPH by Texas1005** Found Amount Recovery Limits Flags %R [A] [B] %R [D] Analytes o-Terphenyl 48.1 49.9 96 70-130 1-Chlorooctane 91.8 99.8 92 70-130

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.



Work Orders: 620919 Project ID: 11194153 Lab Batch #: 3085693 Matrix: Soil Sample: 620919-006 / SMP Batch: 1 Date Analyzed: 04.13.2019 11:38 Units: mg/kg SURROGATE RECOVERY STUDY Amount True Control **TPH by Texas1005** Found Limits Amount Recovery Flags %R %R [A] [B] Analytes [D] o-Terphenyl 48.4 50.0 97 70-130 1-Chlorooctane 90.4 100 70-130 90 Lab Batch #: 3085693 Sample: 620919-007 / SMP Batch: 1 Matrix: Soil mg/kg Date Analyzed: 04.13.2019 11:54 Units: SURROGATE RECOVERY STUDY Amount True Control **TPH by Texas1005** Recovery Flags Found Amount Limits [A] [**B**] %R %R [D] Analytes o-Terphenyl 47.0 49.9 94 70-130 1-Chlorooctane 90.0 99.7 90 70-130 Sample: 620919-008 / SMP Lab Batch #: 3085693 Matrix: Soil Batch: 1 Date Analyzed: 04.13.2019 12:10 Units: mg/kg SURROGATE RECOVERY STUDY Amount True Control **TPH by Texas1005** Found Amount Recovery Limits Flags %R [A] [B] %R [D] Analytes o-Terphenyl 52.5 105 50.0 70-130 1-Chlorooctane 99.5 99.9 100 70-130 Lab Batch #: 3085693 Sample: 620919-009 / SMP Matrix: Soil Batch: 1 Units: mg/kg Date Analyzed: 04.13.2019 12:26 SURROGATE RECOVERY STUDY Amount True Control **TPH by Texas1005** Found Amount Recovery Limits Flags [A] [B] %R %R [D] Analytes o-Terphenyl 48.3 49.8 97 70-130 1-Chlorooctane 89.6 99.6 90 70-130 Lab Batch #: 3085693 Sample: 620919-010 / SMP Batch: 1 Matrix: Soil Date Analyzed: 04.13.2019 12:42 Units: mg/kg SURROGATE RECOVERY STUDY Amount True Control **TPH by Texas1005** Found Amount Recovery Limits Flags %R [A] [B] %R [D] Analytes o-Terphenyl 47.5 49.8 95 70-130 1-Chlorooctane 89.0 99.6 70-130 89

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.



Work Ord	lers: 62091	9	<b>Project ID:</b> 11194153								
Lab Batch #	: 3085693	Sample: 620919-011 / SMP	Batch	n: 1 Matrix:	Soil						
Units:	mg/kg	Date Analyzed: 04.13.2019 13:30	SURROGATE RECOVERY STUDY								
	TPH	A polytos	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes	1								
o-Terphenyl			47.9	49.9	96	70-130					
I-Chlorooctai	ne	GM2/210.010022	90.0	99.8	90	70-130					
Lab Batch #	: 3085693	Sample: 620919-012 / SMP	Batch	n: 1 Matrix:	5011						
Units:	mg/kg	Date Analyzed: 04.13.2019 13:45	SU	RROGATE RI	ECOVERY S	STUDY					
	TPH	I by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
o-Terphenyl			54.9	50.0	110	70-130					
1-Chlorooctar	ne		102	100	102	70-130					
Lab Batch #	: 3085717	Sample: 620919-001 / SMP	Batch	n: <sup>1</sup> Matrix:	Soil	11					
Units:	mg/kg	Date Analyzed: 04.14.2019 19:59	SU	RROGATE RI	ECOVERY S	STUDY					
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes		1	[0]						
1,4-Difluorob	enzene		0.0295	0.0300	98	70-130					
4-Bromofluor	robenzene	GC_00_010.002 / C	0.0453	0.0300	151	70-130	**				
Lab Batch #	: 3085/1/	Sample: 620919-002 / SMP	Batch: 1 Matrix: Soil								
Units:	mg/kg	Date Analyzed: 04.14.2019 20:18	SURROGATE RECOVERY STUDY								
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorob	enzene		0.0290	0.0300	97	70-130					
4-Bromofluor	robenzene		0.0438	0.0300	146	70-130	**				
Lab Batch #	: 3085717	Sample: 620919-003 / SMP	Batch	n: 1 Matrix:	Soil						
Units:	mg/kg	Date Analyzed: 04.14.2019 20:37	SU	RROGATE RI	ECOVERY S	STUDY					
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1.4 Difluorob	enzene		0.0284	0.0300	95	70-130					
1,4-Dilluoio0	enzene		0.0201	0.0500	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	/0150					

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / BAll results are based on MDL and validated for QC purposes.



Work Or	ders: 62091	9		Project ID:	11194153						
Lab Batch	<b>#:</b> 3085717	Sample: 620919-004 / SMP	Batch	n: 1 Matrix:	Soil						
Units:	mg/kg	Date Analyzed: 04.14.2019 20:55	SURROGATE RECOVERY STUDY								
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
1,4-Difluoro	obenzene		0.0288	0.0300	96	70-130					
4-Bromoflue	orobenzene		0.0424	0.0300	141	70-130	**				
Lab Batch	#: 3085717	Sample: 620919-005 / SMP	Batch	n: 1 Matrix:	Soil						
Units:	mg/kg	Date Analyzed: 04.14.2019 21:14	SU	RROGATE RI	ECOVERYS	STUDY					
	BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluore	obenzene		0.0321	0.0300	107	70-130					
4-Bromoflue	orobenzene		0.0270	0.0300	90	70-130					
Lab Batch	#: 3085717	Sample: 620919-006 / SMP	Batch	n: <sup>1</sup> Matrix:	Soil						
Units:	mg/kg	Date Analyzed: 04.14.2019 21:33	SU	RROGATE RI	ECOVERY	STUDY					
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluore	obenzene		0.0307	0.0300	102	70-130					
4-Bromoflu	orobenzene		0.0370	0.0300	123	70-130					
Lab Batch	#: 3085717	Sample: 620919-007 / SMP	Batch	n: 1 Matrix:	Soil						
Units:	mg/kg	Date Analyzed: 04.14.2019 21:52	SURROGATE RECOVERY STUDY								
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
1,4-Difluorc					00	70 120					
	obenzene		0.0288	0.0300	90	70-130					
4-Bromoflue	orobenzene		0.0288	0.0300	140	70-130	**				
4-Bromoflue Lab Batch	orobenzene #: 3085717	Sample: 620919-008 / SMP	0.0288 0.0419 Batch	0.0300 0.0300 n: 1 Matrix:	96 140 Soil	70-130	**				
4-Bromoflue Lab Batch Units:	orobenzene #: 3085717 mg/kg	Sample: 620919-008 / SMP Date Analyzed: 04.14.2019 22:11	0.0288 0.0419 Batch SU	0.0300 0.0300 n: 1 Matrix: RROGATE RI	96 140 Soil	70-130 70-130	**				
4-Bromoflue Lab Batch Units:	obenzene orobenzene #: 3085717 mg/kg BTEX	Sample: 620919-008 / SMP Date Analyzed: 04.14.2019 22:11 X by EPA 8021B Analytes	0.0288 0.0419 Batch SU Amount Found [A]	0.0300 0.0300 n: 1 Matrix: RROGATE RI True Amount [B]	Soil ECOVERY S Recovery %R [D]	70-130       70-130       STUDY       Control       Limits       %R	** Flags				
4-Bromoflu Lab Batch Units:	obenzene orobenzene #: 3085717 mg/kg BTEX	Sample: 620919-008 / SMP Date Analyzed: 04.14.2019 22:11 X by EPA 8021B Analytes	0.0288 0.0419 Batch SU Amount Found [A] 0.0286	0.0300 0.0300 n: 1 Matrix: RROGATE RI True Amount [B] 0.0300	36           140           Soil           ECOVERY S           Recovery %R [D]           95	70-130 70-130 STUDY Control Limits %R	** Flags				

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / BAll results are based on MDL and validated for QC purposes.



