2057 Commerce Drive
Midland, TX 79703

432.520.7720 PHONE
432.520.7701 FAX

www.trcsolutions.com

August 20, 2018

Mike Bratcher & Maria Pruett
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 2
811 South First Street
Artesia, New Mexico 88210

Shelly Tucker
Bureau of Land Management
620 East Greene Street
Carlsbad, New Mexico 88220

Re: Remediation Summary and Permission to Backfill Request
COG Patron 23 Federal No. 004H (2RP-4665)
GPS: N 32.1217981° W 103.9478047°
Unit Letter "A", Section 23, Township 25 South, Range 29 East
Eddy County, New Mexico

Introduction

TRC Environmental Corporation (TRC), on behalf of Plains Pipeline, LP (Plains) has prepared this Remediation Summary and Permission to Backfill Request for the COG Patron 23 Federal No. 004H Release Site (Release Site). The legal description of the Release Site is Unit Letter "A", Section 23, Township 25 South, Range 29 East, in Eddy County, New Mexico. The GPS coordinates for the Release Site are N 32.1217981° W 103.9478047°. The subject property is own by the United State Department of the Interior and administered by the Bureau of Land Management (BLM). A "Site Location Map" and "Site & Sample Location Map" are provided as Figure 1 and Figure 2, respectively.

On March 9, 2018, a crude oil release occurred on the LACT unit at the COG Patron 23 Federal No. 004H. The release was attributed to operator error while routine maintenance was being conducted. The initial Release Notification and Corrective Action (Form C-141) indicated approximately five (5) barrels (bbls) of crude oil were released within the earthen containment. During initial response activities, the release site was secured and a vacuum truck was utilized to recover approximately four (4) bbls of free standing crude oil. Upon discovering the release, the NMOCD and (BLM) were notified. Please reference the attached Release Notification and Corrective Action (Form C-141) for additional details.

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) did not identify any registered water wells in Section 23, Township 25 South, Range 29 East. The

ChevronTexaco inferred depth to groundwater trend map indicates groundwater should be encountered at approximately two hundred (200) to two hundred and twenty-five (225) feet below ground surface (bgs). Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

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

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

Based on the NMOCD Site Classification criteria, the Release Site soil remediation levels are 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for benzene, toluene, ethylbenzene and xylenes (BTEX), and five thousand (5,000) mg/kg for total petroleum hydrocarbons (TPH).

Remediation Activities Summary

On March 19, 2018, remediation activities commenced at the release site. Impacted soil was excavated and stockpiled on-site, atop an impermeable liner pending final disposition. The floor and sidewalls of the excavation were advanced until field observation suggested TPH and BTEX concentrations were below the NMOCD RRAL

On March 30, 2018, TRC collected five (5) excavation confirmation soil samples (FL, WSW, SSW, NSW and ESW) from the floor and sidewalls of the excavated area and submitted them to Xenco Laboratories of Midland, Texas for analysis of BTEX (Method SW 846-8021B) and TPH (Method SW 846-8015M). Laboratory analytical results indicated benzene concentrations were below the applicable laboratory sample detection limit (SDL) in each of the submitted soil samples. Analytical results indicated BTEX concentrations ranged from less than the applicable laboratory SDL in soil sample WSW to 0.7936 mg/kg in soil sample FL. TPH concentrations ranged from 558.1 mg/kg in soil sample WSW to 23,540 mg/kg in soil sample FL. Soil sample FL was also analyzed for concentrations of chloride (Method 300/300.1), which were determined to be 165 mg/kg. Laboratory analytical results indicated BTEX, TPH and chloride concentrations were below the NMOCD RRAL in each of the analyzed soil samples, with the exception of soil samples FL and SSW, which exhibited TPH concentrations of 23,520 mg/kg and 11,710 mg/kg, respectively. (See attached Figure 2 and Table 1 for sample locations and a summary of laboratory analytical results).

Upon receiving laboratory analytical results, excavation activities resumed at the release site. Impacted soil affected above the NMOCD RRAL in the areas represented by soil samples FL and SSW was excavated and placed into the existing soil stockpile.

On April 30, 2018, TRC collected two (2) excavation confirmation soil samples (SP #1 @ 2' and SSWb) from the floor and sidewall of the excavated area and submitted them to the laboratory for analysis of TPH. Laboratory analytical results indicated soil samples SP #1 @ 2' and SSWb exhibited TPH concentrations of 6,351 mg/kg and 4,432.4 mg/kg, respectively.

Upon receiving laboratory analytical results, excavation activities resumed at the release site. Impacted soil affected above the NMOCD RRAL in the area characterized by soil sample SP #1 @ 2' was excavated and placed into the existing soil stockpile.

On May 21, 2018, TRC collected two (2) excavation confirmation soil samples (FL1b @ 2.5' and SSWc) from the floor and sidewall of the excavated area and submitted them to the laboratory for analysis of TPH. Laboratory analytical results indicated soil samples FL1b @ 2.5' and SSWc exhibited TPH concentrations of 6,332 mg/kg and 2,485.1 mg/kg, respectively.

Upon receiving laboratory analytical results, excavation activities resumed at the release site. Impacted soil affected above the NMOCD RRAL in the area characterized by soil sample FL1b @ 2.5' was excavated and placed into the existing soil stockpile.

On June 20, 2018, TRC collected one (1) excavation confirmation soil sample (FL @ 4') from the floor of the excavated area and submitted it to the laboratory for analysis of TPH concentrations, which were determined to be 7,981 mg/kg. Further advancement of the floor was impracticable due to the congested nature of the facility and the presence of a resilient rock layer.

On July 24, 2018, TRC revisited the release site with a backhoe equipped with a "hammerhoe" attachment. During the site visit, a portion of the floor was excavated to approximately seven (7) ft. bgs. During the excavation of the floor, three (3) delineation soil samples (FL @ 5', FL @ 6' and FL @ 7') were collected and submitted to the laboratory for analysis of TPH. Laboratory analytical results indicated TPH concentrations decline from 11,581.7 mg/kg in soil sample FL @ 5' to 6,595.8 mg/kg in soil sample FL @ 7'.

Permission to Backfill

Based on laboratory analytical results from excavation confirmation soil samples, field activities conducted to date, declining TPH concentrations in delineation soil samples and depth to groundwater (200'-225'), Plains requests NMOCD and BLM permission to backfill the excavated area with locally-sourced, non-impacted caliche. Excavation backfill will be compacted and graded to meet the needs of the production facility.

Impacted soil in the floor of the excavated area adjacent to the LACT unit affected above the NMOCD RRAL for TPH will be further investigated and/or remediated at time of abandonment (TOA). Plains maintains additional excavation of the hard rock layer poses a risk to human health and safety and may result in equipment damage.

Upon completion of backfilling activities, a *Remediation Summary and Risk-Based Site Closure Request* will be prepared detailing field activities and laboratory analytical results from confirmation soil samples. The *Remediation Summary and Risk-Based Site Closure Request* will include a scaled map of impacted soil inferred to be affected above the NMOCD proposed to be addressed at time of abandonment (TOA).

If you have any questions, or need any additional information, please feel free to contact Amber Groves or myself by phone or email.

