



2057 Commerce Drive  
Midland, TX 79703

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**APPROVED**

**By Olivia Yu at 4:40 pm, Jul 03, 2018**

NMOCD will approved of the preliminary delineation completed for 1RP-4944 and proposed remediation with one condition:  
Confirmation sidewall and bottom samples must reflect RRALs of 20.

June 4, 2018

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

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

**Re: Initial Soil Investigation Summary and Proposed Remediation Strategy  
Albatross State Com #002H  
API No. 30-025-41544  
GPS: 32.725502, -103.4947205  
UL "B", Sec. 30, T18S, R35E  
Lea Co, NM  
NMOCD Ref. No. 1RP-4944**

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG), has prepared this *Initial Soil Investigation Summary and Proposed Remediation Strategy* for the Release Site known as the **Albatross State Com #002H**. Details of the release are summarized below:

RELEASE DETAILS			
<b>Type of Release:</b>	Crude Oil	<b>Volume of Release:</b> 10 bbls Oil	
		<b>Volume Recovered:</b> 7 bbls Oil	
<b>Source of Release:</b>	Wellhead	<b>Date of Release:</b>	01/23/18 <b>Date of Discovery:</b> 01/23/18
<b>Was Immediate Notice Given?</b>	Not Required	<b>If YES, to Whom?</b>	Not Applicable
<b>Was a Watercourse Reached?</b>	No	<b>Volume Impacted the Watercourse:</b>	Not Applicable
<b>Cause of Problem and Remedial Action Taken:</b>			
The release was attributed to a valve which was in the wrong position. During initial response activities, a vacuum truck was dispatched to recover all freestanding fluids.			

A Site Location Map is provided as Attachment #1. A copy of the initial Release Notification and Corrective Action (NMOCD Form C-141) is provided as Attachment #5.

## REGULATORY FRAMEWORK

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

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

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

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

TOTAL RANKING SCORE FOR SITE		
Ranking Score Criteria		Score
Depth to Groundwater	~ 75 Feet	10
Well Head Protection Area, <1,000 Feet from water source, or <200 Feet from private domestic water source	No	0
Distance to Surface Water Body	> 1,000 Feet	0
TOTAL RANKING SCORE FOR SITE		10

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

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

## INITIAL INVESTIGATION

On **March 7, 2018**, an initial soil investigation was conducted at the Site by TRC. Six (6) delineation soil samples were collected from the affected area in an effort to determine the vertical and horizontal extent of the impacted soil. On **April 10, 2018**, an additional soil investigation was conducted at the Release Site with six (6) additional delineation soil samples being collected. The collected soil samples were submitted to an NMOCD-approved laboratory for analysis of benzene, BTEX, TPH and chloride concentrations. A table summarizing laboratory analytical results from soil samples collected during the initial soil assessment and additional soil investigation is provided below:

Sample ID	Depth	Soil Status	SW 846 8021b		SW-846 8015M				E300
			Benzene	Total BTEX	TPH GRO C <sub>6</sub> -C <sub>10</sub>	TPH DRO C <sub>10</sub> -C <sub>28</sub>	TPH ORO C <sub>28</sub> -C <sub>35</sub>	TOTAL TPH C <sub>6</sub> -C <sub>35</sub>	CHLORIDE
SP-1 @ Surface	0-3"	In-Situ	<0.361	23.911	692	16,500	2,140	<b>19,332</b>	<b>1,170</b>
SP-1 @ 6"	6"	In-Situ	<0.0982	1.219	50.1	5170	627	<b>5,847.1</b>	<b>1,090</b>
SP-1 @ 3'	3'	In-Situ	<0.0191	<0.0191	<3.82	<25.2	<25.2	<25.2	350
SP-2 @ 4'	4'	In-Situ	<0.0180	<0.018	<3.60	<25.0	<25.0	<25.0	325
N @ 6"	6"	In-Situ	<0.0174	0.0191	<3.48	368	103	471	<b>1,580</b>
N2 @ 1'	1'	In-Situ	<0.0198	<0.0198	<3.97	<24.9	<24.9	<24.9	<25
E @ 6"	6"	In-Situ	<0.0199	0.2804	12.9	22.5	<15.0	35.4	<b>24,400</b>
E-2 @ 1'	1'	In-Situ	<0.0191	<0.0191	<3.82	<25.0	<25.0	<25.0	115
S @ 6"	6"	In-Situ	<0.0182	0.1036	<3.64	208	126	334	<b>34,400</b>
S2 @ 1'	1'	In-Situ	<0.0195	<0.0195	<3.89	740	136	876	<b>670</b>
W @ 6"	6"	In-Situ	<0.0986	<0.0986	<19.7	1980	393	<b>2,373</b>	<b>1,300</b>
W2 @ 1'	1'	In-Situ	<0.0193	<0.0193	<3.86	<24.9	<24.9	<24.9	135
<b>NMOCD RRAL</b>			<b>10</b>	<b>50</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,000</b>	<b>600</b>

Laboratory analytical reports are provided as Attachment #4. A "Site & Sample Location Map" is provided as Attachment #2.

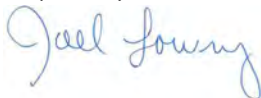
## PROPOSED REMEDIATION ACTIVITIES AND REMEDIATION WORKPLAN

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

- Utilizing a backhoe, excavate the Release Site to a depth of approximately three (3) feet bgs in the area represented by sample point SP-1, four (4) feet bgs in the area represented by sample point SP-2, or until laboratory analytical results indicate chloride and TPH concentrations are below the NMOCD RRAL. The excavated soil will be stockpiled on-site, atop a 6 mil poly liner, pending transportation under manifest to a NMOCD-approved disposal facility.
- Advance the excavation sidewalls until laboratory analytical results from confirmation soil samples indicate chloride and TPH concentrations are below the NMOCD RRAL.
- Upon excavating impacted soil from within the release margins, confirmation soil samples will be collected from the base and sidewalls of the excavated area and submitted to the laboratory for determination of BTEX, TPH and chloride concentrations.
- On receipt of favorable analytical results (below NMOCD regulatory guidelines), the excavation will be backfilled with locally sourced non-impacted caliche.
- Upon completion of remediation activities and receipt of laboratory analytical results from confirmation soil samples, TRC will prepare and submit a "Remediation Summary and Site Closure Request" to the NMOCD and NMSLO on behalf of COG.

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

Respectfully,



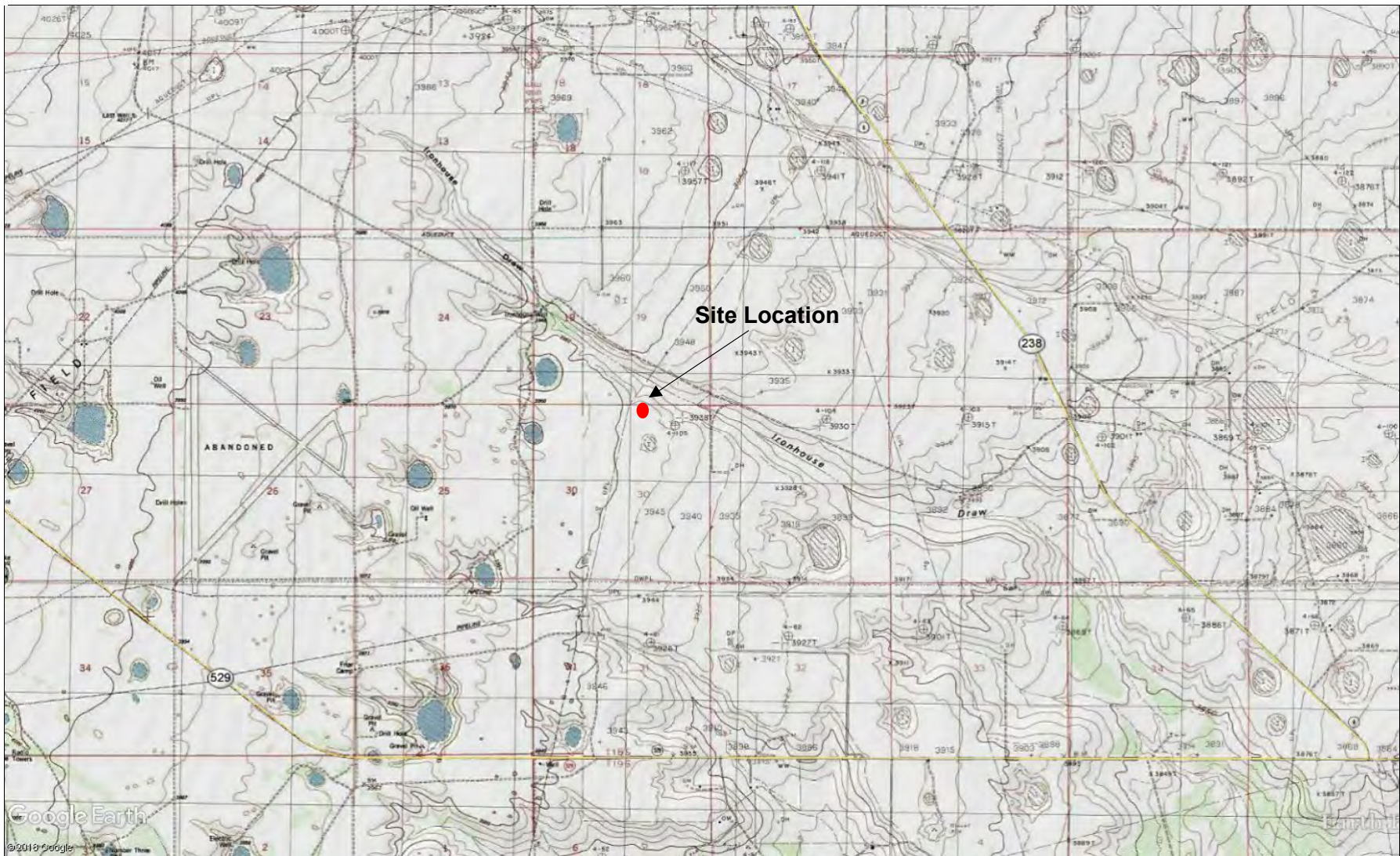
Joel Lowry  
Senior Project Manager  
TRC Environmental Corp.