Work O	r <b>ders:</b> 62091	9		Project ID	: 11194153						
Lab Batch	#: 3085717	Sample: 620919-009 / SMP	Batch	n: 1 Matrix	: Soil						
Units:	mg/kg	Date Analyzed: 04.14.2019 22:30	SURROGATE RECOVERY STUDY								
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
1,4-Difluor	obenzene		0.0275	0.0300	92	70-130					
4-Bromoflu	iorobenzene		0.0364	0.0300	121	70-130					
Lab Batch	#: 3085717	Sample: 620919-010 / SMP	Batch	n: 1 Matrix	: Soil						
Units:	mg/kg	Date Analyzed: 04.14.2019 22:49	SU	RROGATE R	RECOVERY	STUDY					
	ВТЕХ	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluor	obenzene	·	0.0298	0.0300	99	70-130					
4-Bromoflu	iorobenzene		0.0410	0.0300	137	70-130	**				
Lab Batch	#: 3085717	Sample: 620919-011 / SMP	Batch	n: <sup>1</sup> Matrix	: Soil	<u>                                     </u>					
Units:	mg/kg	Date Analyzed: 04.15.2019 00:04	SU	RROGATE R	RECOVERY	STUDY					
	втех	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
1,4-Difluor	obenzene		0.0293	0.0300	98	70-130					
4-Bromoflu	ıorobenzene		0.0432	0.0300	144	70-130	**				
Lab Batch	#: 3085717	Sample: 620919-012 / SMP	Batch	n: <sup>1</sup> Matrix	: Soil						
Units:	mg/kg	Date Analyzed: 04.15.2019 00:23	SURROGATE RECOVERY STUDY								
	ВТЕХ	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluor	obenzene		0.0286	0.0300	95	70-130					
4-Bromoflu	orobenzene		0.0441	0.0300	147	70-130	**				
Lah Datah	#: 3085693	Sample: 7675747-1-BLK / BI	K Batch	n: 1 Matrix	: Solid	<u>.                                     </u>					
Lad Batch		Date Analyzed: 04 13 2019 08:48	ST	RROGATE R	RECOVERY	STUDY					
Lab Batch Units:	mg/kg	Date Analyzeu. 04.13.2019 00.40	50								
Lab Batch Units:	mg/kg TPH	I by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
o-Terpheny	mg/kg TPH	I by Texas1005 Analytes	Amount Found [A] 52.8	True Amount [B] 50.0	Recovery           %R           [D]           106	Control Limits %R	Flags				

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries Project Name: Concho SRO 65

Work Order	<b>s:</b> 620919			Project ID	: 11194153							
Lab Batch #: 3	085717	Sample: 7675773-1-BLK / H	3LK Batch	n: 1 Matrix	: Solid							
Units: m	ng/kg	Date Analyzed: 04.14.2019 19:40	SURROGATE RECOVERY STUDY									
	BTEX	by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1,4-Difluorobenze	ene		0.0312	0.0300	104	70-130						
4-Bromofluorobe	enzene		0.0315	0.0300	105	70-130						
Lab Batch #: 3	085693	Sample: 7675747-1-BKS / E	KS Batch	n: 1 Matrix	: Solid	<u>,                                    </u>						
Units: n	ng/kg	Date Analyzed: 04.13.2019 09:04	SU	SURROGATE RECOVERY STUDY								
	ТРН	by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
o-Terphenyl			48.7	50.0	97	70-130						
1-Chlorooctane			103	100	103	70-130						
Lab Batch #: 3	085717	Sample: 7675773-1-BKS / E	KS Batch	h: <sup>1</sup> Matrix	: Solid	<u>                                     </u>						
Units: n	ng/kg	Date Analyzed: 04.14.2019 18:06	SU	RROGATE R	ECOVERY !	STUDY						
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	1	Analytes			[D]							
1,4-Difluorobenze	ene		0.0289	0.0300	96	70-130						
4-Bromofluorobe	enzene		0.0318	0.0300	106	70-130						
Lab Batch #: 3	085693	Sample: 7675747-1-BSD / F	SD Batch	1: 1 Matrix	: Solid							
	ag/kg	Date Analyzed: 04.13.2019 09:32	OTT		ECOVERY	STUDY						
Units: n	ig/kg		<b>SU</b> .	RROGATE R								
Units: m	ТРН	by Texas1005	Amount Found [A]	RROGATE R True Amount [B]	Recovery %R	Control Limits %R	Flags					
Units: n	TPH	by Texas1005 Analytes	Amount Found [A]	RROGATE R True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
o-Terphenyl	TPH	by Texas1005 Analytes	Amount Found [A] 50.5	RROGATE R True Amount [B] 50.0	<b>Recovery</b> %R [D] 101	Control Limits %R	Flags					
Units: n o-Terphenyl 1-Chlorooctane	трн	by Texas1005 Analytes	<b>Amount</b> <b>Found</b> [A] 50.5 114	RROGATE R True Amount [B] 50.0 100	Recovery %R           [D]           101           114	Control Limits %R 70-130 70-130	Flags					
o-Terphenyl 1-Chlorooctane Lab Batch #: 3	<b>TPH</b> 2 085717	by Texas1005 Analytes Sample: 7675773-1-BSD / E	Amount Found [A] 50.5 114 SD Batch	RROGATE R True Amount [B] 50.0 100 n: 1 Matrix	Recovery %R           [D]           101           114           : Solid	Control Limits %R 70-130 70-130	Flags					
o-Terphenyl 1-Chlorooctane Lab Batch #: 3 Units: m	<b>TPH</b> 2 085717 ng/kg	by Texas1005 Analytes Sample: 7675773-1-BSD / E Date Analyzed: 04.14.2019 18:25	Amount Found [A] 50.5 114 3SD Batch SU	RROGATE R True Amount [B] 50.0 100 1: 1 Matrix RROGATE R	Recovery %R           [D]           101           114           : Solid           ECOVERY S	Control Limits %R 70-130 70-130 STUDY	Flags					
o-Terphenyl 1-Chlorooctane Lab Batch #: 3 Units: m	TPH 2 085717 ng/kg BTEX	by Texas1005 Analytes Sample: 7675773-1-BSD / E Date Analyzed: 04.14.2019 18:25 by EPA 8021B Analytes	Amount Found [A] 50.5 114 BSD Batch SU Amount Found [A]	RROGATE R True Amount [B] 50.0 100 1: 1 Matrix RROGATE R True Amount [B]	Recovery %R [D] 101 114 : Solid ECOVERY S Recovery %R [D]	Control Limits %R 70-130 70-130 STUDY Control Limits %R	Flags					
o-Terphenyl 1-Chlorooctane Lab Batch #: 3 Units: m 1,4-Difluorobenza	TPH 2 085717 ng/kg BTEX ene	by Texas1005 Analytes Sample: 7675773-1-BSD / E Date Analyzed: 04.14.2019 18:25 by EPA 8021B Analytes	Amount Found [A] 50.5 114 BSD Batch SU Amount Found [A] 0.0289	RROGATE R True Amount [B] 50.0 100 1: 1 Matrix RROGATE R True Amount [B] 0.0300	Recovery %R           [D]           101           114           : Solid           ECOVERY S           %R           [D]           96	Control Limits %R 70-130 70-130 STUDY Control Limits %R 70-130	Flags					

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / BAll results are based on MDL and validated for QC purposes.



Work Orders	: 62091	9		Project ID:	11194153						
Lab Batch #: 30	85693	Sample: 620919-001 S / MS	S Batel	n: 1 Matrix:	Soil						
Units: mg	g/kg	Date Analyzed: 04.13.2019 10:04	SURROGATE RECOVERY STUDY								
	TPH	by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
o-Terphenyl			51.2	50.0	102	70-130					
1-Chlorooctane			99.8	99.9	100	70-130					
Lab Batch #: 30	85717	Sample: 620919-001 S / MS	S Batcl	n: 1 Matrix:	Soil						
Units: mg	g/kg	Date Analyzed: 04.14.2019 18:44	SU	RROGATE RI	ECOVERY S	STUDY					
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]		I				
1,4-Difluorobenzer	ne		0.0260	0.0300	87	70-130	·				
4-Bromofluoroben:	zene		0.0368	0.0300	123	70-130					
Lab Batch #: 30	85693	Sample: 620919-001 SD / N	MSD Batch: 1 Matrix: Soil								
Units: mg	g/kg	Date Analyzed: 04.13.2019 10:19	SURROGATE RECOVERY STUDY								
	TPH	by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes	[]	[2]	[D]	, • • • •	I				
o-Terphenyl			51.0	49.9	102	70-130					
1-Chlorooctane			106	99.7	106	70-130					
Lab Batch #: 30	85717	Sample: 620919-001 SD / N	ASD Batcl	n: 1 Matrix:	Soil	<u>                                     </u>					
Units: mg	g/kg	Date Analyzed: 04.14.2019 19:03	SU	RROGATE RI	ECOVERY S	STUDY					
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]		1				
1.4-Difluorobenzer	ne		0.0263	0.0300	88	70-130					

- \*\* Surrogates outside limits; data and surrogates confirmed by reanalysis
- \*\*\* Poor recoveries due to dilution