Respectfully,

Joel Lowry
Senior Project Manager
TRC Environmental Corporation

Curt Stanley
Senior Project Manager
TRC Environmental Corporation

Attachments:

Figure 1 - Site Location Map
Figure 2 - Site & Sample Location Map
Table 1 - Concentrations of Benzene, BTEX, TPH and Chloride in Soil
Laboratory Analytical Results
Photographic Log
Release Notification and Corrective Action (Form C-141)

cc: File

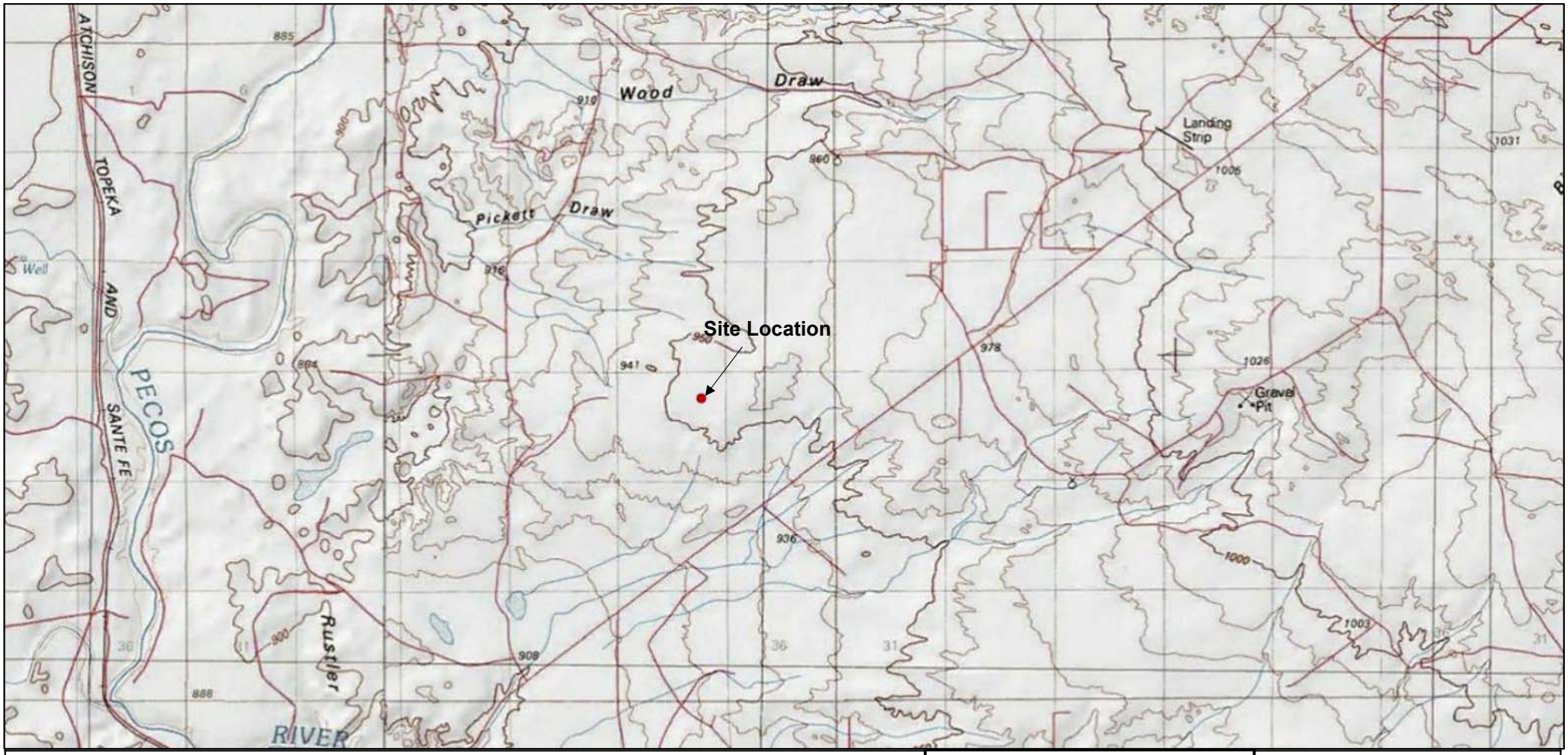


Figure 1

Site Location Map

Plains Pipeline, LP

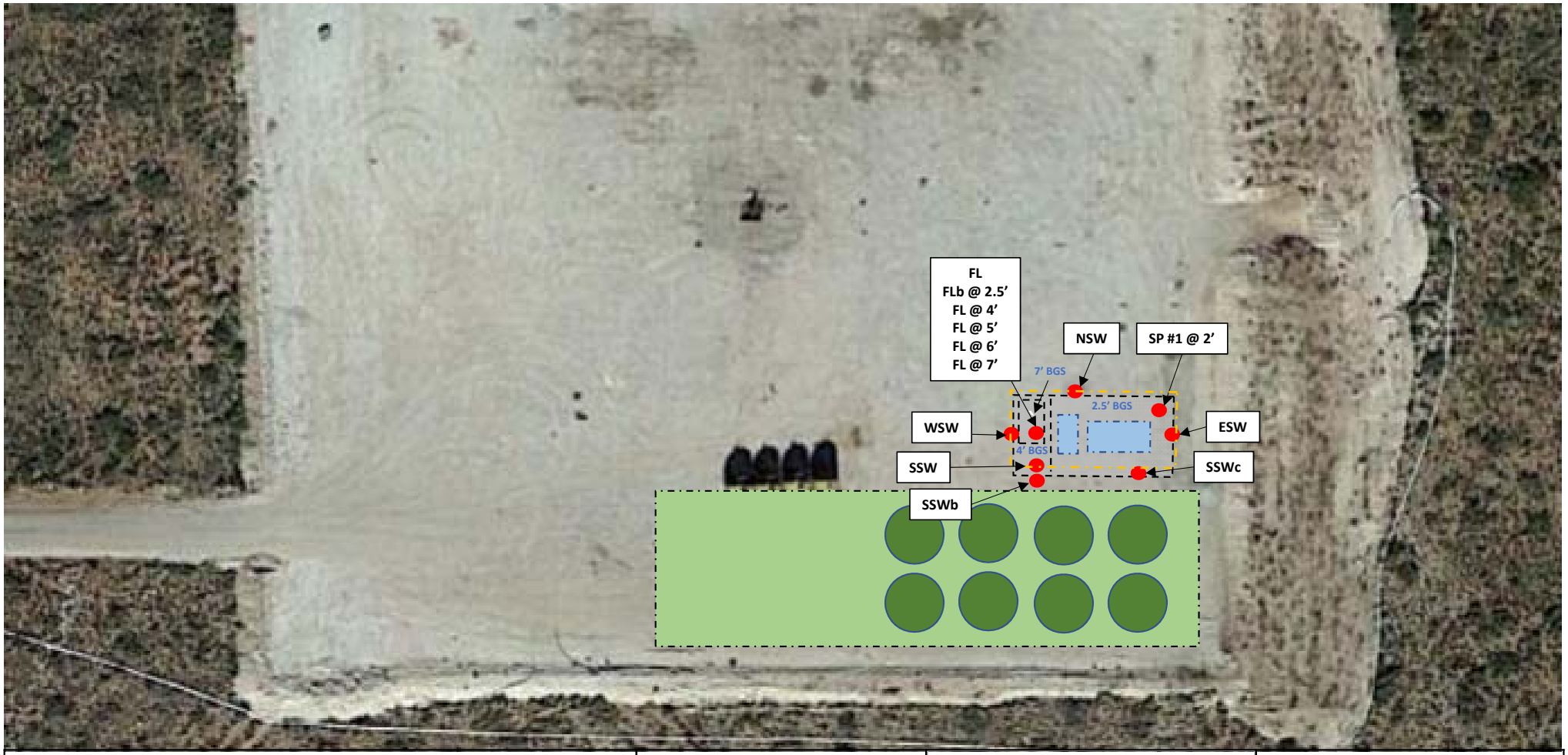
COG Patron 23 Federal No. 004H

Eddy County, New Mexico

Scale 1" = ~7,000'	
Drafted by: ZC	Checked by: JL
Draft: August 1, 2018	
Lat. N 32.1217918 Long. W 103.9478047	
UL "A", Sec. 23, T25S, R29E	
TRC Proj. No.: 300494	