Curt Stanley  
Senior Project Manager  
TRC Environmental Corp.

<b>Attachments:</b>	Attachment #1-	Figure 1 - Site Location Map
	Attachment #2-	Figure 2 - Site & Sample Location Map
	Attachment #3-	Groundwater Database Search
	Attachment #4-	Laboratory Analytical Reports
	Attachment #5-	Release Notification and Corrective Action (FORM C-141)





**LEGEND:**



Site Location

**Figure 1**

Site Location Map  
COG Operating, LLC  
Albatross State Com #002H  
Lea Co, NM

Scale 1" = 8,500'

Drafted by: ZC | Checked by: JL

Draft: May 17, 2018

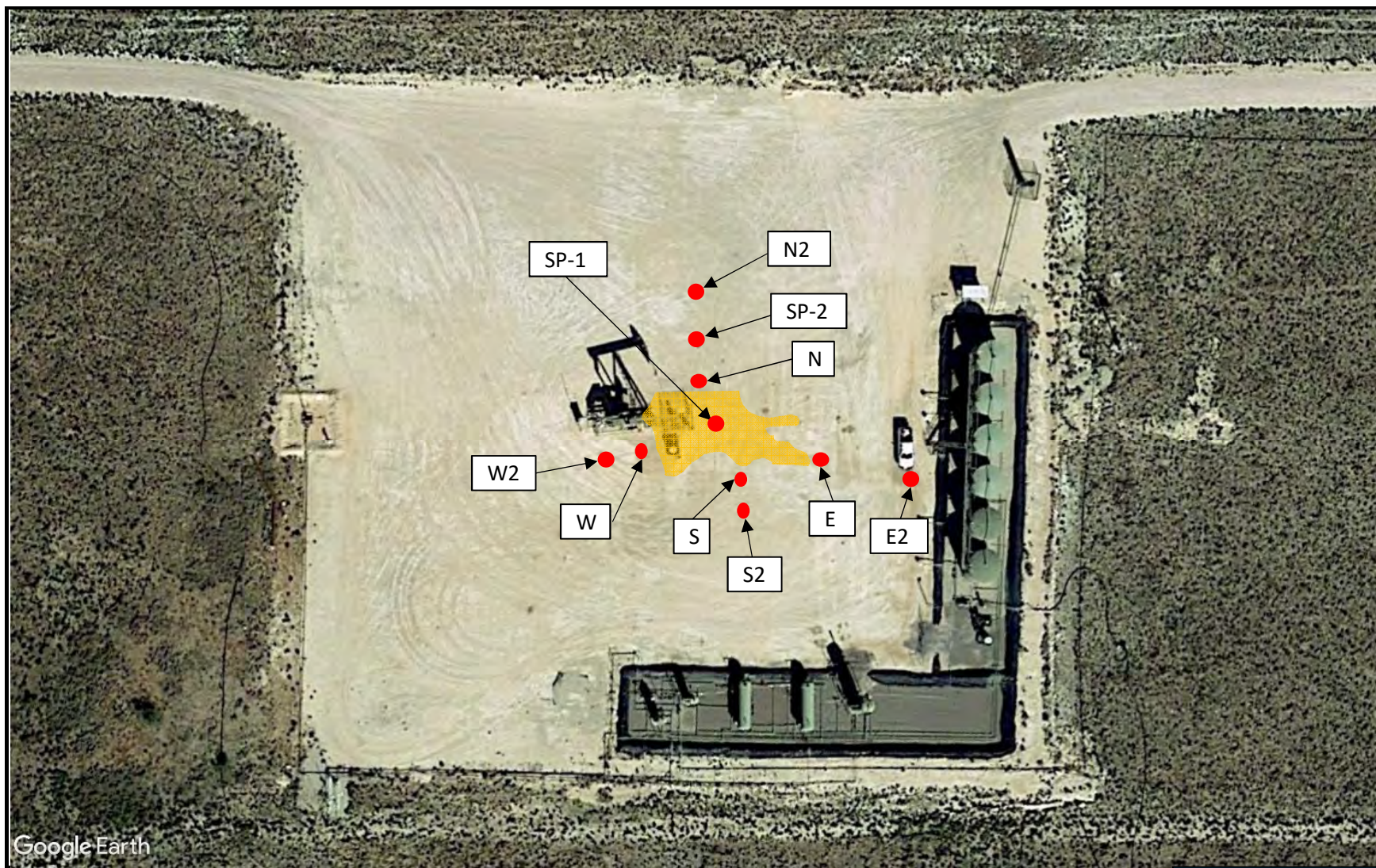
GPS: 32.725502, -103.4947205

UL "B", Sec. 30, T18S, R35E

TRC Proj. No: 299901









Google Earth

**LEGEND:**

-  Inferred Release Margins
-  Soil Sample Location

**Figure 2**

Site & Sample Location Map  
COG Operating, LLC  
Albatross State Com #002H  
Lea Co, NM

Scale 1" = 75'

Drafted by: BC | Checked by: JL

Draft: May 18, 2018

GPS: 32.725502, -103.4947205

UL "B", Sec. 30, T18S, R35E

TRC Proj. No: 299901







# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
<a href="#">L 04562</a>	L	LE		3	1	29	18S	35E		641874	3621315*	991	156	95	61
<a href="#">L 07928</a>	L	LE		4	4	1	19	18S	35E	640639	3622915	1132	175		
<a href="#">L 12926 POD1</a>	L	LE		2	2	3	25	18S	34E	639839	3621631	1225	182	117	65
<a href="#">L 03888</a>	L	LE		3	1	19	18S	35E		640253	3622912*	1317	107	70	37

Average Depth to Water: 94 feet

Minimum Depth: 70 feet

Maximum Depth: 117 feet

**Record Count:** 4

### UTMNAD83 Radius Search (in meters):

**Easting (X):** 641044.25

**Northing (Y):** 3621857.95

**Radius:** 1610

\*UTM location was derived from PLSS - see Help

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

5/18/18 8:25 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER



# Certificate of Analysis Summary 578785

TRC Solutions, Inc, Midland, TX

Project Name: Albatross State Com #002H

Project Id:

Contact: Joel Lowry

Project Location: Eddy Co. NM

Date Received in Lab: Thu Mar-08-18 05:45 pm

Report Date: 12-MAR-18

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	578785-001	578785-002	578785-003	578785-004	578785-005	578785-006
	<i>Field Id:</i>	N @ 6"	E @ 6"	S @ 6"	W @ 6"	SP-1 @ Surface	SP-1 @ 6"
	<i>Depth:</i>	6- In	6- In	6- In	6- In	Surf- In	6- In
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-07-18 08:55	Mar-07-18 09:00	Mar-07-18 09:05	Mar-07-18 09:10	Mar-07-18 09:15	Mar-07-18 09:20
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Mar-09-18 14:00	Mar-09-18 14:00	Mar-09-18 14:00	Mar-09-18 14:00	Mar-09-18 14:00	Mar-09-18 14:00
	<i>Analyzed:</i>	Mar-10-18 06:00	Mar-10-18 12:48	Mar-10-18 13:14	Mar-11-18 01:24	Mar-11-18 01:52	Mar-11-18 03:19
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Benzene		<0.0174 0.0174	<0.0199 0.0199	<0.0182 0.0182	<0.0986 0.0986	<0.361 0.361	<0.0982 0.0982
Toluene		<0.0174 0.0174	<0.0199 0.0199	<0.0182 0.0182	<0.0986 0.0986	0.361 0.361	<0.0982 0.0982
Ethylbenzene		0.0191 0.0174	0.0637 0.0199	0.0273 0.0182	<0.0986 0.0986	5.56 0.361	0.334 0.0982
m,p-Xylenes		<0.0348 0.0348	0.139 0.0398	0.0545 0.0364	<0.197 0.197	10.3 0.722	0.580 0.196
o-Xylene		<0.0174 0.0174	0.0777 0.0199	0.0218 0.0182	<0.0986 0.0986	7.69 0.361	0.305 0.0982
Xylenes, Total		<0.0174 0.0174	0.2167 0.0199	0.0763 0.0182	<0.0986 0.0986	17.99 0.361	0.885 0.0982
Total BTEX		0.0191 0.0174	0.2804 0.0199	0.1036 0.0182	<0.0986 0.0986	23.911 0.361	1.219 0.0982
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	Mar-10-18 09:30	Mar-10-18 09:30	Mar-10-18 09:30	Mar-10-18 09:30	Mar-10-18 09:30	Mar-10-18 09:30
	<i>Analyzed:</i>	Mar-10-18 13:16	Mar-10-18 13:28	Mar-10-18 13:40	Mar-10-18 13:53	Mar-10-18 14:05	Mar-10-18 14:18
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Chloride		1580 125	24400 2500	34400 2500	1300 125	1170 125	1090 125
<b>DRO-ORO By SW8015B SUB: TX104704215-18-24</b>	<i>Extracted:</i>	Mar-10-18 11:42	Mar-10-18 11:45	Mar-10-18 11:48	Mar-10-18 11:51	Mar-10-18 11:54	Mar-10-18 11:57
	<i>Analyzed:</i>	Mar-10-18 21:27	Mar-12-18 12:44	Mar-10-18 21:49	Mar-10-18 23:56	Mar-11-18 00:18	Mar-11-18 01:22
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Diesel Range Organics (DRO)		368 14.9	22.5 15.0	208 15.0	1980 14.9	16500 74.8	5170 15.0
Oil Range Hydrocarbons (ORO)		103 14.9	<15.0 15.0	126 15.0	393 14.9	2140 74.8	627 15.0
<b>TPH GRO by EPA 8015 Mod.</b>	<i>Extracted:</i>	Mar-09-18 14:00	Mar-09-18 14:00	Mar-09-18 14:00	Mar-09-18 14:00	Mar-09-18 14:00	Mar-09-18 14:00
	<i>Analyzed:</i>	Mar-10-18 06:00	Mar-10-18 12:48	Mar-10-18 13:14	Mar-11-18 01:24	Mar-11-18 01:52	Mar-11-18 03:19
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
TPH-GRO		<3.48 3.48	12.9 3.98	<3.64 3.64	<19.7 19.7	692 72.2	50.1 19.6

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

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

Kelsey Brooks  
Project Manager



# **Analytical Report 578785**

**for**  
**TRC Solutions, Inc**

**Project Manager: Joel Lowry**

**Albatross State Com #002H**

**12-MAR-18**

Collected By: Client



**6701 Aberdeen, Suite 9 Lubbock, TX 79424**

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):

Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)



12-MAR-18

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

Reference: XENCO Report No(s): **578785**  
**Albatross State Com #002H**  
Project Address: Eddy Co. NM

**Joel Lowry:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 578785. 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. 578785 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

**Kelsey Brooks**

Project Manager

***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 578785

TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
N @ 6"	S	03-07-18 08:55	6 In	578785-001
E @ 6"	S	03-07-18 09:00	6 In	578785-002
S @ 6"	S	03-07-18 09:05	6 In	578785-003
W @ 6"	S	03-07-18 09:10	6 In	578785-004
SP-1 @ Surface	S	03-07-18 09:15	Surf In	578785-005
SP-1 @ 6"	S	03-07-18 09:20	6 In	578785-006





## CASE NARRATIVE

*Client Name: TRC Solutions, Inc*

*Project Name: Albatross State Com #002H*

Project ID:

Work Order Number(s): 578785

Report Date: 12-MAR-18

Date Received: 03/08/2018

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3043314 BTEX by EPA 8021B

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

Batch: LBA-3043344 BTEX by EPA 8021B

Samples 578785-004, 578785-005, and 578785-006 were diluted due to turbidity.

Batch: LBA-3043345 TPH GRO by EPA 8015 Mod.

Sample 578785-004 was diluted due to turbidity.



## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: N @ 6"  
Lab Sample Id: 578785-001

Matrix: Soil  
Date Collected: 03.07.18 08.55

Date Received: 03.08.18 17.45  
Sample Depth: 6 In

Analytical Method: Chloride by EPA 300

Tech: RNL

Analyst: RNL

Seq Number: 3043343

Date Prep: 03.10.18 09.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1580	125	mg/kg	03.10.18 13.16		5

Analytical Method: DRO-ORO By SW8015B

Tech: ISU

Analyst: ISU

Seq Number: 3043382

Date Prep: 03.10.18 11.42

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	368	14.9	mg/kg	03.10.18 21.27		1
Oil Range Hydrocarbons (ORO)	PHCG2835	103	14.9	mg/kg	03.10.18 21.27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	03.10.18 21.27	
o-Terphenyl	84-15-1	89	%	70-135	03.10.18 21.27	

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3043314

Date Prep: 03.09.18 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0174	0.0174	mg/kg	03.10.18 06.00	U	1
Toluene	108-88-3	<0.0174	0.0174	mg/kg	03.10.18 06.00	U	1
Ethylbenzene	100-41-4	0.0191	0.0174	mg/kg	03.10.18 06.00		1
m,p-Xylenes	179601-23-1	<0.0348	0.0348	mg/kg	03.10.18 06.00	U	1
o-Xylene	95-47-6	<0.0174	0.0174	mg/kg	03.10.18 06.00	U	1
Xylenes, Total	1330-20-7	<0.0174	0.0174	mg/kg	03.10.18 06.00	U	1
Total BTEX		0.0191	0.0174	mg/kg	03.10.18 06.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	68-120	03.10.18 06.00	
a,a,a-Trifluorotoluene	98-08-8	98	%	71-121	03.10.18 06.00	



## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: N @ 6"  
Lab Sample Id: 578785-001

Matrix: Soil  
Date Collected: 03.07.18 08.55

Date Received: 03.08.18 17.45  
Sample Depth: 6 In

Analytical Method: TPH GRO by EPA 8015 Mod.

Tech: MIT

Analyst: MIT

Seq Number: 3043319

Date Prep: 03.09.18 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.48	3.48	mg/kg	03.10.18 06.00	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	104	%	76-123	03.10.18 06.00		
a,a,a-Trifluorotoluene	98-08-8	101	%	69-120	03.10.18 06.00		





## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: E @ 6"  
Lab Sample Id: 578785-002

Matrix: Soil  
Date Collected: 03.07.18 09.00

Date Received: 03.08.18 17.45  
Sample Depth: 6 In

Analytical Method: Chloride by EPA 300

Tech: RNL

Analyst: RNL

Seq Number: 3043343

Date Prep: 03.10.18 09.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24400	2500	mg/kg	03.10.18 13.28		100

Analytical Method: DRO-ORO By SW8015B

Tech: ISU

Analyst: ISU

Seq Number: 3043382

Date Prep: 03.10.18 11.45

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	22.5	15.0	mg/kg	03.12.18 12.44		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.12.18 12.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	03.12.18 12.44	
o-Terphenyl	84-15-1	109	%	70-135	03.12.18 12.44	

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3043314

Date Prep: 03.09.18 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0199	0.0199	mg/kg	03.10.18 12.48	U	1
Toluene	108-88-3	<0.0199	0.0199	mg/kg	03.10.18 12.48	U	1
Ethylbenzene	100-41-4	0.0637	0.0199	mg/kg	03.10.18 12.48		1
m,p-Xylenes	179601-23-1	0.139	0.0398	mg/kg	03.10.18 12.48		1
o-Xylene	95-47-6	0.0777	0.0199	mg/kg	03.10.18 12.48		1
Xylenes, Total	1330-20-7	0.2167	0.0199	mg/kg	03.10.18 12.48		1
Total BTEX		0.2804	0.0199	mg/kg	03.10.18 12.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	68-120	03.10.18 12.48	
a,a,a-Trifluorotoluene	98-08-8	91	%	71-121	03.10.18 12.48	



## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: E @ 6"  
Lab Sample Id: 578785-002

Matrix: Soil  
Date Collected: 03.07.18 09.00

Date Received: 03.08.18 17.45  
Sample Depth: 6 In

Analytical Method: TPH GRO by EPA 8015 Mod.