4-Bromofluorobenzene

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

0.0383

0.0300

128

70-130



## **BS / BSD Recoveries**

### Project Name: Concho SRO 65

Work Order	#: 620919							Proj	ject ID:	11194153				
Analyst:	SCM	<b>Date Prepared:</b> 04.14.2019					<b>Date Analyzed:</b> 04.14.2019							
Lab Batch ID:	<b>3085717 Sample:</b> 7675773-1	BKS	Batc	<b>h #:</b> 1					Matrix: S	Solid				
Units:	mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
	BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Analy	tes		[B]	[C]	[D]	[E]	Result [F]	[G]						
Benzene		<0.00198	0.0992	0.100	101	0.0998	0.0939	94	6	70-130	35			
Toluene		<0.00198	0.0992	0.0996	100	0.0998	0.0951	95	5	70-130	35			
Ethylbenze	ene	<0.00198	0.0992	0.105	106	0.0998	0.0997	100	5	70-130	35			
m,p-Xylen	es	< 0.00101	0.198	0.210	106	0.200	0.201	101	4	70-130	35			
o-Xylene		< 0.00198	0.0992	0.105	106	0.0998	0.102	102	3	70-130	35			
Analyst:	CHE	Da	ate Prepar	ed: 04.12.201	9	<b>Date Analyzed:</b> 04.12.2019								
Lab Batch ID:	<b>3085634 Sample:</b> 7675687-1	BKS	Batc	<b>h #:</b> 1		Matrix: Solid								
Units:	mg/kg		BLAN	K /BLANK	SPIKE / 2	BLANK	SPIKE DUP	LICATE	RECOV	ERY STU	DY			
	Chloride by EPA 300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Analy	tes		[R]	[C]	[D]	[E]	Result [F]	[G]						
Chloride		<5.00	250	259	104	250	258	103	0	90-110	20			

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



## **BS / BSD Recoveries**

### Project Name: Concho SRO 65

Work Order	#: 620919								Pro	ect ID:	11194153		
Analyst:	ARM	<b>Date Prepared:</b> 04.13.2019				.9	<b>Date Analyzed:</b> 04.13.2019						
Lab Batch ID: 3085693 Sample: 7675747-1-			-BKS	Batc	<b>h #:</b> 1					Matrix: S	c: Solid		
Units:	its: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
	TPH by Texas1005		Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analy	tes			[ <b>B</b> ]	[C]	[D]	[E]	Result [F]	[G]				
C6-C12 R	ange Hydrocarbons		<25.0	1000	994	99	1000	1050	105	5	75-125	20	
C12-C28 I	Range Hydrocarbons		<8.13	1000	1110	111	1000	1200	120	8	75-125	20	

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


### Form 3 - MS / MSD Recoveries

#### **Project Name: Concho SRO 65**

<b>Work Order # :</b> 620919						Project II	<b>D:</b> 11194	153			
Lab Batch ID: 3085717	QC- Sample ID:	620919	-001 S	Ba	tch #:	1 Matri	x: Soil				
<b>Date Analyzed:</b> 04.14.2019	Date Prepared:	04.14.2	019	Ar	nalyst: S	SCM					
<b>Reporting Units:</b> mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SP	IKE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[-]	[D]	[E]	[-]	[G]		,		
Benzene	<0.00199	0.0996	0.0550	55	0.0998	0.0570	57	4	70-130	35	X
Toluene	< 0.00199	0.0996	0.0675	68	0.0998	0.0710	71	5	70-130	35	X
Ethylbenzene	< 0.00199	0.0996	0.0663	67	0.0998	0.0699	70	5	70-130	35	X
m,p-Xylenes	0.00273	0.199	0.141	69	0.200	0.149	73	6	70-130	35	X
o-Xylene	< 0.00199	0.0996	0.0722	72	0.0998	0.0772	77	7	70-130	35	
Lab Batch ID: 3085634	QC- Sample ID:	620919	-001 S	Ba	tch #:	1 Matri	x: Soil				
<b>Date Analyzed:</b> 04.13.2019	Date Prepared:	04.12.2	019	Ar	nalyst: (	CHE					
<b>Reporting Units:</b> mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SP	IKE DUPLICA	TE REC	OVERY	STUDY		
Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Kesult [F]	%R [G]	%	%K	%RPD	
Chloride	17.3	249	291	110	249	277	104	5	90-110	20	
Lab Batch ID: 3085634	QC- Sample ID:	620919	-011 S	Ba	tch #:	1 Matri	x: Soil				
<b>Date Analyzed:</b> 04.13.2019	Date Prepared:	04.12.2	019	Ar	nalyst: (	CHE					
<b>Reporting Units:</b> mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SP	IKE DUPLICA	TE REC	OVERY	STUDY		
Chloride by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Chloride	10.0	251	282	108	251	281	108	0	90-110	20	

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}|(C-F)/(C+F)|$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

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



### Form 3 - MS / MSD Recoveries

#### **Project Name: Concho SRO 65**

Work Order # :	620919	<b>Project ID:</b> 11194153											
Lab Batch ID:	3085693 Q	C- Sample ID:	620919	-001 S	Ba	tch #:	1 Matrix	x: Soil					
Date Analyzed:	04.13.2019	Date Prepared:	04.13.2	019	An	alyst: A	ARM						
<b>Reporting Units:</b>	mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
	TPH by Texas1005	Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag	
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD		
C6-C12 Range H	Iydrocarbons	<25.0	999	875	88	997	899	90	3	75-125	20		
C12-C28 Range	Hydrocarbons	<25.0	999	967	97	997	958	96	1	75-125	20		

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery  $[G] = 100^{*}(F-A)/E$ 

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No. Field ID / Point of Collection	Sample	Date	Time	Matrix	# of	5	aOH/Zn cetate	NO3	2SO4	aOH	aHSO4	HOH	) N	<i>K</i> 1	F	Ű												
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4 5563-1			1440												$\uparrow$	+		+										19 0
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6 SP2-3'	3'		1.140										$\square$	1+	11	+												Ċ.
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8 SP4-31	3'		1310											11														
9 SPS-3'	3'		1245											1	1													
10 SPG - 1'	1'	V	1430	V	V							1	VN	5	V	1		1										
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Same Day TAT 5 Day TAT			Lev	/el II Sto	I QC				Leve	VI IV	(Full C	ata P	'kg /ra	aw da	ta)													
Next Day EMERGENCY 24 N 7 Day TAT			Lev	/el III St	d QC+ F	orms			TRR	P Le	vel IV																	
2 Day EMERGENCY     Contract TAT			Lev	vel 3 (Cl	LP Form	IS)			UST	/ RG	<del>)</del> -411																	
3 Day EMERGENCY			Lev	el II Rej	oort with	n TRRP	o check	dist																,				
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or expenses incurred by the Client is used to be constructed a value purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost/of samples and shall not assure any responsibility for any losses or expenses incurred by the Client is such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples received by Xenco but hot analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



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Email: QAREIQ CONCHS. EDM I + CV C RZ Q CONCHOLON Project Contact: D Kabo Ales I	Phone No: <u>tom larsen</u> Tom larsen	Ø Gnd,	Invoice To:											8		ides									P = SV SL O\ W	= Product V = Surfac . = Sludge V =Oceani I = Wine	e wate /Sea W	⊧r /ater
Samplers's Name alenn Qun	0-14	<u> </u>	PO Number:	:										5		2									0	= Oil		
	)		Collectior	n				Numbr	er of r	resen	ved bo	ottles		2	Z	2									W\ A	N= Waste = Air	Water	
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Same Day TAT	5 Day TAT					00	<u> </u>	Г	<u> </u>							·		N	otes:				···· ,					
	7 Day TAT			Lev	el III Std		orms	L		TRRP	Level	II Data	Pkg /r	aw da	ata)										<u> </u>			
2 Day EMERGENCY	Contract TAT			Lev	el 3 (CL	P Form	s)	Γ		UST /	RG -4	11															-7.11.1	-
3 Day EMERGENCY				Levi	el II Rep	ort with	TRRF	, checkl	ist															<u></u>				••••
TAT Starts Day received by Lab	, if received by 5:0	0 pm													·,			ED.E	(/1105	Traci	vina #							
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Notice: Signature of this document and relinguishment	of complex constitutes a	1		5																1	$\langle   \rangle$		(	ノヒ	10.			

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the Coer of samples and shall not assume any responsibility for any losses enforced unless previously negotiated under a fully executed client contract.