TRC
Results you can rely on

2057 Commerce Drive
Midland, Texas 79703
432.520.7720



LEGEND:

- COG Tank Battery
- Plains LACT Unit
- Excavated Area
- Sample Location Points
- Firewall
- Above-Ground Storage Tank

Figure 2

Site & Sample Location Map

Plains Pipeline, LP

COG Patron 23 Federal No. 004H

Eddy County, New Mexico

Scale 1" = ~60'	
Drafted by: ZC	Checked by: JL
Draft: August 1, 2018	
Lat. N 32.1217918 Long. W -103.9478047	
UL "A", Sec. 23, T25S, R29E	
TRC Proj. No.300494	

TRC
Results you can rely on

2057 Commerce Drive
Midland, Texas 79703
432.520.7720

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH, AND CHLORIDE IN SOIL
COG PATRON 23 FEDERAL No. 004H
PLAINS PIPELINE, L.P.
EDDY COUNTY, NM
NMOCD REF. No. 2RP-4665

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH	STATUS	Methods: EPA SW 846-8021B, 5030					Methods:				Method:
									EPA SW 846-8015M				E300
				BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES, TOTAL (mg/kg)	TOTAL BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TOTAL TPH (mg/kg)	CHLORIDE (mg/kg)
FL	3/30/2018	1'	Excavated	<0.000383	0.0256	0.062	0.706	0.7936	1,480	19,600	2,440	**23,520**	165
WSW	3/30/2018	6"	In-Situ	<0.000386	<0.000457	<0.000566	<0.000345	<0.000345	<7.98	485	73.1	558.1	-
SSW	3/30/2018	6"	Excavated	<0.000383	0.0179	0.0216	0.2364	0.2759	950	9,620	1,140	**11,710**	-
NSW	3/30/2018	6"	In-Situ	<0.000384	<0.000455	<0.000564	0.01305	0.01305	58.7	3,130	465	3,653.7	-
ESW	3/30/2018	6"	In-Situ	<0.000382	0.00225	0.0035	0.02835	0.0341	91.9	743	71.6	906.5	-
SP #1 @ 2'	4/30/2018	2'	Excavated	-	-	-	-	-	296	5,920	135	**6,351**	-
SSWb	4/30/2018	1.5'	In-Situ	-	-	-	-	-	134	4,260	38.4	4,432.4	-
Flb @ 2.5'	5/21/2018	2.5'	Excavated	-	-	-	-	-	180	5,590	562	**6,332**	-
SSWc	5/21/2018	1.5'	In-Situ	-	-	-	-	-	26.1	2,180	279	2,485.1	-
FL @ 4'	6/20/2018	4'	In-Situ	-	-	-	-	-	2,560	4,810	611	**7,981**	-
FL @ 5'	7/24/2018	5'	Excavated	-	-	-	-	-	2,790	8,730	61.7	**11,581.7**	-
FL @ 6'	7/24/2018	6'	Excavated	-	-	-	-	-	1,430	7,720	49.3	**9,199.3**	-
FL @ 7'	7/24/2018	7'	In-Situ	-	-	-	-	-	684	5,870	41.8	**6,595.8**	-
NMOCD Regulatory Guideline				**10**	**-**	**-**	**-**	**50**	**-**	**-**	**-**	**5,000**	**600**

Analytical Report 581096

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Patron #23 004

10-APR-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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)

Table of Contents

10-APR-18

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

Reference: XENCO Report No(s): **581096**
COG Patron #23 004
Project Address:

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) 581096. 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. 581096 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 581096

TRC Solutions, Inc, Midland, TX

COG Patron #23 004

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL	S	03-30-18 09:00	1 ft	581096-001
WSW	S	03-30-18 09:05	6 In	581096-002
SSW	S	03-30-18 09:10	6 In	581096-003
NSW	S	03-30-18 09:15	6 In	581096-004
ESW	S	03-30-18 00:00	In	581096-005

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3045540 TPH by SW8015 Mod
Diesel Range Organics (DRO), Gasoline Range Hydrocarbons (GRO) RPD was outside laboratory control limits.
Samples in the analytical batch are: 581096-001, -002, -003, -004

Batch: LBA-3045650 Inorganic Anions by EPA 300/300.1
E300
Batch 3045650,
Chloride recovered below QC limits in the Blank Spike and Duplicate. Samples in the analytical batch are: 581096-001.

Batch: LBA-3045814 BTEX by EPA 8021
Lab Sample ID 581096-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Benzene, Ethylbenzene, Toluene, m_p-Xylenes , o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 581096-001, -004, -005.
The Laboratory Control Sample for Toluene, Benzene, Ethylbenzene, m_p-Xylenes , o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 581096-001.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: COG Patron #23 004

Project ID:
Work Order Number(s): *581096*

Report Date: *10-APR-18*
Date Received: *04/03/2018*

Batch: LBA-3046139 BTEX by EPA 8021
Lab Sample ID 581096-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Toluene recovered below QC limits in the Matrix Spike. Ethylbenzene, m_p-Xylenes , o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 581096-002, -003.
The Laboratory Control Sample for Toluene, Ethylbenzene, m_p-Xylenes , o-Xylene is within laboratory Control Limits, therefore the data was accepted.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results
581096
TRC Solutions, Inc, Midland, TX
COG Patron #23 004

Sample Id: **FL** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 581096-001 Date Collected: 03.30.18 09.00 Date Received: 04.03.18 10.18

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: OJS % Moist: Tech: OJS

Seq Number: 3045650 Date Prep: 04.03.18 16.45

Prep seq: 7641966

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**165**	4.95	0.850	mg/kg	04.04.18 09:40		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3045540 Date Prep: 04.03.18 14.00

Prep seq: 7641929

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**1480**	150	79.9	mg/kg	04.04.18 09:05	F	10
Diesel Range Organics (DRO)	C10C28DRO	**19600**	150	81.1	mg/kg	04.04.18 09:05	F	10
Oil Range Hydrocarbons (ORO)	PHCG2835	**2440**	150	81.1	mg/kg	04.04.18 09:05		10
Total TPH	PHC635	**23520**		79.9	mg/kg	04.04.18 09:05		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	100	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3045814 Date Prep: 04.05.18 10.00

Prep seq: 7642116

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	04.05.18 19:42	U	1
Toluene	108-88-3	**0.0256**	0.00199	0.000454	mg/kg	04.05.18 19:42		1
Ethylbenzene	100-41-4	**0.0620**	0.00199	0.000563	mg/kg	04.05.18 19:42		1
m_p-Xylenes	179601-23-1	**0.518**	0.00398	0.00101	mg/kg	04.05.18 19:42		1
o-Xylene	95-47-6	**0.188**	0.00199	0.000343	mg/kg	04.05.18 19:42		1
Xylenes, Total	1330-20-7	**0.706**		0.000343	mg/kg	04.05.18 19:42		
Total BTEX		**0.7936**		0.000343	mg/kg	04.05.18 19:42		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	82	70 - 130	%		
4-Bromofluorobenzene	195	70 - 130	%		**

Certificate of Analytical Results
581096
TRC Solutions, Inc, Midland, TX
COG Patron #23 004