Tech: MIT

Analyst: MIT

Seq Number: 3043319

Date Prep: 03.09.18 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	12.9	3.98	mg/kg	03.10.18 12.48		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	76-123	03.10.18 12.48		
a,a,a-Trifluorotoluene	98-08-8	96	%	69-120	03.10.18 12.48		



## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: S @ 6"  
Lab Sample Id: 578785-003

Matrix: Soil  
Date Collected: 03.07.18 09.05

Date Received: 03.08.18 17.45  
Sample Depth: 6 In

Analytical Method: Chloride by EPA 300

Tech: RNL

Analyst: RNL

Seq Number: 3043343

Date Prep: 03.10.18 09.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34400	2500	mg/kg	03.10.18 13.40		100

Analytical Method: DRO-ORO By SW8015B

Tech: ISU

Analyst: ISU

Seq Number: 3043382

Date Prep: 03.10.18 11.48

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	208	15.0	mg/kg	03.10.18 21.49		1
Oil Range Hydrocarbons (ORO)	PHCG2835	126	15.0	mg/kg	03.10.18 21.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	03.10.18 21.49	
o-Terphenyl	84-15-1	86	%	70-135	03.10.18 21.49	

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3043314

Date Prep: 03.09.18 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0182	0.0182	mg/kg	03.10.18 13.14	U	1
Toluene	108-88-3	<0.0182	0.0182	mg/kg	03.10.18 13.14	U	1
Ethylbenzene	100-41-4	0.0273	0.0182	mg/kg	03.10.18 13.14		1
m,p-Xylenes	179601-23-1	0.0545	0.0364	mg/kg	03.10.18 13.14		1
o-Xylene	95-47-6	0.0218	0.0182	mg/kg	03.10.18 13.14		1
Xylenes, Total	1330-20-7	0.0763	0.0182	mg/kg	03.10.18 13.14		1
Total BTEX		0.1036	0.0182	mg/kg	03.10.18 13.14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	90	%	68-120	03.10.18 13.14	
a,a,a-Trifluorotoluene	98-08-8	92	%	71-121	03.10.18 13.14	





## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: S @ 6"  
Lab Sample Id: 578785-003

Matrix: Soil  
Date Collected: 03.07.18 09.05

Date Received: 03.08.18 17.45  
Sample Depth: 6 In

Analytical Method: TPH GRO by EPA 8015 Mod.

Tech: MIT

Analyst: MIT

Seq Number: 3043319

Date Prep: 03.09.18 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.64	3.64	mg/kg	03.10.18 13.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	110	%	76-123	03.10.18 13.14		
a,a,a-Trifluorotoluene	98-08-8	95	%	69-120	03.10.18 13.14		



## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: **W @ 6"**  
Lab Sample Id: 578785-004

Matrix: Soil  
Date Collected: 03.07.18 09.10

Date Received: 03.08.18 17.45  
Sample Depth: 6 In

Analytical Method: Chloride by EPA 300

Tech: RNL

Analyst: RNL

Seq Number: 3043343

Date Prep: 03.10.18 09.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1300	125	mg/kg	03.10.18 13.53		5

Analytical Method: DRO-ORO By SW8015B

Tech: ISU

Analyst: ISU

Seq Number: 3043382

Date Prep: 03.10.18 11.51

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	1980	14.9	mg/kg	03.10.18 23.56		1
Oil Range Hydrocarbons (ORO)	PHCG2835	393	14.9	mg/kg	03.10.18 23.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	03.10.18 23.56	
o-Terphenyl	84-15-1	94	%	70-135	03.10.18 23.56	

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3043344

Date Prep: 03.09.18 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0986	0.0986	mg/kg	03.11.18 01.24	U	5
Toluene	108-88-3	<0.0986	0.0986	mg/kg	03.11.18 01.24	U	5
Ethylbenzene	100-41-4	<0.0986	0.0986	mg/kg	03.11.18 01.24	U	5
m,p-Xylenes	179601-23-1	<0.197	0.197	mg/kg	03.11.18 01.24	U	5
o-Xylene	95-47-6	<0.0986	0.0986	mg/kg	03.11.18 01.24	U	5
Xylenes, Total	1330-20-7	<0.0986	0.0986	mg/kg	03.11.18 01.24	U	5
Total BTEX		<0.0986	0.0986	mg/kg	03.11.18 01.24	U	5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	68-120	03.11.18 01.24	
a,a,a-Trifluorotoluene	98-08-8	87	%	71-121	03.11.18 01.24	



## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: **W @ 6"**  
Lab Sample Id: 578785-004

Matrix: Soil  
Date Collected: 03.07.18 09.10

Date Received: 03.08.18 17.45  
Sample Depth: 6 In

Analytical Method: TPH GRO by EPA 8015 Mod.

Tech: MIT

Analyst: MIT

Seq Number: 3043345

Date Prep: 03.09.18 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<19.7	19.7	mg/kg	03.11.18 01.24	U	5
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	106	%	76-123	03.11.18 01.24		
a,a,a-Trifluorotoluene	98-08-8	80	%	69-120	03.11.18 01.24		



## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: **SP-1 @ Surface**

Matrix: Soil

Date Received: 03.08.18 17.45

Lab Sample Id: 578785-005

Date Collected: 03.07.18 09.15

Sample Depth: Surf In

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 03.10.18 09.30

Basis: Wet Weight

Seq Number: 3043343

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1170	125	mg/kg	03.10.18 14.05		5

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 03.10.18 11.54

Basis: Wet Weight

Seq Number: 3043382

SUB: TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	16500	74.8	mg/kg	03.11.18 00.18		5
Oil Range Hydrocarbons (ORO)	PHCG2835	2140	74.8	mg/kg	03.11.18 00.18		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-135	03.11.18 00.18	
o-Terphenyl	84-15-1	115	%	70-135	03.11.18 00.18	

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 03.09.18 14.00

Basis: Wet Weight

Seq Number: 3043344

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.361	0.361	mg/kg	03.11.18 01.52	U	20
Toluene	108-88-3	0.361	0.361	mg/kg	03.11.18 01.52		20
Ethylbenzene	100-41-4	5.56	0.361	mg/kg	03.11.18 01.52		20
m,p-Xylenes	179601-23-1	10.3	0.722	mg/kg	03.11.18 01.52		20
o-Xylene	95-47-6	7.69	0.361	mg/kg	03.11.18 01.52		20
Xylenes, Total	1330-20-7	17.99	0.361	mg/kg	03.11.18 01.52		20
Total BTEX		23.911	0.361	mg/kg	03.11.18 01.52		20

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	68-120	03.11.18 01.52	
a,a,a-Trifluorotoluene	98-08-8	83	%	71-121	03.11.18 01.52	



## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: **SP-1 @ Surface**

Matrix: Soil

Date Received: 03.08.18 17.45

Lab Sample Id: 578785-005

Date Collected: 03.07.18 09.15

Sample Depth: Surf In

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 03.09.18 14.00

Basis: Wet Weight

Seq Number: 3043345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	692	72.2	mg/kg	03.11.18 01.52		20
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	131	%	76-123	03.11.18 01.52	**	
a,a,a-Trifluorotoluene	98-08-8	84	%	69-120	03.11.18 01.52		





## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: **SP-1 @ 6"**

Lab Sample Id: 578785-006

Matrix: Soil

Date Collected: 03.07.18 09.20

Date Received: 03.08.18 17.45

Sample Depth: 6 In

Analytical Method: Chloride by EPA 300

Tech: RNL

Analyst: RNL

Seq Number: 3043343

Date Prep: 03.10.18 09.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1090	125	mg/kg	03.10.18 14.18		5