### **XENCO** Laboratories

#### Prelogin/Nonconformance Report- Sample Log-In

Client: Concho Resources Inc. Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 04.12.2019 10.10.00 AM Temperature Measuring device used : R8 Work Order #: 620919 Comments Sample Receipt Checklist .2 #1 \*Temperature of cooler(s)? #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 N/A #6\*Custody Seals Signed and dated? #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 tph and btex in bulk container #13 Samples properly preserved? Yes #14 Sample container(s) intact? Yes #15 Sufficient sample amount for indicated test(s)? Yes #16 All samples received within hold time? Yes #17 Subcontract of sample(s)? N/A #18 Water VOC samples have zero headspace? N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Checklist reviewed by: Debbie Serimon

Debbie Simmons

Date: 04.12.2019

Date: 04.12.2019

Page 21 of 21

**Final 1.000** 



 Project Id:
 11194153

 Contact:
 Dakota Neel

**Project Location:** 

Certificate of Analysis Summary 621515

COG Operating LLC, Artesia, NM Project Name: Concho SRO 65



Date Received in Lab:Thu Apr-18-19 08:25 amReport Date:23-APR-19Project Manager:Kalei Stout

	Lab Id:	621515-0	001	621515-0	002	621515-0	)03		
Analysis Paguested	Field Id:	SP 3-6		SP 6-2	!'	SP 1-9	)'		
Analysis Kequesiea	Depth:	6- ft		2- ft		9- ft			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Apr-17-19 (	00:00	Apr-17-19	00:00	Apr-17-19	00:00		
BTEX by EPA 8021B	Extracted:	Apr-18-19	08:30	Apr-18-19	08:30	Apr-18-19 (	08:30		
	Analyzed:	Apr-18-19	14:32	Apr-18-19	14:51	Apr-18-19	15:10		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00202	0.00202	< 0.00201	0.00201	< 0.00200	0.00200		
Toluene		< 0.00202	0.00202	< 0.00201	0.00201	< 0.00200	0.00200		
Ethylbenzene		< 0.00202	0.00202	< 0.00201	0.00201	< 0.00200	0.00200		
m,p-Xylenes		< 0.00403	0.00403	< 0.00402	0.00402	< 0.00400	0.00400		
o-Xylene		< 0.00202	0.00202	< 0.00201	0.00201	< 0.00200	0.00200		
Total Xylenes		< 0.00202	0.00202	< 0.00201	0.00201	< 0.00200	0.00200		
Total BTEX		< 0.00202	0.00202	< 0.00201	0.00201	< 0.00200	0.00200		
Chloride by EPA 300	Extracted:	Apr-18-19	15:00	Apr-18-19	15:00	Apr-18-19	15:00		
	Analyzed:	Apr-18-19	18:12	Apr-18-19	15:55	Apr-18-19	18:18		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		450	24.8	< 5.00	5.00	230	50.4		
TPH By SW8015 Mod	Extracted:	Apr-19-19	13:00	Apr-19-19	13:00	Apr-19-19	13:00		
	Analyzed:	** ** **	**	Apr-19-19	13:18	Apr-19-19	13:38		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0		
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0		

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 - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Kalei Stout Midland Laboratory Director

# Analytical Report 621515

for COG Operating LLC

Project Manager: Dakota Neel

**Concho SRO 65** 

11194153

23-APR-19

Collected By: Client





1211 W. Florida Ave Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429), North Carolina (483) Xenco-Lakeland: Florida (E84098)



23-APR-19

ALLY ACCREDIES

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

Reference: XENCO Report No(s): 621515 Concho SRO 65 Project Address:

#### Dakota Neel:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 621515. 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. 621515 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,

Kalei Stout Midland Laboratory Director

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



# Sample Cross Reference 621515



### COG Operating LLC, Artesia, NM

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP 3-6'	S	04-17-19 00:00	6 ft	621515-001
SP 6-2'	S	04-17-19 00:00	2 ft	621515-002
SP 1-9'	S	04-17-19 00:00	9 ft	621515-003



### CASE NARRATIVE

Client Name: COG Operating LLC Project Name: Concho SRO 65

 Project ID:
 11194153

 Work Order Number(s):
 621515

Report Date: 23-APR-19 Date Received: 04/18/2019

#### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3086240 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.





### COG Operating LLC, Artesia, NM

Sample Id:	SP 3-6'		Matrix:	Soil		Date Received	:04.18.1	19 08.25	
Lab Sample Id	d: 621515-001		Date Colle	cted: 04.17.19 00.00		Sample Depth	:6 ft		
Analytical Me	ethod: Chloride by EPA	300				Prep Method:	E300P		
Tech:	SPC					% Moisture:			
Analyst:	SPC		Date Prep:	04.18.19 15.00		Basis:	Wet W	eight	
Seq Number:	3086261								
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate I	lag	Dil
Chloride		16887-00-6	450	24.8	mg/kg	04.18.19 18.	12		5

Analytical Method: TPH By SW80	15 Mod				P	Prep Method: TX	1005P	
Tech: ARM					9	6 Moisture:		
Analyst: ARM		Date Pre	p: 04.19	.19 13.00	E	Basis: We	t Weight	
Seq Number: 3086484								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.19.19 12.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.19.19 12.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.19.19 12.19	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.19.19 12.19	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	98	%	70-135	04.19.19 12.19		
o-Terphenyl		84-15-1	96	%	70-135	04.19.19 12.19		





## COG Operating LLC, Artesia, NM

Sample Id:	SP 3-6'	Matrix:	Soil	Date Received	:04.18.19 08.25
Lab Sample Id	: 621515-001	Date Collected	: 04.17.19 00.00	Sample Depth:	: 6 ft
Analytical Mer Tech: Analyst: Seq Number:	thod: BTEX by EPA 8021B SCM SCM 3086240	Date Prep:	04.18.19 08.30	Prep Method: % Moisture: Basis:	SW5030B Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	04.18.19 14.32	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	04.18.19 14.32	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	04.18.19 14.32	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	04.18.19 14.32	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	04.18.19 14.32	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	04.18.19 14.32	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	04.18.19 14.32	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	93	%	70-130	04.18.19 14.32		
1,4-Difluorobenzene		540-36-3	97	%	70-130	04.18.19 14.32		





## COG Operating LLC, Artesia, NM

Sample Id:	SP 6-2'		Matrix:	Soil		Date Received	1:04.18.19 08.25	
Lab Sample Id	: 621515-002		Date Collecte	d: 04.17.19 00.00		Sample Depth	:2 ft	
Analytical Me	thod: Chloride by EPA 30	00				Prep Method:	E300P	
Tech:	SPC					% Moisture:		
Analyst:	SPC		Date Prep:	04.18.19 15.00		Basis:	Wet Weight	
Seq Number:	3086261							
Parameter		Cas Number	Result F	RL	Units	Analysis Da	ate Flag	Dil

I di dificter	Cas Humber	Result	KL	Omts	Analysis Date	Flag	Dii
Chloride	16887-00-6	< 5.00	5.00	mg/kg	04.18.19 15.55	U	1

Analytical Method: TPH By SW801	5 Mod				P	rep Method: TX	1005P	
Tech: ARM					9	Moisture:		
Analyst: ARM		Date Pre	p: 04.19	0.19 13.00	E	asis: We	t Weight	
Seq Number: 3086484								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.19.19 13.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.19.19 13.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.19.19 13.18	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.19.19 13.18	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	99	%	70-135	04.19.19 13.18		
o-Terphenyl		84-15-1	99	%	70-135	04.19.19 13.18		





## COG Operating LLC, Artesia, NM

Sample Id:	SP 6-2'	Matrix:	Soil	Date Received	:04.18.19 08.25			
Lab Sample Id	: 621515-002	Date Collected	:04.17.19 00.00	Sample Depth: 2 ft				
Analytical Met Tech: Analyst: Seq Number:	thod: BTEX by EPA 8021B SCM SCM 3086240	Date Prep:	04.18.19 08.30	Prep Method: % Moisture: Basis:	SW5030B Wet Weight			

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	04.18.19 14.51	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	04.18.19 14.51	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	04.18.19 14.51	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	04.18.19 14.51	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	04.18.19 14.51	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	04.18.19 14.51	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	04.18.19 14.51	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	98	%	70-130	04.18.19 14.51		
4-Bromofluorobenzene		460-00-4	91	%	70-130	04.18.19 14.51		





### COG Operating LLC, Artesia, NM

Sample Id:	SP 1-9'		Matrix:	Soil		Date Received	1:04.18.1	9 08.25	
Lab Sample Io	d: 621515-003		Date Colle	cted: 04.17.19 00.00		Sample Depth	:9 ft		
Analytical Me	ethod: Chloride by EPA	300				Prep Method:	E300P		
Tech:	SPC					% Moisture:			
Analyst:	SPC		Date Prep:	04.18.19 15.00		Basis:	Wet We	eight	
Seq Number:	3086261								
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate F	lag	Dil
Chloride		16887-00-6	230	50.4	mg/kg	04.18.19 18	.18		10