Sample Id: **WSW** | Matrix: Soil | Sample Depth: 6 In

Lab Sample Id: 581096-002 | Date Collected: 03.30.18 09.05 | Date Received: 04.03.18 10.18

Analytical Method: TPH by SW8015 Mod | Prep Method: 1005

Analyst: ARM | % Moist: | Tech: ARM

Seq Number: 3045540 | Date Prep: 04.03.18 14.00

Prep seq: 7641929

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.98	15.0	7.98	mg/kg	04.03.18 18:58	UF	1
Diesel Range Organics (DRO)	C10C28DRO	**485**	15.0	8.10	mg/kg	04.03.18 18:58	F	1
Oil Range Hydrocarbons (ORO)	PHCG2835	**73.1**	15.0	8.10	mg/kg	04.03.18 18:58		1
Total TPH	PHC635	**558.1**		7.98	mg/kg	04.03.18 18:58		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	98	70 - 135	%		

Analytical Method: BTEX by EPA 8021 | Prep Method: 5030B

Analyst: ALJ | % Moist: | Tech: ALJ

Seq Number: 3046139 | Date Prep: 04.05.18 16.30

Prep seq: 7642137

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	04.05.18 22:36	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	04.05.18 22:36	UX	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	04.05.18 22:36	UX	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	04.05.18 22:36	UX	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	04.05.18 22:36	UX	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	04.05.18 22:36	U	
Total BTEX		<0.000345		0.000345	mg/kg	04.05.18 22:36	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	89	70 - 130	%		

Certificate of Analytical Results
581096
TRC Solutions, Inc, Midland, TX
COG Patron #23 004

Sample Id: **SSW** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 581096-003 Date Collected: 03.30.18 09.10 Date Received: 04.03.18 10.18

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3045540 Date Prep: 04.03.18 14.00

Prep seq: 7641929

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**950**	74.8	39.9	mg/kg	04.04.18 09:31	F	5
Diesel Range Organics (DRO)	C10C28DRO	**9620**	74.8	40.5	mg/kg	04.04.18 09:31	F	5
Oil Range Hydrocarbons (ORO)	PHCG2835	**1140**	74.8	40.5	mg/kg	04.04.18 09:31		5
Total TPH	PHC635	**11710**		39.9	mg/kg	04.04.18 09:31		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	88	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3046139 Date Prep: 04.05.18 16.30

Prep seq: 7642137

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	04.05.18 22:55	U	1
Toluene	108-88-3	**0.0179**	0.00199	0.000453	mg/kg	04.05.18 22:55		1
Ethylbenzene	100-41-4	**0.0216**	0.00199	0.000561	mg/kg	04.05.18 22:55		1
m_p-Xylenes	179601-23-1	**0.171**	0.00398	0.00101	mg/kg	04.05.18 22:55		1
o-Xylene	95-47-6	**0.0654**	0.00199	0.000342	mg/kg	04.05.18 22:55		1
Xylenes, Total	1330-20-7	**0.2364**		0.000342	mg/kg	04.05.18 22:55		
Total BTEX		**0.2759**		0.000342	mg/kg	04.05.18 22:55		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	75	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		

Certificate of Analytical Results
581096

TRC Solutions, Inc, Midland, TX
COG Patron #23 004

Sample Id: **NSW** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 581096-004 Date Collected: 03.30.18 09.15 Date Received: 04.03.18 10.18

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3045540 Date Prep: 04.03.18 14.00

Prep seq: 7641929

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**58.7**	15.0	8.00	mg/kg	04.03.18 19:44	F	1
Diesel Range Organics (DRO)	C10C28DRO	**3130**	15.0	8.13	mg/kg	04.03.18 19:44	F	1
Oil Range Hydrocarbons (ORO)	PHCG2835	**465**	15.0	8.13	mg/kg	04.03.18 19:44		1
Total TPH	PHC635	**3653.7**		8	mg/kg	04.03.18 19:44		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	84	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3045814 Date Prep: 04.05.18 10.00

Prep seq: 7642116

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	04.05.18 11:38	UX	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	04.05.18 11:38	UX	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	04.05.18 11:38	UX	1
m_p-Xylenes	179601-23-1	**0.00869**	0.00399	0.00101	mg/kg	04.05.18 11:38	X	1
o-Xylene	95-47-6	**0.00436**	0.00200	0.000344	mg/kg	04.05.18 11:38	X	1
Xylenes, Total	1330-20-7	**0.01305**		0.000344	mg/kg	04.05.18 11:38		
Total BTEX		**0.01305**		0.000344	mg/kg	04.05.18 11:38		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	88	70 - 130	%		
4-Bromofluorobenzene	89	70 - 130	%		

Certificate of Analytical Results
581096

TRC Solutions, Inc, Midland, TX
COG Patron #23 004

Sample Id: **ESW** Matrix: Soil Sample Depth:

Lab Sample Id: 581096-005 Date Collected: 03.30.18 00.00 Date Received: 04.03.18 10.18

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3045830 Date Prep: 04.05.18 12.00

Prep seq: 7642101

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**91.9**	15.0	7.99	mg/kg	04.05.18 15:16		1
Diesel Range Organics (DRO)	C10C28DRO	**743**	15.0	8.11	mg/kg	04.05.18 15:16		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**71.6**	15.0	8.11	mg/kg	04.05.18 15:16		1
Total TPH	PHC635	**906.5**		7.99	mg/kg	04.05.18 15:16		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	102	70 - 135	%		
o-Terphenyl	105	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3045814 Date Prep: 04.05.18 10.00

Prep seq: 7642116

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	04.05.18 14:05	U	1
Toluene	108-88-3	**0.00225**	0.00198	0.000452	mg/kg	04.05.18 14:05		1
Ethylbenzene	100-41-4	**0.00350**	0.00198	0.000560	mg/kg	04.05.18 14:05		1
m_p-Xylenes	179601-23-1	**0.0201**	0.00397	0.00101	mg/kg	04.05.18 14:05		1
o-Xylene	95-47-6	**0.00825**	0.00198	0.000342	mg/kg	04.05.18 14:05		1
Xylenes, Total	1330-20-7	**0.02835**		0.000342	mg/kg	04.05.18 14:05		
Total BTEX		**0.0341**		0.000342	mg/kg	04.05.18 14:05		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	74	70 - 130	%		
4-Bromofluorobenzene	100	70 - 130	%		

Certificate of Analytical Results
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TRC Solutions, Inc, Midland, TX
COG Patron #23 004

Sample Id: **7641929-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7641929-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3045540 Date Prep: 04.03.18 09.00

Prep seq: 7641929

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	04.03.18 09:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	04.03.18 09:35	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	04.03.18 09:35	U	1
Total TPH	PHC635	<8		8	mg/kg	04.03.18 09:35	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	88	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Sample Id: **7641966-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7641966-1-BLK Date Collected: Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: OJS % Moist: Tech: OJS

Seq Number: 3045650 Date Prep: 04.03.18 16.45

Prep seq: 7641966

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	04.03.18 21:42	U	1

Certificate of Analytical Results
581096

TRC Solutions, Inc, Midland, TX
COG Patron #23 004

Sample Id: **7642101-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7642101-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3045830 Date Prep: 04.05.18 12.00

Prep seq: 7642101

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	04.05.18 13:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	04.05.18 13:09	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	04.05.18 13:09	U	1
Total TPH	PHC635	<8		8	mg/kg	04.05.18 13:09	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	87	70 - 135	%		

Sample Id: **7642116-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7642116-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3045814 Date Prep: 04.05.18 10.00