Analytical Method: DRO-ORO By SW8015B

Tech: ISU

Analyst: ISU

Seq Number: 3043382

Date Prep: 03.10.18 11.57

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

SUB: TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	5170	15.0	mg/kg	03.11.18 01.22		1
Oil Range Hydrocarbons (ORO)	PHCG2835	627	15.0	mg/kg	03.11.18 01.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	03.11.18 01.22	
o-Terphenyl	84-15-1	100	%	70-135	03.11.18 01.22	

Analytical Method: BTEX by EPA 8021B

Tech: MIT

Analyst: MIT

Seq Number: 3043344

Date Prep: 03.09.18 14.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0982	0.0982	mg/kg	03.11.18 03.19	U	5
Toluene	108-88-3	<0.0982	0.0982	mg/kg	03.11.18 03.19	U	5
Ethylbenzene	100-41-4	0.334	0.0982	mg/kg	03.11.18 03.19		5
m,p-Xylenes	179601-23-1	0.580	0.196	mg/kg	03.11.18 03.19		5
o-Xylene	95-47-6	0.305	0.0982	mg/kg	03.11.18 03.19		5
Xylenes, Total	1330-20-7	0.885	0.0982	mg/kg	03.11.18 03.19		5
Total BTEX		1.219	0.0982	mg/kg	03.11.18 03.19		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	68-120	03.11.18 03.19	
a,a,a-Trifluorotoluene	98-08-8	82	%	71-121	03.11.18 03.19	



## Certificate of Analytical Results 578785

### TRC Solutions, Inc, Midland, TX

Albatross State Com #002H

Sample Id: **SP-1 @ 6"**

Matrix: Soil

Date Received: 03.08.18 17.45

Lab Sample Id: 578785-006

Date Collected: 03.07.18 09.20

Sample Depth: 6 In

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 03.09.18 14.00

Basis: Wet Weight

Seq Number: 3043345

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	50.1	19.6	mg/kg	03.11.18 03.19		5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	76-123	03.11.18 03.19		
a,a,a-Trifluorotoluene	98-08-8	86	%	69-120	03.11.18 03.19		

- 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      **SQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



## QC Summary 578785

### TRC Solutions, Inc Albatross State Com #002H

**Analytical Method: Chloride by EPA 300**

Seq Number: 3043343

MB Sample Id: 7640526-1-BLK

Matrix: Solid

LCS Sample Id: 7640526-1-BKS

Prep Method: E300P

Date Prep: 03.10.18

LCSD Sample Id: 7640526-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	262	105	262	105	90-110	0	20	mg/kg	03.10.18 11:49	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3043343

Parent Sample Id: 578782-001

Matrix: Soil

MS Sample Id: 578782-001 S

Prep Method: E300P

Date Prep: 03.10.18

MSD Sample Id: 578782-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8890	250	9090	80	8770	0	80-120	4	20	mg/kg	03.10.18 12:26	X
Chloride	8890	250	8770	0	8770	0	80-120	4	20	mg/kg	03.10.18 12:38	X

**Analytical Method: DRO-ORO By SW8015B**

Seq Number: 3043382

MB Sample Id: 7640523-1-BLK

Matrix: Solid

LCS Sample Id: 7640523-1-BKS

Prep Method: SW8015P

Date Prep: 03.10.18

LCSD Sample Id: 7640523-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	<15.0	1000	1100	110	1170	117	70-135	6	35	mg/kg	03.10.18 12:27	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	93		108		117		70-135	%	03.10.18 12:27			
o-Terphenyl	100		104		115		70-135	%	03.10.18 12:27			

**Analytical Method: DRO-ORO By SW8015B**

Seq Number: 3043382

Parent Sample Id: 578782-001

Matrix: Soil

MS Sample Id: 578782-001 S

Prep Method: SW8015P

Date Prep: 03.10.18

MSD Sample Id: 578782-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	25.9	996	1300	128	1240	122	70-135	5	35	mg/kg	03.10.18 17:12	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			108		105		70-135	%	03.10.18 17:12			
o-Terphenyl			101		97		70-135	%	03.10.18 17:12			

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

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

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

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

TRC Solutions, Inc  
Albatross State Com #002H

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3043314

MB Sample Id: 7640482-1-BLK

Matrix: Solid

LCS Sample Id: 7640482-1-BKS

Prep Method: SW5030B

Date Prep: 03.09.18

LCSD Sample Id: 7640482-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	1.87	94	1.82	91	55-120	3	20	mg/kg	03.09.18 20:57	
Toluene	<0.0200	2.00	1.77	89	1.79	90	77-120	1	20	mg/kg	03.09.18 20:57	
Ethylbenzene	<0.0200	2.00	1.73	87	1.82	91	77-120	5	20	mg/kg	03.09.18 20:57	
m,p-Xylenes	<0.0400	4.00	3.46	87	3.64	91	78-120	5	20	mg/kg	03.09.18 20:57	
o-Xylene	<0.0200	2.00	1.75	88	1.82	91	78-120	4	20	mg/kg	03.09.18 20:57	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
4-Bromofluorobenzene	88		84		89		68-120	%	03.09.18 20:57			
a,a,a-Trifluorotoluene	86		77		77		71-121	%	03.09.18 20:57			

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3043344

MB Sample Id: 7640501-1-BLK

Matrix: Solid

LCS Sample Id: 7640501-1-BKS

Prep Method: SW5030B

Date Prep: 03.09.18

LCSD Sample Id: 7640501-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	1.76	88	1.82	91	55-120	3	20	mg/kg	03.10.18 17:45	
Toluene	<0.0200	2.00	1.79	90	1.74	87	77-120	3	20	mg/kg	03.10.18 17:45	
Ethylbenzene	<0.0200	2.00	1.78	89	1.74	87	77-120	2	20	mg/kg	03.10.18 17:45	
m,p-Xylenes	<0.0400	4.00	3.58	90	3.49	87	78-120	3	20	mg/kg	03.10.18 17:45	
o-Xylene	<0.0200	2.00	1.80	90	1.75	88	78-120	3	20	mg/kg	03.10.18 17:45	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
4-Bromofluorobenzene	84		87		83		68-120	%	03.10.18 17:45			
a,a,a-Trifluorotoluene	80		75		78		71-121	%	03.10.18 17:45			

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3043314

Parent Sample Id: 578782-002

Matrix: Soil

MS Sample Id: 578782-002 S

Prep Method: SW5030B

Date Prep: 03.09.18

MSD Sample Id: 578782-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0177	1.77	1.48	84	1.44	82	54-120	3	25	mg/kg	03.10.18 00:34	
Toluene	<0.0177	1.77	1.53	86	1.51	86	57-120	1	25	mg/kg	03.10.18 00:34	
Ethylbenzene	<0.0177	1.77	1.55	88	1.60	91	58-131	3	25	mg/kg	03.10.18 00:34	
m,p-Xylenes	<0.0355	3.55	3.08	87	3.23	92	62-124	5	25	mg/kg	03.10.18 00:34	
o-Xylene	<0.0177	1.77	1.54	87	1.60	91	62-124	4	25	mg/kg	03.10.18 00:34	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
4-Bromofluorobenzene			92		98		68-120	%	03.10.18 00:34			
a,a,a-Trifluorotoluene			88		84		71-121	%	03.10.18 00:34			

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery $[D] = 100 * (C-A) / B$   
 $RPD = 200 * | (C-E) / (C+E) |$   
 $[D] = 100 * (C) / [B]$ LCS = Laboratory Control Sample  
A = Parent Result  
C = MS/LCS Result  
E = MSD/LCSD ResultMS = Matrix Spike  
B = Spike Added  
D = MSD/LCSD % Rec



TRC Solutions, Inc  
Albatross State Com #002H

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3043344

Parent Sample Id: 578782-003

Matrix: Soil

MS Sample Id: 578782-003 S

Prep Method: SW5030B

Date Prep: 03.09.18

MSD Sample Id: 578782-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0181	1.81	1.55	86	1.57	84	54-120	1	25	mg/kg	03.10.18 21:20	
Toluene	<0.0181	1.81	1.57	87	1.61	87	57-120	3	25	mg/kg	03.10.18 21:20	
Ethylbenzene	<0.0181	1.81	1.66	92	1.70	91	58-131	2	25	mg/kg	03.10.18 21:20	
m,p-Xylenes	<0.0361	3.61	3.33	92	3.38	91	62-124	1	25	mg/kg	03.10.18 21:20	
o-Xylene	<0.0181	1.81	1.66	92	1.68	90	62-124	1	25	mg/kg	03.10.18 21:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	94		91		68-120	%	03.10.18 21:20
a,a,a-Trifluorotoluene	86		84		71-121	%	03.10.18 21:20

## Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3043319

MB Sample Id: 7640497-1-BLK

Matrix: Solid

LCS Sample Id: 7640497-1-BKS

Prep Method: SW5030B

Date Prep: 03.09.18

LCSD Sample Id: 7640497-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<4.00	20.0	18.7	94	18.9	95	35-129	1	20	mg/kg	03.09.18 21:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	89		95		93		76-123	%	03.09.18 21:51
a,a,a-Trifluorotoluene	109		102		90		69-120	%	03.09.18 21:51

## Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3043345

MB Sample Id: 7640505-1-BLK

Matrix: Solid

LCS Sample Id: 7640505-1-BKS

Prep Method: SW5030B

Date Prep: 03.09.18

LCSD Sample Id: 7640505-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<4.00	20.0	18.3	92	19.1	96	35-129	4	20	mg/kg	03.10.18 18:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	87		95		96		76-123	%	03.10.18 18:38
a,a,a-Trifluorotoluene	120		96		90		69-120	%	03.10.18 18:38

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery $[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$ LCS = Laboratory Control Sample  
A = Parent Result  
C = MS/LCS Result  
E = MSD/LCSD ResultMS = Matrix Spike  
B = Spike Added  
D = MSD/LCSD % Rec

TRC Solutions, Inc  
Albatross State Com #002H

Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3043319

Parent Sample Id: 578782-002

Matrix: Soil

MS Sample Id: 578782-002 S

Prep Method: SW5030B

Date Prep: 03.09.18

MSD Sample Id: 578782-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD	Limit	Units	Analysis Date	Flag
TPH-GRO	<3.87	19.3	14.6	76	14.4	76	35-129	1	20		mg/kg	03.10.18 01:27	

## Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	105		102		76-123	%	03.10.18 01:27
a,a,a-Trifluorotoluene	83		83		69-120	%	03.10.18 01:27

Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3043345

Parent Sample Id: 578782-003

Matrix: Soil

MS Sample Id: 578782-003 S

Prep Method: SW5030B

Date Prep: 03.09.18

MSD Sample Id: 578782-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD	Limit	Units	Analysis Date	Flag
TPH-GRO	<3.45	17.2	12.7	74	14.3	76	35-129	12	20		mg/kg	03.10.18 22:15	

## Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	102		103		76-123	%	03.10.18 22:15
a,a,a-Trifluorotoluene	78		80		69-120	%	03.10.18 22:15

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery $[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$ LCS = Laboratory Control Sample  
A = Parent Result  
C = MS/LCS Result  
E = MSD/LCSD ResultMS = Matrix Spike  
B = Spike Added  
D = MSD/LCSD % Rec

## Setting the Standard since 1990

**Stafford, Texas (281-240-4200)**

Dallas Texas (214-902-0300)

**San Antonio, Texas (210-509-3334)**

**Midland, Texas (432-704-5251)**

[www.xenco.com](http://www.xenco.com)

**Xenco Job #**

Phoenix, Arizona (480-355-0900)

[illegible]



## Inter-Office Shipment

Page 1 of 1

IOS Number **1057351**

Date/Time: 03/09/18 15:34

Created by: Brenda Ward

Please send report to: Kelsey Brooks

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Houston**

Air Bill No.: 771768273134

Phone:

E-Mail: kelsey.brooks@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
578785-001	S	N @ 6"	03/07/18 08:55	SW8015B_DROORO	DRO-ORO By SW8015B	03/12/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578785-002	S	E @ 6"	03/07/18 09:00	SW8015B_DROORO	DRO-ORO By SW8015B	03/12/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578785-003	S	S @ 6"	03/07/18 09:05	SW8015B_DROORO	DRO-ORO By SW8015B	03/12/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578785-004	S	W @ 6"	03/07/18 09:10	SW8015B_DROORO	DRO-ORO By SW8015B	03/12/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578785-005	S	SP-1 @ Surface	03/07/18 09:15	SW8015B_DROORO	DRO-ORO By SW8015B	03/12/18	03/21/18	KEB	PHCC10C28 PHCC28C35	
578785-006	S	SP-1 @ 6"	03/07/18 09:20	SW8015B_DROORO	DRO-ORO By SW8015B	03/12/18	03/21/18	KEB	PHCC10C28 PHCC28C35	

Inter Office Shipment or Sample Comments:

Relinquished By

Brenda Ward

Received By:

Jean Quila

Date Relinquished: 03/09/2018

Date Received: 03/10/2018 09:00

Cooler Temperature: 1.5



## XENCO Laboratories

### Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 1057351

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : hou068

Sent By: Brenda Ward

Date Sent: 03/09/2018 03:34 PM

Received By: Jean Quila

Date Received: 03/10/2018 09:00 AM

#### Sample Receipt Checklist

#### Comments

#1 *Temperature of cooler(s)?	1.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by : \_\_\_\_\_ Date: \_\_\_\_\_

Checklist reviewed by:

Jean Quila

Date: 03/10/2018





# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 03/08/2018 05:45:00 PM

Work Order #: 578785

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-3

### Sample Receipt Checklist

### Comments

#1 *Temperature of cooler(s)?	1.3
#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)?	Yes
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brenda Ward  
Brenda Ward

Date: 03/09/2018

Checklist reviewed by:

Kelsey Brooks  
Kelsey Brooks

Date: 03/12/2018

# **Analytical Report 582357**

**for**  
**TRC Solutions, Inc**

**Project Manager: Joel Lowry**

**Albatross State**

**18-APR-18**

Collected By: Client



**6701 Aberdeen, Suite 9 Lubbock, TX 79424**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



18-APR-18

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

Reference: XENCO Report No(s): **582357**  
**Albatross State**  
Project Address: Eddy Co, NM

**Joel Lowry:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 582357. 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. 582357 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

**Kelsey Brooks**

Project Manager

***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 582357

TRC Solutions, Inc, Midland, TX

Albatross State

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-1 @3 '	S	04-10-18 09:00	3 - feet	582357-001
SP-2@4'	S	04-10-18 09:20	4 - feet	582357-002
N-2 @1 '	S	04-10-18 09:40	1 - feet	582357-003
S-2 @1 '	S	04-10-18 10:00	1 - feet	582357-004
E-2 @1 '	S	04-10-18 10:20	1 - feet	582357-005
W-2 @1 '	S	04-10-18 10:40	1 - feet	582357-006



## CASE NARRATIVE

*Client Name: TRC Solutions, Inc*

*Project Name: Albatross State*

Project ID:  
Work Order Number(s): 582357

Report Date: 18-APR-18  
Date Received: 04/12/2018

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3046901 Chloride by EPA 300

Lab Sample ID 582357-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 582357-001, -002, -003, -004, -005, -006.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3047041 DRO-ORO By SW8015B

Surrogate Tricosane, Surrogate n-Triacontane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 582357-004.

Batch: LBA-3047044 BTEX by EPA 8021B

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





# Certificate of Analysis Summary 582357

TRC Solutions, Inc, Midland, TX

Project Name: Albatross State

Project Id:

Contact: Joel Lowry

Project Location: Eddy Co, NM

Date Received in Lab: Thu Apr-12-18 02:12 pm

Report Date: 18-APR-18

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	582357-001	582357-002	582357-003	582357-004	582357-005	582357-006
	<i>Field Id:</i>	SP-1 @3 '	SP-2@4'	N-2 @1 '	S-2 @1 '	E-2 @1 '	W-2 @1 '
	<i>Depth:</i>	3-feet	4-feet	1-feet	1-feet	1-feet	1-feet
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Apr-10-18 09:00	Apr-10-18 09:20	Apr-10-18 09:40	Apr-10-18 10:00	Apr-10-18 10:20	Apr-10-18 10:40
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Apr-17-18 11:00	Apr-17-18 11:00	Apr-17-18 11:00	Apr-17-18 11:00	Apr-17-18 11:00	Apr-17-18 11:00
	<i>Analyzed:</i>	Apr-18-18 03:07	Apr-17-18 23:57	Apr-18-18 03:34	Apr-18-18 04:01	Apr-18-18 04:28	Apr-18-18 04:55
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Benzene		<0.0191	<0.0180	<0.0198	<0.0195	<0.0191	<0.0193
Toluene		0.0191	0.0180	0.0198	0.0195	0.0191	0.0193
Ethylbenzene		<0.0191	<0.0180	<0.0198	<0.0195	<0.0191	<0.0193
m,p-Xylenes		<0.0382	<0.0360	<0.0397	<0.0389	<0.0382	<0.0386
o-Xylene		0.0191	0.0180	0.0198	0.0195	0.0191	0.0193
Total Xylenes		<0.0191	<0.018	<0.0198	<0.0195	<0.0191	<0.0193
Total BTEX		0.0191	0.018	0.0198	0.0195	0.0191	0.0193
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	Apr-16-18 12:30	Apr-16-18 12:30	Apr-16-18 12:30	Apr-16-18 12:30	Apr-16-18 12:30	Apr-16-18 12:30
	<i>Analyzed:</i>	Apr-17-18 10:08	Apr-17-18 10:21	Apr-17-18 12:13	Apr-17-18 11:23	Apr-17-18 11:35	Apr-17-18 12:00
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Chloride		350	325	<25.0	670	115	135
		50.0	25.0	25.0	125	50.0	125
<b>DRO-ORO By SW8015B</b>	<i>Extracted:</i>	Apr-16-18 12:00	Apr-16-18 12:00	Apr-16-18 12:00	Apr-16-18 12:00	Apr-16-18 12:00	Apr-16-18 12:00
	<i>Analyzed:</i>	Apr-17-18 04:58	Apr-17-18 06:42	Apr-17-18 07:17	Apr-17-18 07:51	Apr-17-18 08:26	Apr-17-18 09:01
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
Diesel Range Organics (DRO)		<25.2	<25.0	<24.9	740	<25.0	<24.9
Oil Range Hydrocarbons (ORO)		25.2	25.0	24.9	136	25.0	24.9
<b>TPH GRO by EPA 8015 Mod.</b>	<i>Extracted:</i>	Apr-17-18 11:00	Apr-17-18 11:00	Apr-17-18 11:00	Apr-17-18 11:00	Apr-17-18 11:00	Apr-17-18 11:00
	<i>Analyzed:</i>	Apr-18-18 03:07	Apr-17-18 23:57	Apr-18-18 03:34	Apr-18-18 04:01	Apr-18-18 04:28	Apr-18-18 04:55
	<i>Units/RL:</i>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL
TPH-GRO		<3.82	<3.60	<3.97	<3.89	<3.82	<3.86
		3.82	3.60	3.97	3.89	3.82	3.86

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

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

Kelsey Brooks  
Project Manager

## 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      **SQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



# Form 2 - Surrogate Recoveries

Project Name: Albatross State

Work Orders : 582357,

Lab Batch #: 3047041

Sample: 582357-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/18 04:58

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.5	10.1	104	65-144	
n-Triacontane	9.19	10.1	91	46-152	

Lab Batch #: 3047041

Sample: 582357-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/18 06:42

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.3	9.98	103	65-144	
n-Triacontane	8.96	9.98	90	46-152	

Lab Batch #: 3047041

Sample: 582357-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/18 07:17

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.1	9.97	101	65-144	
n-Triacontane	8.82	9.97	88	46-152	

Lab Batch #: 3047041

Sample: 582357-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/18 07:51

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	47.7	10.1	472	65-144	**
n-Triacontane	28.9	10.1	286	46-152	**

Lab Batch #: 3047041

Sample: 582357-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/18 08:26

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.4	9.99	104	65-144	
n-Triacontane	9.92	9.99	99	46-152	

\* 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.



## Form 2 - Surrogate Recoveries

Project Name: Albatross State

Work Orders : 582357,

Lab Batch #: 3047041

Sample: 582357-006 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/18 09:01

### SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Tricosane	10.3	9.96	103	65-144	
n-Triacontane	9.35	9.96	94	46-152	

Lab Batch #: 3047044

Sample: 582357-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/18 23:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.104	0.100	104	68-120	
a,a,a-Trifluorotoluene	1.87	1.80	104	71-121	

Lab Batch #: 3047047

Sample: 582357-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/18 23:57

### SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.102	0.100	102	76-123	
a,a,a-Trifluorotoluene	1.61	1.80	89	69-120	

Lab Batch #: 3047044

Sample: 582357-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 03:07

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.102	0.100	102	68-120	
a,a,a-Trifluorotoluene	1.99	1.91	104	71-121	

Lab Batch #: 3047047

Sample: 582357-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 03:07

### SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.104	0.100	104	76-123	
a,a,a-Trifluorotoluene	1.73	1.91	91	69-120	

\* 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.



## Form 2 - Surrogate Recoveries

Project Name: Albatross State

Work Orders : 582357,

Lab Batch #: 3047044

Sample: 582357-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 03:34

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0979	0.100	98	68-120	
a,a,a-Trifluorotoluene	2.12	1.98	107	71-121	

Lab Batch #: 3047047

Sample: 582357-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 03:34

### SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0966	0.100	97	76-123	
a,a,a-Trifluorotoluene	1.84	1.98	93	69-120	

Lab Batch #: 3047044

Sample: 582357-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 04:01

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0994	0.100	99	68-120	
a,a,a-Trifluorotoluene	1.96	1.95	101	71-121	

Lab Batch #: 3047047

Sample: 582357-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 04:01

### SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.103	0.100	103	76-123	
a,a,a-Trifluorotoluene	1.78	1.95	91	69-120	

Lab Batch #: 3047044

Sample: 582357-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 04:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.101	0.100	101	68-120	
a,a,a-Trifluorotoluene	1.97	1.91	103	71-121	

\* 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.



## Form 2 - Surrogate Recoveries

Project Name: Albatross State

Work Orders : 582357,

Lab Batch #: 3047047

Sample: 582357-005 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 04:28

### SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0992	0.100	99	76-123	
a,a,a-Trifluorotoluene	1.74	1.91	91	69-120	

Lab Batch #: 3047044

Sample: 582357-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 04:55

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0975	0.100	98	68-120	
a,a,a-Trifluorotoluene	1.96	1.93	102	71-121	

Lab Batch #: 3047047

Sample: 582357-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 04:55

### SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0956	0.100	96	76-123	
a,a,a-Trifluorotoluene	1.71	1.93	89	69-120	

Lab Batch #: 3047041

Sample: 7642690-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/18 03:14

### SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.1	10.0	101	65-144	
n-Triacontane	9.40	10.0	94	46-152	

Lab Batch #: 3047044

Sample: 7642835-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/18 23:30

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0876	0.100	88	68-120	
a,a,a-Trifluorotoluene	1.87	2.00	94	71-121	

\* 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.





## Form 2 - Surrogate Recoveries

Project Name: Albatross State

Work Orders : 582357,

Lab Batch #: 3047047

Sample: 7642836-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/18 23:30

### SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0873	0.100	87	76-123	
a,a,a-Trifluorotoluene	2.29	2.00	115	69-120	

Lab Batch #: 3047041

Sample: 7642690-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/18 03:49

### SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	9.67	10.0	97	65-144	
n-Triacontane	8.26	10.0	83	46-152	

Lab Batch #: 3047044

Sample: 7642835-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/18 20:46

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0867	0.100	87	68-120	
a,a,a-Trifluorotoluene	1.64	2.00	82	71-121	

Lab Batch #: 3047047

Sample: 7642836-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/18 21:41

### SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0927	0.100	93	76-123	
a,a,a-Trifluorotoluene	1.69	2.00	85	69-120	

Lab Batch #: 3047041

Sample: 7642690-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/18 04:23

### SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	9.93	10.0	99	65-144	
n-Triacontane	8.21	10.0	82	46-152	

\* 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.



# Form 2 - Surrogate Recoveries

Project Name: Albatross State

Work Orders : 582357,

Lab Batch #: 3047044

Sample: 7642835-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/18 21:14

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0866	0.100	87	68-120	
a,a,a-Trifluorotoluene	1.63	2.00	82	71-121	

Lab Batch #: 3047047

Sample: 7642836-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/17/18 22:08

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0946	0.100	95	76-123	
a,a,a-Trifluorotoluene	1.62	2.00	81	69-120	

Lab Batch #: 3047041

Sample: 582357-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/18 05:33

## SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Tricosane	11.3	9.97	113	65-144	
n-Triacontane	9.31	9.97	93	46-152	

Lab Batch #: 3047044

Sample: 582357-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 00:24

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0955	0.100	96	68-120	
a,a,a-Trifluorotoluene	1.89	1.97	96	71-121	

Lab Batch #: 3047047

Sample: 582357-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 01:18

## SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.101	0.100	101	76-123	
a,a,a-Trifluorotoluene	1.47	1.96	75	69-120	

\* 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.