Analytical Method: TPH By SW80	15 Mod				P	rep Method: TX	1005P	
Tech: ARM					9	6 Moisture:		
Analyst: ARM		Date Pre	p: 04.19	.19 13.00	E	Basis: We	t Weight	
Seq Number: 3086484								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	04.19.19 13.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	04.19.19 13.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	04.19.19 13.38	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	04.19.19 13.38	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	97	%	70-135	04.19.19 13.38		
o-Terphenyl		84-15-1	97	%	70-135	04.19.19 13.38		





## COG Operating LLC, Artesia, NM

Sample Id:	SP 1-9'	Matrix:	Soil	Date Received	:04.18.19 08.25			
Lab Sample Id	: 621515-003	Date Collected	:04.17.19 00.00	Sample Depth: 9 ft				
Analytical Me Tech: Analyst: Seq Number:	thod: BTEX by EPA 8021B SCM SCM 3086240	Date Prep:	04.18.19 08.30	Prep Method: % Moisture: Basis:	SW5030B Wet Weight			

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	04.18.19 15.10	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	04.18.19 15.10	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	04.18.19 15.10	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	04.18.19 15.10	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	04.18.19 15.10	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	04.18.19 15.10	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	04.18.19 15.10	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	101	%	70-130	04.18.19 15.10		
4-Bromofluorobenzene		460-00-4	98	%	70-130	04.18.19 15.10		



# **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 LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	nt Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Laboration	atory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



### QC Summary 621515

## COG Operating LLC

Concho SRO 65

Analytical Method:	Chloride by EPA 30	0						Pi	rep Metho	od: E30	0P	
Seq Number:	3086261			Matrix:	Solid				Date Pre	ep: 04.1	8.19	
MB Sample Id:	7676091-1-BLK		LCS Sar	nple Id:	7676091-	1-BKS		LCS	D Sample	Id: 767	6091-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag
Chloride	< 5.00	250	242	97	241	96	90-110	0	20	mg/kg	04.18.19 15:42	

Analytical Method:	Chloride by	EPA 30	0						P	rep Meth	od: E30	0P	
Seq Number:	3086261				Matrix:	Soil				Date Pr	ep: 04.1	8.19	
Parent Sample Id:	621482-023			MS San	nple Id:	621482-02	23 S		MS	D Sample	e Id: 621	482-023 SD	
Parameter	1	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride		47.5	249	299	101	302	102	90-110	1	20	mg/kg	04.18.19 19:23	

Analytical Method:	Chloride by EPA 30	0						Pi	rep Meth	od: E3	00P	
Seq Number:	3086261			Matrix:	Soil				Date Pr	ep: 04.	18.19	
Parent Sample Id:	621515-002		MS Sar	nple Id:	621515-00	02 S		MS	D Sample	e Id: 62	1515-002 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	4.14	250	257	101	254	100	90-110	1	20	mg/kg	04.18.19 17:52	

Analytical Method: Seq Number: MB Sample Id:	al Method:         TPH By SW8015 Mod           aber:         3086484           ple Id:         7676238-1-BLK					Solid 7676238-	Prep Method: TX1005P Date Prep: 04.19.19 S LCSD Sample Id: 7676238-1-BSD						
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ns (GRO)	<8.00	1000	1010	101	1050	105	70-135	4	20	mg/kg	04.19.19 11:40	
Diesel Range Organics (I	DRO)	<8.13	1000	1070	107	1090	109	70-135	2	20	mg/kg	04.19.19 11:40	
Surrogate		MB %Rec	MB Flag	L %	CS Rec	LCS Flag	LCSI %Ree	) LCSI c Flag	D I g	Limits	Units	Analysis Date	
1-Chlorooctane		99		1	27		129		7	0-135	%	04.19.19 11:40	
o-Terphenyl		101		1	22		127		7	0-135	%	04.19.19 11:40	

[D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec



#### **QC Summary** 621515

### **COG Operating LLC**

Concho SRO 65

Analytical Method:	TPH By SW8015 Mod
--------------------	-------------------

Analytical Method:	TPH By SW	78015 M	od						F	rep Method	I: TX	1005P	
Seq Number:	3086484			]	Matrix:	Soil				Date Prep	o: 04.1	9.19	
Parent Sample Id:	621515-001			MS San	nple Id:	621515-00	01 S		MS	D Sample l	d: 621	515-001 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbo	ns (GRO)	<7.99	999	883	88	888	89	70-135	1	20	mg/kg	04.19.19 12:39	
Diesel Range Organics (I	DRO)	<8.12	999	905	91	917	92	70-135	1	20	mg/kg	04.19.19 12:39	
Surrogate				N %1	IS Rec	MS Flag	MSD %Re	o MSD c Flag		limits	Units	Analysis Date	
1-Chlorooctane				1	19		119		7	0-135	%	04.19.19 12:39	
o-Terphenyl				1	11		113		7	0-135	%	04.19.19 12:39	

Analytical Method:	BTEX by EPA 8021				I	Prep Metho	d: SW	5030B				
Seq Number:	3086240			Matrix:	Solid				Date Pre	p: 04.1	8.19	
MB Sample Id:	7676126-1-BLK		LCS Sar	nple Id:	7676126-	1-BKS		LCS	SD Sample	Id: 767	6126-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.000383	0.0996	0.0921	92	0.0920	92	70-130	0	35	mg/kg	04.18.19 12:40	
Toluene	< 0.000454	0.0996	0.0926	93	0.0922	92	70-130	0	35	mg/kg	04.18.19 12:40	
Ethylbenzene	< 0.000563	0.0996	0.0858	86	0.0853	85	70-130	1	35	mg/kg	04.18.19 12:40	
m,p-Xylenes	< 0.00101	0.199	0.170	85	0.169	85	70-130	1	35	mg/kg	04.18.19 12:40	
o-Xylene	< 0.000343	0.0996	0.0861	86	0.0856	86	70-130	1	35	mg/kg	04.18.19 12:40	
Surrogate	MB %Rec	MB Flag	L %	CS Rec	LCS Flag	LCSD %Rec	LCSI Flag		Limits	Units	Analysis Date	
1,4-Difluorobenzene	91		1	01		100		7	70-130	%	04.18.19 12:40	
4-Bromofluorobenzene	87		ç	96		94		7	70-130	%	04.18.19 12:40	

<b>Analytical Method:</b> Seq Number: Parent Sample Id:	<b>BTEX by EPA 8021</b> 3086240 621515-001	Matrix: Soil MS Sample Id: 621515-001 S				Prep Method: SW5030B Date Prep: 04.18.19 MSD Sample Id: 621515-001 SD						
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.000383	0.0994	0.0786	79	0.0841	83	70-130	7	35	mg/kg	04.18.19 13:18	
Toluene	< 0.000453	0.0994	0.0781	79	0.0839	83	70-130	7	35	mg/kg	04.18.19 13:18	
Ethylbenzene	< 0.000561	0.0994	0.0715	72	0.0774	77	70-130	8	35	mg/kg	04.18.19 13:18	
m,p-Xylenes	< 0.00101	0.199	0.141	71	0.153	76	70-130	8	35	mg/kg	04.18.19 13:18	
o-Xylene	0.000393	0.0994	0.0712	71	0.0773	76	70-130	8	35	mg/kg	04.18.19 13:18	
Surrogate			M %I	IS Rec	MS Flag	MSD %Rec	MSE Flag	) I ;	Limits	Units	Analysis Date	
1,4-Difluorobenzene			10	)1		100		7	0-130	%	04.18.19 13:18	
4-Bromofluorobenzene			9	5		97		7	0-130	%	04.18.19 13:18	

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

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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