Prep seq: 7642116

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	04.05.18 11:19	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	04.05.18 11:19	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	04.05.18 11:19	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	04.05.18 11:19	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	04.05.18 11:19	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	90	70 - 130	%		
4-Bromofluorobenzene	85	70 - 130	%		

Certificate of Analytical Results
581096

TRC Solutions, Inc, Midland, TX
COG Patron #23 004

Sample Id:	**7642137-1-BLK**	Matrix:	Solid	Sample Depth:	
Lab Sample Id:	7642137-1-BLK	Date Collected:		Date Received:	
Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	ALJ	% Moist:		Tech:	ALJ
Seq Number:	3046139	Date Prep:	04.05.18 16.30		
		Prep seq:	7642137		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	04.05.18 22:16	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	04.05.18 22:16	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	04.05.18 22:16	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	04.05.18 22:16	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	04.05.18 22:16	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	84	70 - 130	%		

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP 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: COG Patron #23 004

Work Orders : 581096,

Project ID:

Lab Batch #: 3045814 **Sample:** 7642116-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 09:22

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	70-130	
4-Bromofluorobenzene	0.0314	0.0300	105	70-130	

Lab Batch #: 3045814 **Sample:** 7642116-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 09:42

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	70-130	
4-Bromofluorobenzene	0.0297	0.0300	99	70-130	

Lab Batch #: 3045814 **Sample:** 581096-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 10:01

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	70-130	
4-Bromofluorobenzene	0.0278	0.0300	93	70-130	

Lab Batch #: 3045814 **Sample:** 581096-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 10:20

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	70-130	
4-Bromofluorobenzene	0.0304	0.0300	101	70-130	

Lab Batch #: 3045814 **Sample:** 7642116-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 11:19

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	70-130	
4-Bromofluorobenzene	0.0256	0.0300	85	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG Patron #23 004

Work Orders : 581096,

Project ID:

Lab Batch #: 3046139 **Sample:** 7642137-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 20:21

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	70-130	
4-Bromofluorobenzene	0.0257	0.0300	86	70-130	

Lab Batch #: 3046139 **Sample:** 7642137-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 20:40

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	70-130	
4-Bromofluorobenzene	0.0254	0.0300	85	70-130	

Lab Batch #: 3046139 **Sample:** 581096-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 20:59

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	70-130	
4-Bromofluorobenzene	0.0287	0.0300	96	70-130	

Lab Batch #: 3046139 **Sample:** 581096-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 21:18

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	70-130	
4-Bromofluorobenzene	0.0271	0.0300	90	70-130	

Lab Batch #: 3046139 **Sample:** 7642137-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 22:16

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	70-130	
4-Bromofluorobenzene	0.0252	0.0300	84	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG Patron #23 004

Work Orders : 581096,

Project ID:

Lab Batch #: 3045540 **Sample:** 7641929-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/03/18 09:35

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.3	100	88	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

Lab Batch #: 3045540 **Sample:** 7641929-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/03/18 09:58

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	47.3	50.0	95	70-135	

Lab Batch #: 3045540 **Sample:** 7641929-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/03/18 10:21

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	62.1	50.0	124	70-135	

Lab Batch #: 3045540 **Sample:** 580999-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/03/18 11:42

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.9	104	70-135	
o-Terphenyl	46.0	50.0	92	70-135	

Lab Batch #: 3045540 **Sample:** 580999-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/03/18 12:05

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.3	99.9	93	70-135	
o-Terphenyl	42.6	50.0	85	70-135	

* 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: COG Patron #23 004

Work Orders : 581096,

Project ID:

Lab Batch #: 3045830 **Sample:** 7642101-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 13:09

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.7	100	93	70-135	
o-Terphenyl	43.3	50.0	87	70-135	

Lab Batch #: 3045830 **Sample:** 7642101-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 13:31

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.1	100	97	70-135	
o-Terphenyl	48.5	50.0	97	70-135	

Lab Batch #: 3045830 **Sample:** 7642101-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 13:52

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.2	100	99	70-135	
o-Terphenyl	49.3	50.0	99	70-135	

Lab Batch #: 3045830 **Sample:** 581096-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 15:36

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.8	109	70-135	
o-Terphenyl	53.5	49.9	107	70-135	

Lab Batch #: 3045830 **Sample:** 581096-005 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 15:57

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	47.7	50.0	95	70-135	

* 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: COG Patron #23 004

Work Order #: 581096 **Project ID:**

Analyst: ALJ **Date Prepared:** 04/05/2018 **Date Analyzed:** 04/05/2018

Lab Batch ID: 3045814 **Sample:** 7642116-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	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
Benzene	<0.000386	0.100	0.127	127	0.101	0.120	119	6	70-130	35	
Toluene	<0.000457	0.100	0.120	120	0.101	0.113	112	6	70-130	35	
Ethylbenzene	<0.000567	0.100	0.115	115	0.101	0.108	107	6	70-130	35	
m_p-Xylenes	<0.00102	0.201	0.238	118	0.202	0.223	110	7	70-130	35	
o-Xylene	<0.000346	0.100	0.117	117	0.101	0.111	110	5	70-130	35	

Analyst: ALJ **Date Prepared:** 04/05/2018 **Date Analyzed:** 04/05/2018

Lab Batch ID: 3046139 **Sample:** 7642137-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	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
Benzene	<0.000386	0.100	0.122	122	0.0998	0.115	115	6	70-130	35	
Toluene	<0.000457	0.100	0.116	116	0.0998	0.109	109	6	70-130	35	
Ethylbenzene	<0.000567	0.100	0.111	111	0.0998	0.104	104	7	70-130	35	
m_p-Xylenes	<0.00102	0.201	0.229	114	0.200	0.213	107	7	70-130	35	
o-Xylene	<0.000346	0.100	0.115	115	0.0998	0.107	107	7	70-130	35	

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: COG Patron #23 004

Work Order #: 581096 **Project ID:**

Analyst: OJS **Date Prepared:** 04/03/2018 **Date Analyzed:** 04/03/2018

Lab Batch ID: 3045650 **Sample:** 7641966-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	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
Chloride	<0.858	250	241	96	250	236	94	2	90-110	20	

Analyst: ARM **Date Prepared:** 04/03/2018 **Date Analyzed:** 04/03/2018

Lab Batch ID: 3045540 **Sample:** 7641929-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	901	90	1000	1150	115	24	70-135	20	F
Diesel Range Organics (DRO)	<8.13	1000	942	94	1000	1190	119	23	70-135	20	F

Analyst: ARM **Date Prepared:** 04/05/2018 **Date Analyzed:** 04/05/2018

Lab Batch ID: 3045830 **Sample:** 7642101-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	859	86	1000	897	90	4	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	910	91	1000	951	95	4	70-135	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: COG Patron #23 004

Work Order # : 581096 **Project ID:**

Lab Batch ID: 3045814 **QC- Sample ID:** 581096-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/05/2018 **Date Prepared:** 04/05/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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	<0.000388	0.101	0.0537	53	0.0994	0.0583	59	8	70-130	35	X
Toluene	<0.000459	0.101	0.0365	36	0.0994	0.0414	42	13	70-130	35	X
Ethylbenzene	<0.000569	0.101	0.0248	25	0.0994	0.0327	33	27	70-130	35	X
m_p-Xylenes	0.00869	0.202	0.0597	25	0.199	0.0707	31	17	70-130	35	X
o-Xylene	0.00436	0.101	0.0315	27	0.0994	0.0399	36	24	70-130	35	X