## Form 2 - Surrogate Recoveries

Project Name: Albatross State

Work Orders : 582357,

Lab Batch #: 3047041

Sample: 582357-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/17/18 06:08

### SURROGATE RECOVERY STUDY

<b>DRO-ORO By SW8015B</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
Tricosane	11.3	10.0	113	65-144	
n-Triacontane	8.94	10.0	89	46-152	

Lab Batch #: 3047044

Sample: 582357-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 00:51

### SURROGATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
4-Bromofluorobenzene	0.0934	0.100	93	68-120	
a,a,a-Trifluorotoluene	1.81	1.90	95	71-121	

Lab Batch #: 3047047

Sample: 582357-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/18/18 01:45

### SURROGATE RECOVERY STUDY

<b>TPH GRO by EPA 8015 Mod.</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
4-Bromofluorobenzene	0.102	0.100	102	76-123	
a,a,a-Trifluorotoluene	1.51	1.95	77	69-120	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# BS / BSD Recoveries



Project Name: Albatross State

Work Order #: 582357

Project ID:

Analyst: MIT

Date Prepared: 04/17/2018

Date Analyzed: 04/17/2018

Lab Batch ID: 3047044

Sample: 7642835-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.0200	2.00	2.25	113	2.00	2.24	112	0	55-120	20	
Toluene	<0.0200	2.00	2.17	109	2.00	2.17	109	0	77-120	20	
Ethylbenzene	<0.0200	2.00	2.17	109	2.00	2.18	109	0	77-120	20	
m,p-Xylenes	<0.0400	4.00	4.36	109	4.00	4.42	111	1	78-120	20	
o-Xylene	<0.0200	2.00	2.17	109	2.00	2.17	109	0	78-120	20	

Analyst: RNL

Date Prepared: 04/16/2018

Date Analyzed: 04/17/2018

Lab Batch ID: 3046901

Sample: 7642786-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<25.0	250	251	100	250	249	100	1	90-110	20	

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

Blank Spike Recovery [D] =  $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



# BS / BSD Recoveries



Project Name: Albatross State

Work Order #: 582357

Project ID:

Analyst: PGM

Date Prepared: 04/16/2018

Date Analyzed: 04/17/2018

Lab Batch ID: 3047041

Sample: 7642690-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Diesel Range Organics (DRO)	<25.0	100	72.3	72	100	74.5	75	3	63-139	20	

Analyst: MIT

Date Prepared: 04/17/2018

Date Analyzed: 04/17/2018

Lab Batch ID: 3047047

Sample: 7642836-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
TPH-GRO	<4.00	20.0	17.8	89	20.0	19.9	100	11	35-129	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: Albatross State

Work Order # : 582357

Project ID:

Lab Batch ID: 3047044

QC- Sample ID: 582357-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/18/2018

Date Prepared: 04/17/2018

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.0197	1.97	2.21	112	1.90	2.08	109	6	54-120	25	
Toluene	<0.0197	1.97	2.27	115	1.90	2.12	112	7	57-120	25	
Ethylbenzene	<0.0197	1.97	2.35	119	1.90	2.22	117	6	58-131	25	
m,p-Xylenes	<0.0394	3.94	4.65	118	3.80	4.41	116	5	62-124	25	
o-Xylene	<0.0197	1.97	2.31	117	1.90	2.18	115	6	62-124	25	

Lab Batch ID: 3046901

QC- Sample ID: 582136-008 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/17/2018

Date Prepared: 04/16/2018

Analyst: RNL

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3880	250	3880	0	250	4100	88	6	80-120	20	X

Lab Batch ID: 3046901

QC- Sample ID: 582357-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/17/2018

Date Prepared: 04/16/2018

Analyst: RNL

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	325	250	510	74	250	550	90	8	80-120	20	X

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

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

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: Albatross State

Work Order # : 582357

Project ID:

Lab Batch ID: 3047041

QC- Sample ID: 582357-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/17/2018

Date Prepared: 04/16/2018

Analyst: PGM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Diesel Range Organics (DRO)	<24.9	99.7	78.6	79	100	77.1	77	2	63-139	20	

Lab Batch ID: 3047047

QC- Sample ID: 582357-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/18/2018

Date Prepared: 04/17/2018

Analyst: MIT

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<3.92	19.6	10.3	53	19.5	11.4	58	10	35-129	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.





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

# CHAIN OF CUSTODY

Page 1 Of 1

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

Phoenix, Arizona (480-355-0900)

www.xenco.com

Client / Reporting Information				Project Information		Analytical Information		Matrix Codes	
Company Name / Branch: TRC Environmental Corporation				Project Name/Number: 288901					
Company Address: 2057 Commerce Drive, Midland, TX 79703				Project Location: Eddy Co, NM					
Email: jlowry@trcsolutions.com				Phone No: 432-468-4460					
Project Contact: Joel Lowry				Invoice To: COG Operating, LLC C/O Becky Haskell					
Sampler's Name: Joel Lowry				Invoice:					
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	NaOH/Acetic	Number of preserved bottles	Field Comments
1	SP-1 @3'	3'	4/10/2018	9:00	S	1			
2	SP-2 @3'	4'	4/10/2018	9:20	S	1			
3	N-2 @1'	1'	4/10/2018	9:40	S	1			
4	S-2 @1'	1'	4/10/2018	10:00	S	1			
5	E-2 @1'	1'	4/10/2018	10:20	S	1			
6	W-2 @1'	1'	4/10/2018	10:40	S	1			
7									
8									
9									
10									
Turnaround Time (Business days)									
<input type="checkbox"/> Same Day TAT <input type="checkbox"/> 5 Day TAT <input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level IV (Full Data Plg /raw data)									
<input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT <input type="checkbox"/> Level III Std QC+ Forms <input type="checkbox"/> TRRP Level IV									
<input type="checkbox"/> 2 Day EMERGENCY <input checked="" type="checkbox"/> Contract TAT <input type="checkbox"/> Level 3 (CLP Forms) <input type="checkbox"/> UST / RG 411									
<input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> TRRP Checklist									
TAT Starts Day received by Lab, if received by 5:00 pm									
FED-EX / UPS: Tracking #									
Relinquished by Sample: 1 Date Time: 4/18/18 14:12 Received By: 2 Date Time: 4/18/18 14:12									
Relinquished by: 3 Date Time: 4/18/18 14:12 Received By: 4 Date Time: 4/18/18 14:12									
Relinquished by: 5 Date Time: 4/18/18 14:12 Received By: 6 Date Time: 4/18/18 14:12									
Notice: Signatures of the 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 not be responsible for any losses or expenses incurred by the client if such losses									



# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In



Client: TRC Solutions, Inc

Date/ Time Received: 04/12/2018 02:12:00 PM

Work Order #: 582357

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR3

### Sample Receipt Checklist

### Comments

#1 *Temperature of cooler(s)?	5.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Ashley Derstine

Date: 04/13/2018

Checklist reviewed by:

Holly Taylor

Date: 04/16/2018

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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised April 3, 2017

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

## Release Notification and Corrective Action

### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: <b>COG Operating, LLC (OGRID# 229137)</b>	Contact: <b>Robert McNeill</b>	
Address: <b>600 West Illinois Avenue, Midland TX 79701</b>	Telephone No.: <b>432-683-7443</b>	
Facility Name: <b>ALBATROSS STATE COM #002H</b>	Facility Type: <b>Wellhead</b>	
Surface Owner: State	Mineral Owner: State	API No.: 30-25-41544

### LOCATION OF RELEASE

Unit Letter B	Section 30	Township 18S	Range 35E	Feet from the 190	North/South Line North	Feet from the 1989	East/West Line East	County Lea
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Latitude: 32.725502 Longitude: -103.4947205 NAD83

### NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 10 bbls Oil	Volume Recovered: 7 bbls Oil
Source of Release: Wellhead	Date and Hour of Occurrence: 1-23-2018	Date and Hour of Discovery: 1-23-2018 9:00 AM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		

**RECEIVED**

**By Olivia Yu at 1:45 pm, Jan 26, 2018**

Describe Cause of Problem and Remedial Action Taken.\*

This release was caused by a valve that was in the wrong position. The valve was placed into the correct position.

Describe Area Affected and Cleanup Action Taken.\*

This release remained on the well pad location. A vacuum truck was dispatched to recover all freestanding fluids. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

### OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Signature:

Printed Name: Dakota Neel

Title: HSE Coordinator

Approval Date:

1/26/2018

Expiration Date:

E-mail Address dneel2@concho.com

Conditions of Approval:

see attached directive

Attached ☒

Date: 1-24-2018

Phone: 575-746-2010

\* Attach Additional Sheets If Necessary

1RP-4944

nOY1802649672

pOY1802650055

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 1/24/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 1RP-4944 has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 1 office in Hobbs on or before 2/26/2018. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

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

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

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

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

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

**Jim Griswold**

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