# CHAIN OF CUSTODY

Page 1 Of 1

Setting the Standard since 1990

Stafford, Texas (281-240-4200)														Ode	essa, T	exas (	432-56	3-180	))			Lakel	and, Floi	rida (8	863-646-8526)	
Dallas Texas (214-902-0300)														Nor	cross,	Georg	jia (77	0-44 <del>9</del> -i	8800)			Tamp	a, Florid	a (813	3-620-2000)	
Service Center - San Antonio, Texas (21	0-509-3334)				3	vww.xei	nco.c	om						Xend	o Quote	,#			Xe	nco Job	# (	$\mathcal{V}_{a}$	45	15	•	
																Ar	alytica	Inform	nation				1	·	Matrix Codes	
Client / Reporting Information				Proj	ect Infor	mation															T					
rompany Name / Branch:		Pi	roject Name	/Number:	1	1194153								-												
iompany Address:		0	roject Loca	10 65 tion:																a a da da como de acordo de ac					S = Soil/Sed/Solid GW =Ground Water DW = Drinking Water	
mail: <u>dneel@concho.com</u> i <u>tavarez@concho.com</u> om.larson@craworld.com	Phone No: 432-215-278 432-701-8630 432-686-0086	83 In	voice To:							·						Å									SW = Surface water SL = Sludge OW =Ocean/Sea Wat	er   Ling
roject Contact: Tom Larson Dakota Neel	lke Tavarez								L							20									W = Wipe	
amplers's Name Glenn Quinney			O Number:				,									14									O = Oil	
		L (	Collection					Numt	per of	prese	erved	botti	es	51	5	315									ww= waste water A = Air	
No. Field ID / Point of Collect	ction S	Sample Depth	Date	Time	Matrix	# of	Ę	laOH/Zn cetate	INO3	12SO4	laOH	laHS04	1EOH	BTEX 80	Chloride	rph &							N	Μ	Project	
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2 SP 6 - 2'			4/17/2019		s	1			$\left  - \right $				-		x	X					-				<u></u>	
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Turnaround Time (Business days)		<u></u>			1	Data Deli	verable	e Inform	ation			666						N	otes:							
Same Day TAT	5 Day TAT			Le	vel II Std	QC				Lev	el IV (	Full I	Data Pl	g /raw	data)						•	-				
Next Day EMERGENCY	7 Day TAT			Le	vel III Ste	I QC+ F	orms			TRF	RP Lev	vel IV													·.	
X 2 Day EMERGENCY	Contract TAT			Lev	vel 3 (CL	P Form	s)			) บรา	r / RG	-411														
3 Day EMERGENCY					RP Che	:klist																				
TAT Starts Day received by Lab,	if received by 5:00 p	m											• • • • • • • • • • • • • • • • • • • •					FED-EX	( / UPS	: Track	king #	~			n. ,	
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otice: Signature of this document and relinquishment o	f samples constitutes a valid p	purchase or	der from clie	nt company	o XENCO	Laborato	ories ar	nd its affi	liates,	subcor	ntracto	rs and	assigns	XENCO	)'s stand	ard tern	s and co	onditions	of serv	ice unles	ss previo	1 Jusly nec	iotiated une	der a fu	the executed client contract	



### **XENCO Laboratories** Prelogin/Nonconformance Report- Sample Log-In



Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 04/18/2019 08:25:00 AM

Work Order #: 621515

Client: COG Operating LLC

Temperature Measuring device used : R8

Sample Receipt Che	cklist 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?	Νο
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Brianna Teel

Date: 04/18/2019

Checklist reviewed by: Kalei Stout

Date: 04/19/2019



Project Id:11924153Contact:Tom LarsonProject Location:New Mexico

### Certificate of Analysis Summary 623388

COG Operating LLC, Artesia, NM Project Name: SRO State Comm #65



Date Received in Lab:Tue May-07-19 09:35 amReport Date:10-MAY-19Project Manager:Jessica Kramer

$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$														
Analysis Requested       Field Id:       SSW-1       NSW-1       ESW-1       WSW-1       SP 4.3       SP 7.1         Analysis Requested       Matrix:       SOIL       SOIL       SOIL       SOIL       3. ft       1. ft         Matrix:       SOIL       SOIL       SOIL       SOIL       SOIL       SOIL       May-06-19 14:10       May-06-19 14:10       May-06-19 14:10       May-06-19 14:10       May-06-19 14:10       May-06-19 14:10       May-07-19 10:00       May-07-19 10:00       May-07-19 14:10       May-07-19 14:10       May-07-19 14:10       May-07-19 14:30       May-07-19		Lab Id:	623388-0	001	623388-0	02	623388-0	03	623388-0	004	623388-0	005	623388-0	006
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Analysis Paguastad	Field Id:	SSW-1		NSW-1		ESW-1		WSW-	1	SP 4-3		SP 7-1	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Analysis Kequesiea	Depth:									3- ft		1- ft	
Sample:       May-06-19 14:05       May-06-19 14:00       May-06-19 14:15       May-06-19 14:10       May-06-19 14:00       May-07-19 10:00       May-07-1		Matrix:	SOIL	SOIL		SOIL		SOIL		SOIL			SOIL	
TPH By SW8015 Mod         Extracted:         May-07-19 10:00         May-07-19 10:		Sampled:	May-06-19	-06-19 14:05 Ma		14:00	May-06-19	14:15	May-06-19	14:10	May-06-19	14:40	May-06-19	14:35
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	TPH By SW8015 Mod	Extracted:	May-07-19	10:00	May-07-19	10:00	May-07-19	10:00	May-07-19	10:00	May-07-19	10:00	May-07-19	10:00
		Analyzed:	May-07-19	12:51	May-07-19	13:50	May-07-19	14:10	May-07-19	14:30	May-07-19	14:50	May-07-19	15:09
Gasoline Range Hydrocarbons         <15.0		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Diesel Range Organics         <15.0	Gasoline Range Hydrocarbons		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)         <15.0	Diesel Range Organics		<15.0	<15.0 15.0		15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH         <15.0	Motor Oil Range Hydrocarbons (MRO)		<15.0	<15.0 15.0		15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
	Total TPH		<15.0	<15.0 15.0		15.0	<15.0 15.0		<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.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Version: 1.%

fession kenner

Jessica Kramer Project Assistant



Project Id:11924153Contact:Tom LarsonProject Location:New Mexico

### Certificate of Analysis Summary 623388

COG Operating LLC, Artesia, NM Project Name: SRO State Comm #65



Date Received in Lab:Tue May-07-19 09:35 amReport Date:10-MAY-19Project Manager:Jessica Kramer

	Lab Id:	623388-0	07	623388-0	08	623388-0	09		
Analysis Paguastad	Field Id:	SP 5-3		SP 2-3		SP 8-1			
Analysis Kequestea	Depth:	3- ft	3- ft			1- ft			
	Matrix:	SOIL	SOIL		SOIL				
	Sampled:	May-06-19	14:25	May-06-19	14:20	May-06-19 1	4:30		
TPH By SW8015 Mod	Extracted:	May-07-19	10:00	May-07-19	10:00	May-07-19 1	0:00	1	
	Analyzed:	May-07-19	15:29	May-07-19 15:49		May-07-19 16:09			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons		<15.0	15.0	<14.9	14.9	<15.0	15.0		
Diesel Range Organics		<15.0	15.0	<14.9	14.9	<15.0	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0		
Total TPH		<15.0	15.0	<14.9	14.9	<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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Version: 1.%

fession kenner

Jessica Kramer Project Assistant

# Analytical Report 623388

for COG Operating LLC

**Project Manager: Tom Larson** 

SRO State Comm #65

11924153

10-MAY-19

Collected By: Client





1211 W. Florida Ave Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20) Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Atlanta (LELAP Lab ID #04176) Xenco-Tampa: Florida (E87429), North Carolina (483)



10-MAY-19



Project Manager: **Tom Larson COG Operating LLC** 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): **623388 SRO State Comm #65** Project Address: New Mexico

#### Tom Larson:

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) 623388. 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. 623388 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,

Jession Vramer

Jessica Kramer Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



# Sample Cross Reference 623388



### COG Operating LLC, Artesia, NM

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SSW-1	S	05-06-19 14:05		623388-001
NSW-1	S	05-06-19 14:00		623388-002
ESW-1	S	05-06-19 14:15		623388-003
WSW-1	S	05-06-19 14:10		623388-004
SP 4-3	S	05-06-19 14:40	3 ft	623388-005
SP 7-1	S	05-06-19 14:35	1 ft	623388-006
SP 5-3	S	05-06-19 14:25	3 ft	623388-007
SP 2-3	S	05-06-19 14:20	3 ft	623388-008
SP 8-1	S	05-06-19 14:30	1 ft	623388-009



### CASE NARRATIVE

Client Name: COG Operating LLC Project Name: SRO State Comm #65

 Project ID:
 11924153

 Work Order Number(s):
 623388

Report Date:10-MAY-19Date Received:05/07/2019

#### Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None





### COG Operating LLC, Artesia, NM

Sample Id:	SSW-1		Matrix:	Soil		Date Received	1:05.07.19	9 09.35	
Lab Sample Id	l: 623388-001		Date Collecte	1:05.06.19 14.05					
Analytical Me	thod: TPH By SW8015 M	/lod				Prep Method:	TX1005	P	
Tech:	ARM					% Moisture:			
Analyst:	ARM		Date Prep:	05.07.19 10.00		Basis:	Wet We	ight	
Seq Number:	3088339								
Parameter		Cas Number	Result R	L	Units	Analysis Da	ate Fl	ag	Dil

						-			
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	05.07.19 12.51	U	1	
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	05.07.19 12.51	U	1	
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	05.07.19 12.51	U	1	
Total TPH	PHC635	<15.0	15.0		mg/kg	05.07.19 12.51	U	1	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane		111-85-3	114	%	70-135	05.07.19 12.51			
o-Terphenyl		84-15-1	113	%	70-135	05.07.19 12.51			