Lab Batch ID: 3046139 **QC- Sample ID:** 581096-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/05/2018 **Date Prepared:** 04/05/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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	<0.000386	0.100	0.0822	82	0.0996	0.0869	87	6	70-130	35	
Toluene	<0.000457	0.100	0.0609	61	0.0996	0.0705	71	15	70-130	35	X
Ethylbenzene	<0.000566	0.100	0.0434	43	0.0996	0.0553	56	24	70-130	35	X
m_p-Xylenes	<0.00102	0.200	0.0869	43	0.199	0.111	56	24	70-130	35	X
o-Xylene	<0.000345	0.100	0.0449	45	0.0996	0.0578	58	25	70-130	35	X

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: COG Patron #23 004

Work Order # : 581096 **Project ID:**

Lab Batch ID: 3045650 **QC- Sample ID:** 581087-014 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/03/2018 **Date Prepared:** 04/03/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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	264	250	504	96	250	514	100	2	90-110	20	

Lab Batch ID: 3045650 **QC- Sample ID:** 581087-017 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/03/2018 **Date Prepared:** 04/03/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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	41.0	250	283	97	250	280	96	1	90-110	20	

Lab Batch ID: 3045540 **QC- Sample ID:** 580999-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/03/2018 **Date Prepared:** 04/03/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 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
Gasoline Range Hydrocarbons (GRO)	<7.99	999	1020	102	999	926	93	10	70-135	20	
Diesel Range Organics (DRO)	12.7	999	1100	109	999	1040	103	6	70-135	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

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

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: COG Patron #23 004

Work Order # : 581096 **Project ID:**

Lab Batch ID: 3045830 **QC- Sample ID:** 581096-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/05/2018 **Date Prepared:** 04/05/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 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
Gasoline Range Hydrocarbons (GRO)	91.9	998	1020	93	1000	990	90	3	70-135	20	
Diesel Range Organics (DRO)	743	998	1860	112	1000	1880	114	1	70-135	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

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

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.

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES
Setting the Standard since 1990

Stafford,Texas (281-240-4200)
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San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote #
Xenco Job # 581096

Client / Reporting Information

Company Name / Branch: TRC Environmental
Company Address: 2057 Commerce Drive, Midland, TX 79703
Email: jlowry@trcsolutions.com
Phone No:
Project Contact: Joel Lowry
Samplers's Name Joel Lowry

Project Information

Project Name/Number: COG PATRON #23 0084
Project Location:
Invoice To: PLAINS PIPELINE C/O CAMILLE BRYANT
Invoice: SRS No. Pending

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH 8015	BTEX 8021	Chloride	Field Comments
1	FL	1'	3/30/18	9:00	S	1									X	X	X	
2	WSW	6"	3/30/18	9:05	S	1									X	X		
3	SSW	6"	3/30/18	9:10	S	1									X	X		
4	NSW	6"	3/30/18	9:15	S	1									X	X		
5	ESW																	
6																		
7																		
8																		
9																		
10																		

Temp: .3 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: .1

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

JLOWRY@TRCSOLUTIONS.COM
CSBRYANT@PAALP.COM
ALGROVES@PAALP.COM
SDSTANLEY@TRCSOLUTIONS.COM

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		4/2/18 3:15				
2					4/2/18 3:15	
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						4/3/18 10:18
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						X -0.4

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 04/03/2018 10:18:00 AM

Work Order #: 581096

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 04/03/2018

Checklist reviewed by: Jessica Kramer Date: 04/04/2018

Analytical Report 585256

for

TRC Solutions, Inc

Project Manager: Joel Lowry

Plains COL Patron 230047R

11-MAY-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), 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)

Table of Contents

11-MAY-18

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

Reference: XENCO Report No(s): **585256**
Plains COL Patron 230047R
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) 585256. 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. 585256 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 585256

TRC Solutions, Inc, Midland, TX

Plains COL Patron 230047R

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP #1 @2'	S	04-30-18 17:05	2 ft	585256-001
SSWb	S	04-30-18 11:30	1 ft	585256-002

CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: Plains COL Patron 230047R

Project ID:
Work Order Number(s): *585256*

Report Date: *11-MAY-18*
Date Received: *05/08/2018*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results
585256

TRC Solutions, Inc, Midland, TX
Plains COL Patron 230047R

Sample Id: **SP #1 @2'** Matrix: Soil Sample Depth: 2 ft

Lab Sample Id: 585256-001 Date Collected: 04.30.18 17.05 Date Received: 05.08.18 10.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3049423 Date Prep: 05.08.18 16.00

Prep seq: 7644346

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**296**	74.9	39.9	mg/kg	05.09.18 07:11		5
Diesel Range Organics (DRO)	C10C28DRO	**5920**	74.9	40.6	mg/kg	05.09.18 07:11		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**135**	74.9	40.6	mg/kg	05.09.18 07:11		5
Total TPH	PHC635	**6351**		39.9	mg/kg	05.09.18 07:11		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	99	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Sample Id: **SSWb** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 585256-002 Date Collected: 04.30.18 11.30 Date Received: 05.08.18 10.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3049423 Date Prep: 05.08.18 16.00

Prep seq: 7644346

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**134**	14.9	7.97	mg/kg	05.09.18 06:01		1
Diesel Range Organics (DRO)	C10C28DRO	**4260**	14.9	8.10	mg/kg	05.09.18 06:01		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**38.4**	14.9	8.10	mg/kg	05.09.18 06:01		1
Total TPH	PHC635	**4432.4**		7.97	mg/kg	05.09.18 06:01		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	107	70 - 135	%		
o-Terphenyl	124	70 - 135	%		

Certificate of Analytical Results
585256

TRC Solutions, Inc, Midland, TX
Plains COL Patron 230047R

Sample Id: **7644346-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7644346-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3049423 Date Prep: 05.08.18 16.00

Prep seq: 7644346

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	05.08.18 20:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	05.08.18 20:41	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	05.08.18 20:41	U	1
Total TPH	PHC635	<8		8	mg/kg	05.08.18 20:41	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	83	70 - 135	%		
o-Terphenyl	87	70 - 135	%		

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP 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: Plains COL Patron 230047R

Work Orders : 585256,

Project ID:

Lab Batch #: 3049423 **Sample:** 7644346-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/08/18 20:41

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.8	100	83	70-135	
o-Terphenyl	43.4	50.0	87	70-135	

Lab Batch #: 3049423 **Sample:** 7644346-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/08/18 21:08

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	47.8	50.0	96	70-135	

Lab Batch #: 3049423 **Sample:** 7644346-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/08/18 21:35

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	49.2	50.0	98	70-135	

Lab Batch #: 3049423 **Sample:** 585093-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/08/18 22:28

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.1	99.8	98	70-135	
o-Terphenyl	50.4	49.9	101	70-135	

Lab Batch #: 3049423 **Sample:** 585093-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/08/18 22:55

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.3	99.9	99	70-135	
o-Terphenyl	48.9	50.0	98	70-135	

* 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: Plains COL Patron 230047R

Work Order #: 585256 **Project ID:**

Analyst: ARM **Date Prepared:** 05/08/2018 **Date Analyzed:** 05/08/2018

Lab Batch ID: 3049423 **Sample:** 7644346-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	924	92	1000	946	95	2	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1020	102	1000	1050	105	3	70-135	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: Plains COL Patron 230047R

Work Order # : 585256 **Project ID:**

Lab Batch ID: 3049423 **QC- Sample ID:** 585093-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/08/2018 **Date Prepared:** 05/08/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 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
Gasoline Range Hydrocarbons (GRO)	<7.99	998	912	91	999	929	93	2	70-135	20	
Diesel Range Organics (DRO)	<8.11	998	1020	102	999	1030	103	1	70-135	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

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

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.