## COG Operating LLC, Artesia, NM

Sample Id: NSW-1 Lab Sample Id: 623388-002		Matrix: Date Collecte	Soil d: 05.06.19 14.00		Date Received	1:05.07.19 09.	35
Analytical Method: TPH By SW80	15 Mod				Prep Method:	TX1005P	
Tech:ARMAnalyst:ARM		Date Prep:	05.07.19 10.00		% Moisture: Basis:	Wet Weight	
Seq Number: 3088339							
Parameter	Cas Number	Result F	ST.	Units	Analysis D	ate Flag	Dil

1 di dificter	Cus Muniber	Result	KL		Units	Analysis Date	Flag	DI
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	05.07.19 13.50	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	05.07.19 13.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	05.07.19 13.50	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	05.07.19 13.50	U	1
			%					
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	101	%	70-135	05.07.19 13.50		
o-Terphenyl		84-15-1	96	%	70-135	05.07.19 13.50		





### COG Operating LLC, Artesia, NM

Sample Id:	ESW-1		Matrix:	Soil		Date Received	1:05.07.19 09.3	35
Lab Sample Io	1: 623388-003	Date Collected: 05.06.19 14.15						
Analytical Me	ethod: TPH By SW8015 M	Mod				Prep Method:	TX1005P	
Tech:	ARM					% Moisture:		
Analyst:	ARM		Date Prep:	05.07.19 10.00		Basis:	Wet Weight	
Seq Number:	3088339							
Parameter		Cas Number	Result R	L	Units	Analysis D	ate Flag	Dil

i ul ullittel	eus rumber	ittouit	KL		Onits	Analysis Date	Tiag	Dii
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	05.07.19 14.10	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	05.07.19 14.10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	05.07.19 14.10	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	05.07.19 14.10	U	1
			%					
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	98	%	70-135	05.07.19 14.10		
o-Terphenyl		84-15-1	93	%	70-135	05.07.19 14.10		





## COG Operating LLC, Artesia, NM

Sample Id:WSW-1Lab Sample Id:623388-004		Matrix: Date Collecte	Soil d: 05.06.19 14.10	Date R	eceived:05.07.19 09.3	5
Analytical Method: TPH By SW8 Tech: ARM	6015 Mod			Prep M % Mois	ethod: TX1005P sture:	
Analyst: ARM Seq Number: 3088339		Date Prep:	05.07.19 10.00	Basis:	Wet Weight	
Parameter	Cas Number	Result D	T	Unite And	lysis Data Flag	Dil

1 di dificter	Cus Muniber	Result	KL		Units	Analysis Date	Flag	Dii
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	05.07.19 14.30	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	05.07.19 14.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	05.07.19 14.30	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	05.07.19 14.30	U	1
			%					
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	99	%	70-135	05.07.19 14.30		
o-Terphenyl		84-15-1	96	%	70-135	05.07.19 14.30		





### COG Operating LLC, Artesia, NM

Sample Id:	SP 4-3		Matrix:	Soil		Date Received	1:05.07	.19 09.35	
Lab Sample Id	: 623388-005		Date Collected: 05.06.19 14.40			Sample Depth: 3 ft			
Analytical Me	thod: TPH By SW8015 M	Iod				Prep Method:	TX10	05P	
Tech:	ARM					% Moisture:			
Analyst:	ARM		Date Prep:	05.07.19 10.00		Basis:	Wet V	Veight	
Seq Number:	3088339								
Parameter		Cas Number	Result R	L	Units	Analysis Da	ate	Flag	Dil

						-		
PHC610	<15.0	15.0		mg/kg	05.07.19 14.50	U	1	
C10C28DRO	<15.0	15.0		mg/kg	05.07.19 14.50	U	1	
PHCG2835	<15.0	15.0		mg/kg	05.07.19 14.50	U	1	
PHC635	<15.0	15.0		mg/kg	05.07.19 14.50	U	1	
	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
	111-85-3	100	%	70-135	05.07.19 14.50			
	84-15-1	94	%	70-135	05.07.19 14.50			
	PHC610 C10C28DRO PHCG2835 PHC635	PHC610       <15.0	PHC610         <15.0         15.0           C10C28DRO         <15.0	PHC610         <15.0         15.0           C10C28DRO         <15.0	PHC610         <15.0         15.0         mg/kg           C10C28DRO         <15.0	PHC610         <15.0         mg/kg         05.07.19 14.50           C10C28DRO         <15.0	PHC610         <15.0         15.0         mg/kg         05.07.19         14.50         U           C10C28DRO         <15.0	$\begin{array}{c c c c c c c c c c c c c c c c c c c $





### COG Operating LLC, Artesia, NM

Sample Id:	SP 7-1		Matrix:	Soil		Date Received	1:05.07.19 09.	35
Lab Sample Id	: 623388-006		Date Collecte	: 05.06.19 14.35 Sample Depth: 1			:1 ft	
Analytical Me	thod: TPH By SW8015 M	Iod				Prep Method:	TX1005P	
Tech:	ARM					% Moisture:		
Analyst:	ARM		Date Prep:	05.07.19 10.00		Basis:	Wet Weight	
Seq Number:	3088339							
Parameter		Cas Number	Result R	L	Units	Analysis D	ate Flag	Dil

						•	0		
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	05.07.19 15.09	U	1	
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	05.07.19 15.09	U	1	
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	05.07.19 15.09	U	1	
Total TPH	PHC635	<15.0	15.0		mg/kg	05.07.19 15.09	U	1	
Surrogate		Cas Number	% Bocovory	Units	Limits	Analysis Date	Flag		
			Recovery						
1-Chlorooctane		111-85-3	99	%	70-135	05.07.19 15.09			
o-Terphenyl		84-15-1	93	%	70-135	05.07.19 15.09			





### COG Operating LLC, Artesia, NM

Sample Id:	SP 5-3		Matrix:	Soil		Date Received	1:05.07.1	9 09.35	
Lab Sample Id	l: 623388-007		Date Collecte	d: 05.06.19 14.25	.06.19 14.25 Sample Depth: 3 f				
Analytical Me	thod: TPH By SW8015 M	Iod				Prep Method:	TX100	5P	
Tech:	ARM					% Moisture:			
Analyst:	ARM		Date Prep:	05.07.19 10.00		Basis:	Wet We	eight	
Seq Number:	3088339								
Parameter		Cas Number	Result F	L	Units	Analysis D	ate F	lag	Dil

						•	0		
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	05.07.19 15.29	U	1	
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	05.07.19 15.29	U	1	
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	05.07.19 15.29	U	1	
Total TPH	PHC635	<15.0	15.0		mg/kg	05.07.19 15.29	U	1	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane		111-85-3	102	%	70-135	05.07.19 15.29			
o-Terphenyl		84-15-1	97	%	70-135	05.07.19 15.29			





### COG Operating LLC, Artesia, NM

Sample Id:	SP 2-3		Matrix:	Soil		Date Received	1:05.07.19 09.	.35
Lab Sample Id: 623388-008			Date Collecte	Sample Depth: 3 ft				
Analytical Me	ethod: TPH By SW8015 I	Mod				Prep Method:	TX1005P	
Tech:	ARM					% Moisture:		
Analyst:	ARM		Date Prep:	05.07.19 10.00		Basis:	Wet Weight	
Seq Number:	3088339							
Parameter		Cas Number	Result R	T	Unite	Analysis D	ata Flan	Dil

1 al ameter	Cus Muniber	Result	KL		Units	Analysis Date	Flag	Dii
Gasoline Range Hydrocarbons	PHC610	<14.9	14.9		mg/kg	05.07.19 15.49	U	1
Diesel Range Organics	C10C28DRO	<14.9	14.9		mg/kg	05.07.19 15.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	05.07.19 15.49	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	05.07.19 15.49	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	98	%	70-135	05.07.19 15.49		
o-Terphenyl		84-15-1	94	%	70-135	05.07.19 15.49		





### COG Operating LLC, Artesia, NM

Sample Id:	SP 8-1		Matrix:	Soil		Date Received	1:05.07.19 09.3	35
Lab Sample I	d: 623388-009		Date Collected: 05.06.19 14.30 Sample Depth:		:1 ft			
Analytical Me	ethod: TPH By SW8015 M	Mod				Prep Method:	TX1005P	
Tech:	ARM					% Moisture:		
Analyst:	ARM		Date Prep:	05.07.19 10.00		Basis:	Wet Weight	
Seq Number:	3088339							
Parameter		Cas Number	Result R	т	Unite	Analysis D	ata Flag	ы

1 ar anicter	Cas Rumber	Ktsuit	KL		Units	Analysis Date	riag	Dii
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	05.07.19 16.09	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	05.07.19 16.09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	05.07.19 16.09	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	05.07.19 16.09	U	1
Currents		Cog Number	%	II.n:ta	Limita	Analysis Data	Flog	
Surrogate		Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	99	%	70-135	05.07.19 16.09		
o-Terphenyl		84-15-1	94	%	70-135	05.07.19 16.09		


## **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 LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clier	nt Sample	BLK	Method Blank	
BKS/LCS	Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	atory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 623388

## **COG Operating LLC**

SRO State Comm #65

<b>Analytical Method:</b>	TPH By S	W8015 M	od						F	Prep Method	l: TX	1005P				
Seq Number:	3088339				Matrix:	Solid		Date Prep: 05.07.19								
MB Sample Id:	7677418-1	-BLK		LCS Sar	nple Id:	7677418-	1-BKS	LCSD Sample Id: 7677418-1-BSD								
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag			
Gasoline Range Hydroc	arbons	<8.00	1000	1100	110	1080	108	70-135	2	20	mg/kg	05.07.19 12:12				
Diesel Range Organics		<8.13	1000	1130	113	1130	113	70-135	0	20	mg/kg	05.07.19 12:12				
Surrogate		MB %Rec	MB Flag	L %	CS Rec	LCS Flag	LCSI %Re	D LCS c Fla	CSD Limits Flag		Units	Analysis Date				
1-Chlorooctane		111		1	30		129		7	0-135	%	05.07.19 12:12				
o-Terphenyl		114		1	16		115		7	0-135	%	05.07.19 12:12				

Analytical Method:TPH By SW8015 ModSeq Number:3088339					Matrix:	Soil		Prep Method: TX1005P Date Prep: 05.07.19						
Parent Sample Id:	623388-001			MS San	nple Id:	623388-00	)1 S		MS	D Sample I	ld: 62.	3388-001 SD		
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag	
Gasoline Range Hydroca	rbons	9.41	997	980	97	1000	99	70-135	2	20	mg/kg	05.07.19 13:11		
Diesel Range Organics		<8.10	997	1030	103	1050	105	70-135	2	20	mg/kg	05.07.19 13:11		
Surrogate				N %]	1S Rec	MS Flag	MSD %Rec	MSD Flag		imits	Units	Analysis Date		
1-Chlorooctane					120		122	122		0-135	%	05.07.19 13:11		
o-Terphenyl					06		111		7	0-135	%	05.07.19 13:11		

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec



### UTAIN OF CUSTODY

Page 1 Of 1

Setting the Standard since 19	99	19		since	ard	Stan	the	Setting
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Stafford, Texas (281-240-4200)														Od	essa,	Texas	(432-5	63-18	00)			La	akelan	d, Florida	(863-	646-8526)	
Dallas Texas (214-902-0300)						Norcross. Georgia (770-449-8800)																					
Service Center - San Antonio, Texas (2	210-509-3334)					<u>www.xe</u>	enco.	<u>com</u>						Xen	ico Quo	te #	gia (r			Xenco	Job #		19	529	95		٦
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Client / Reporting Information				Proi	oct Info	rmetion	0.2000.000			<u></u>		9999929				<u>A</u>	nalytic	al Info	rmatio	on			<u> </u>			Matrix Codes	4
Company Name / Branch:			Project Nar	me/Number:	SR0 St	ate Comm	#65 /	/ 111924	153					-													
Concho Company Address: 2208 West Main Street Atresi	NM 99310		Project Los	nation: New L	lavias																					S = Soil/Sed/Solid	
	a, INNI 66210		Froject Cot	cation: New N	lexico																					GW =Ground Water DW = Drinking Water	8
Email: <u>dneel2@concho.com</u> i <u>tavarez@concho.com</u> tom.larson@craworld.com	Phone No: (432)21 432-701-8630 432-686-0086	15-2783	Invoice Ta;	: Concho											5										:	3 = Product SW = Surface water SL = Sludge	inal 1.0
Project Contact: Tom Larson																										Jw =Ocean/Sea water W = Wipe	Ē
Samplers's Name Glenn Quinney			PO Number	r:										L L	2											O = Oil	
			Collection	n				Num	ber of	prese	erved	bottle	s													WW= Waste Water A = Air	
No. Field ID / Point of Colle	ection				]		<b></b>			T		T	- HARDENAULTO		Ś								-				-
		Sample		_		# of	5	OH/Z etate	õ	\$04	F	DSH I	E H	H													
SSW-1		Depth	Date 5/6/2019	Time	Matrix	bottles	<u> </u>	Ac	É	웃	<u>z</u>	Z		F											Field	I Comments	_
2 NSW-1	······	COMP	5/6/2019	1405	s		-							< ×	:												4
3 ESW-1		COMP	5/6/2019	14.5	s	1						+	+														- 6
4 WSW-1		00140	5/6/2019	1110	6	1	<u>†                                    </u>						+		<u> </u>												of 1
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<sub>6</sub> SP 7 - 1		1FT	5/6/2019	1435	s	1																	_				Page
7 SP 5 - 3		3FT	5/6/2019	1475	s	1		1							.	+											-
8 SP 2 - 3		3FT	5/6/2019	1420	s	1							×	( x	·												-
9 SP 8 - 1		1FT	5/6/2019	1430	s	1	Ì						×	( x	:												-
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Turnaround Time ( Business days)						Data Deli	verabl	e Inform	ation	1								<u>ا                                     </u>	Notes:			I					
Same Day TAT	5 Day TAT		-	Lev	vel II Sto	I QC				Leve	el IV (F	uli D	ata Pk	g /raw	data)			R	; _ {	<u>)</u>	e	Τ.	. 13-10	10 20	. 1	Dag	1
Next Day EMERGENCY	7 Day TAT			Lev	/el III St	d QC+ F	orms			TRR	P Lev	el IV						12	K	)_E	h		0.0.	L. L.	<u>}                                     </u>		-
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3 Day EMERGENCY				TR	RP Che	cklist											·			30							-
TAT Starts Day received by Lab,	if received by 5:00	0 pm												·····				FED-E	EX / UF	PS: Tr	acking	#					-
Belinguished by Sampler:	SAMPLE CUSTOD	Y MUST BE I	DOCUMENT	ED BELOWE	ACHTAN	E SAMPL	ES CI	HANGE F	OSSE	SSION	, INCLI	DING	COUR	IER DE	LIVERY	,								Caracteria			
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Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negiotiated under a turby executed client contract.



# **XENCO Laboratories**



Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC	Acceptable Temperature Range: 0 - 6 degC										
Date/ Time Received: 05/07/2019 09:35:00 AM	Air and Metal samples	Acceptable Range: Ambient									
Work Order #: 623388	Temperature Measuring device used : R8										
Sample Rec	eipt Checklist	Comments									
#1 *Temperature of cooler(s)?	3.4										
#2 *Shipping container in good condition?	Yes										
#3 *Samples received on ice?	Yes										
#4 *Custody Seals intact on shipping container/ cooler?	N/A										
#5 Custody Seals intact on sample bottles?	N/A										
#6*Custody Seals Signed and dated?	N/A										
#7 *Chain of Custody present?	Yes										
#8 Any missing/extra samples?	No										
#9 Chain of Custody signed when relinquished/ received?	Yes										
#10 Chain of Custody agrees with sample labels/matrix?	Yes										
#11 Container label(s) legible and intact?	Yes										
#12 Samples in proper container/ bottle?	Yes										
#13 Samples properly preserved?	Yes										
#14 Sample container(s) intact?	Yes										
#15 Sufficient sample amount for indicated test(s)?	Yes										
#16 All samples received within hold time?	Yes										
#17 Subcontract of sample(s)?	N/A										
#18 Water VOC samples have zero headspace?	N/A										

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

Analyst:

PH Device/Lot#:

#18 Water VOC samples have zero headspace?

Checklist completed by:

Date: 05/07/2019

Checklist reviewed by: Jession Kramer

Jessica Kramer

Date: 05/07/2019

# Appendix E Photographic Log



Photo 1 – View of test pit activity to a depth of 3 feet bgs dated April 8, 2019.



Photo 2 – View of excavating activities dated April 10, 2019.



## Site Photographs



Photo 3 – View of excavation facing southwest dated April 11, 2019. Excavation floor varies in depth.



Photo 4 – View of excavation facing west dated April 11, 2019. Excavation floor varies in depth



## Site Photographs



Photo 5 – View of excavation facing north dated April 11, 2019. Excavation floor varies in depth.



Photo 6 – View during backfilling activities dated May 14, 2019.



## Site Photographs



Photo 7 – View following completion of backfilling and final grading activities dated May 16, 2019.



## Site Photographs