XENCO LABORATORIES
Setting the Standard since 1990

CHAIN OF CUSTODY

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Job # 585256

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 10 Desta Drive, Suite 150E, Midland, TX, 79705
Email: jlowry@trcsolutions.com
Phone No: 432-466-4450
Project Contact: Joel Lowry
Samplers's Name Joel Lowry

Project Information

Project Name/Number: Plains COL Patron 23004TR
Project Location: Eddy Co, NM
Invoice To: Plains Pipeline C/O Amber Groves 2018-050
Invoice:

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Sample Depth	Date (Collection)	Time (Collection)	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	SP#1 @ 2'	2'	4/30/18	17:05	S	1									✓				
2	SSW6	1'	4/30/18	11:30	1	1									X				
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Temp: 1.2 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 1.0

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:
jlowry@trcsolutions.com
zconder@trcsolutions.com
kblackburn@trcsolutions.com

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By
1 Relinquished by Sampler: Joel Lowry		1 [signature]	2		2
3 Relinquished by: [signature]	5/7/18 3:45	3 Esperanza Gonzalez	4 Esperanza Gonzalez	5/7/18 4:38	4 [signature] 5/8/18 10:30
5 Relinquished by:	Date Time:	5 Received By:	Custody Seal #	Preserved where applicable	On Ice; Cooler Temp. 0.6; Thermo. Corr. Factor

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 05/08/2018 10:30:00 AM

Work Order #: 585256

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1
#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: Katie Lowe Date: 05/08/2018

Checklist reviewed by: Kelsey Brooks Date: 05/09/2018

Analytical Report 586899

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Patron 23004 TR

30-MAY-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), 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)

30-MAY-18

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

Reference: XENCO Report No(s): **586899**
COG Patron 23004 TR
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) 586899. 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. 586899 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 586899

TRC Solutions, Inc, Midland, TX

COG Patron 23004 TR

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Flb @ 2.5'	S	05-21-18 14:35	2.5 ft	586899-001
SSWc	S	05-21-18 14:40	1.5 ft	586899-002

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3051227 TPH GRO by EPA 8015 Mod.
Lab Sample ID 586899-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). TPH-GRO recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 586899-001, -002.
The Laboratory Control Sample for TPH-GRO is within laboratory Control Limits, therefore the data was accepted.

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 586899-002 S,586899-002 SD.

Batch: LBA-3051420 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: 586899-001,586899-002.

Certificate of Analysis Summary 586899

TRC Solutions, Inc, Midland, TX

Project Name: COG Patron 23004 TR

Project Id:

Contact: Joel Lowry

Project Location: Eddy Co. NM

Date Received in Lab: Tue May-22-18 05:25 pm

Report Date: 30-MAY-18

Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	586899-001		586899-002					
	Field Id:	Flb @ 2.5'		SSWc					
	Depth:	2.5- ft		1.5- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	May-21-18 14:35		May-21-18 14:40					
DRO-ORO By SW8015B	***Extracted:***	May-24-18 13:00		May-24-18 13:00					
	Analyzed:	May-25-18 14:23		May-25-18 13:06					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Diesel Range Organics (DRO)		5590	126	2180	25.0				
Oil Range Hydrocarbons (ORO)		562	126	279	25.0				
TPH GRO by EPA 8015 Mod.	***Extracted:***	May-23-18 13:30		May-23-18 13:30					
	Analyzed:	May-24-18 00:04		May-24-18 00:31					
	Units/RL:	mg/kg	RL	mg/kg	RL				
TPH-GRO		180	18.2	26.1	7.98				

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 **MQL** 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: COG Patron 23004 TR

Work Orders : 586899,

Project ID:

Lab Batch #: 3051227 **Sample:** 586899-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/24/18 00:04

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	0.106	0.100	106	76-123	
a,a,a-Trifluorotoluene	8.97	9.11	98	69-120	

Lab Batch #: 3051227 **Sample:** 586899-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/24/18 00:31

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	0.0958	0.100	96	76-123	
a,a,a-Trifluorotoluene	3.26	3.99	82	69-120	

Lab Batch #: 3051420 **Sample:** 586899-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/18 13:06

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	103	10.0	1030	65-144	**
n-Triacontane	61.1	10.0	611	46-152	**

Lab Batch #: 3051420 **Sample:** 586899-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/18 14:23

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	206	10.1	2040	65-144	**
n-Triacontane	97.0	10.1	960	46-152	**

Lab Batch #: 3051227 **Sample:** 7645310-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/23/18 22:43

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	0.0900	0.100	90	76-123	
a,a,a-Trifluorotoluene	2.32	2.00	116	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: COG Patron 23004 TR

Work Orders : 586899,

Project ID:

Lab Batch #: 3051420 **Sample:** 7645393-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/24/18 19:41

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	9.44	10.0	94	65-144	
n-Triacontane	7.23	10.0	72	46-152	

Lab Batch #: 3051227 **Sample:** 7645310-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/23/18 20:54

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	0.104	0.100	104	76-123	
a,a,a-Trifluorotoluene	1.75	2.00	88	69-120	

Lab Batch #: 3051420 **Sample:** 7645393-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/24/18 20:18

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.2	10.0	102	65-144	
n-Triacontane	6.65	10.0	67	46-152	

Lab Batch #: 3051227 **Sample:** 7645310-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/23/18 21:22

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	0.0975	0.100	98	76-123	
a,a,a-Trifluorotoluene	1.71	2.00	86	69-120	

Lab Batch #: 3051420 **Sample:** 7645393-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/24/18 20:59

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	8.88	10.0	89	65-144	
n-Triacontane	5.67	10.0	57	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: COG Patron 23004 TR

Work Orders : 586899,

Project ID:

Lab Batch #: 3051227 **Sample:** 586899-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/24/18 00:58

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	0.148	0.100	148	76-123	**
a,a,a-Trifluorotoluene	2.88	3.64	79	69-120	

Lab Batch #: 3051420 **Sample:** 586895-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/18 11:14

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	13.6	10.0	136	65-144	
n-Triacontane	10.0	10.0	100	46-152	

Lab Batch #: 3051227 **Sample:** 586899-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/24/18 01:25

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	0.138	0.100	138	76-123	**
a,a,a-Trifluorotoluene	2.74	3.64	75	69-120	

Lab Batch #: 3051420 **Sample:** 586895-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/18 11:50

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	12.7	10.1	126	65-144	
n-Triacontane	9.29	10.1	92	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.

BS / BSD Recoveries

Project Name: COG Patron 23004 TR

Work Order #: 586899 **Project ID:**

Analyst: PGM **Date Prepared:** 05/24/2018 **Date Analyzed:** 05/24/2018

Lab Batch ID: 3051420 **Sample:** 7645393-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	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
Diesel Range Organics (DRO)	<25.0	100	88.7	89	100	88.0	88	1	63-139	20	

Analyst: MIT **Date Prepared:** 05/23/2018 **Date Analyzed:** 05/23/2018

Lab Batch ID: 3051227 **Sample:** 7645310-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	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
TPH-GRO	<4.00	20.0	21.7	109	20.0	21.4	107	1	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: COG Patron 23004 TR

Work Order # : 586899 **Project ID:**

Lab Batch ID: 3051420 **QC- Sample ID:** 586895-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/25/2018 **Date Prepared:** 05/24/2018 **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)	<25.1	100	104	104	101	100	99	4	63-139	20	

Lab Batch ID: 3051227 **QC- Sample ID:** 586899-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/24/2018 **Date Prepared:** 05/23/2018 **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	26.1	36.4	33.8	21	36.4	33.9	21	0	35-129	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

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

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.

CHAIN OF CUSTODY

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586899

Xenco Quote # | Xenco Job # 586899

Client / Reporting Information

Company Name / Branch: TRC Environmental
Company Address: 2057 Commerce Drive, Midland, TX 79703
Email: jlowry@trcsolutions.com
Phone No:
Project Contact: Joel Lowry
Samplers's Name Joel Lowry

Project Information

Project Name/Number: COG Patron 23004 TR
Project Location: Eddy Co, NM
Invoice To: Plains Pipeline C/O Camille Bryant
Invoice: SRS 2018-050

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH 8015 M Ext	Field Comments
1	FLb @ 2.5'	2.5'	5/21/2018	2:35	S	1									1	1
2	SSWc	1.5'	5/21/2018	2:40	S	1									1	2
3																
4																
5																
6																
7																
8																
9																
10																

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

Email Camille Bryant and Joel Lowry
algrove, zconder

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Joel Lowry	5/22 10:00	1	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time: 5/22/18 5:25	Received By: 5 Brenda Ward	Custody Seal #	Preserved where applicable: [ ]	On Ice: [X] Cooler Temp. 3.9 Thermo. Corr. Factor IR 3

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 05/22/2018 05:25:00 PM

Work Order #: 586899

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)?	3.9
#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: Brenda Ward Date: 05/23/2018
Brenda Ward

Checklist reviewed by: Kelsey Brooks Date: 05/24/2018
Kelsey Brooks

Analytical Report 590232

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Patron 23004 TR

28-JUN-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), 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 (T104704400-18-15)
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)

Table of Contents

28-JUN-18

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

Reference: XENCO Report No(s): **590232**
COG Patron 23004 TR
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) 590232. 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. 590232 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 590232

TRC Solutions, Inc, Midland, TX

COG Patron 23004 TR

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL @ 4'	S	06-20-18 11:00		590232-001

CASE NARRATIVE

Client Name: TRC Solutions, Inc
Project Name: COG Patron 23004 TR

Project ID:
Work Order Number(s): *590232*

Report Date: *28-JUN-18*
Date Received: *06/22/2018*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3054675 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: 590232-001.

Batch: LBA-3054678 TPH GRO by EPA 8015 Mod.
Surrogate 4-Bromofluorobenzene recovered below QC limits Data confirmed by re-analysis. Samples affected are: 7657348-1-BLK,590232-001.

TPH-GRO Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.
Samples in the analytical batch are: 590232-001

Lab Sample ID 590232-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). TPH-GRO recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 590232-001.
The Laboratory Control Sample for TPH-GRO is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results
590232

TRC Solutions, Inc, Midland, TX
COG Patron 23004 TR

Sample Id: **FL @ 4'** Matrix: Soil Sample Depth:

Lab Sample Id: 590232-001 Date Collected: 06.20.18 11.00 Date Received: 06.22.18 15.00

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3054675 Date Prep: 06.26.18 13.30

Prep seq: 7657369

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**4810**	249	74.5	mg/kg	06.27.18 05:29		10
Oil Range Hydrocarbons (ORO)	PHCG2835	**611**	249	74.5	mg/kg	06.27.18 05:29		10

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	1697	65 - 144	%		**
n-Triacontane	1024	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3054678 Date Prep: 06.26.18 14.00

Prep seq: 7657348

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**2560**	1990	135	mg/kg	06.26.18 19:04	XF	9940

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	74	76 - 123	%		***
a,a,a-Trifluorotoluene	88	69 - 120	%		

Certificate of Analytical Results
590232

TRC Solutions, Inc, Midland, TX
COG Patron 23004 TR

Sample Id: **7657348-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7657348-1-BLK Date Collected: Date Received:

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3054678 Date Prep: 06.26.18 14.00

Prep seq: 7657348

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.271	4.00	0.271	mg/kg	06.26.18 18:36	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	72	76 - 123	%		**
a,a,a-Trifluorotoluene	101	69 - 120	%		

Sample Id: **7657369-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7657369-1-BLK Date Collected: Date Received:

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3054675 Date Prep: 06.26.18 13.30

Prep seq: 7657369

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.48	25.0	7.48	mg/kg	06.26.18 17:32	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.48	25.0	7.48	mg/kg	06.26.18 17:32	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	85	65 - 144	%		
n-Triacontane	79	46 - 152	%		

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP 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: COG Patron 23004 TR

Work Orders : 590232, **Project ID:**

Lab Batch #: 3054675 **Sample:** 7657369-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/26/18 17:32

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	8.49	10.0	85	65-144	
n-Triacontane	7.93	10.0	79	46-152	

Lab Batch #: 3054675 **Sample:** 7657369-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/26/18 18:11

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.8	10.0	108	65-144	
n-Triacontane	7.89	10.0	79	46-152	

Lab Batch #: 3054675 **Sample:** 7657369-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/26/18 18:51

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.7	10.0	107	65-144	
n-Triacontane	8.47	10.0	85	46-152	

Lab Batch #: 3054675 **Sample:** 590084-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/26/18 20:46

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.2	10.0	112	65-144	
n-Triacontane	10.0	10.0	100	46-152	

Lab Batch #: 3054675 **Sample:** 590084-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/26/18 21:22

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.0	10.0	110	65-144	
n-Triacontane	9.17	10.0	92	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: COG Patron 23004 TR

Work Orders : 590232,

Project ID:

Lab Batch #: 3054678 **Sample:** 7657348-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/26/18 16:45

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	1.07	0.100	1070	76-123	**
a,a,a-Trifluorotoluene	1.81	2.00	91	69-120	

Lab Batch #: 3054678 **Sample:** 7657348-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/26/18 17:13

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.107	0.100	107	76-123	
a,a,a-Trifluorotoluene	1.84	2.00	92	69-120	

Lab Batch #: 3054678 **Sample:** 7657348-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/26/18 18:36

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0721	0.100	72	76-123	**
a,a,a-Trifluorotoluene	2.01	2.00	101	69-120	

Lab Batch #: 3054678 **Sample:** 590232-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/26/18 19:31

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0815	0.100	82	76-123	
a,a,a-Trifluorotoluene	892	963	93	69-120	

Lab Batch #: 3054678 **Sample:** 590232-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/26/18 19:58

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.112	0.100	112	76-123	
a,a,a-Trifluorotoluene	974	975	100	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: COG Patron 23004 TR

Work Order #: 590232 **Project ID:**

Analyst: PGM **Date Prepared:** 06/26/2018 **Date Analyzed:** 06/26/2018

Lab Batch ID: 3054675 **Sample:** 7657369-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	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
Diesel Range Organics (DRO)	<7.48	100	105	105	100	98.1	98	7	63-139	20	

Analyst: MIT **Date Prepared:** 06/26/2018 **Date Analyzed:** 06/26/2018

Lab Batch ID: 3054678 **Sample:** 7657348-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	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
TPH-GRO	<0.271	20.0	22.5	113	20.0	22.3	112	1	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: COG Patron 23004 TR

Work Order # : 590232 **Project ID:**

Lab Batch ID: 3054675 **QC- Sample ID:** 590084-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/26/2018 **Date Prepared:** 06/26/2018 **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)	<7.50	100	88.1	88	100	91.9	92	4	63-139	20	

Lab Batch ID: 3054678 **QC- Sample ID:** 590232-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/26/2018 **Date Prepared:** 06/26/2018 **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	2560	9630	3570	10	9750	2170	0	49	35-129	20	XF

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

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

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.

CHAIN OF CUSTODY

XENCO LABORATORIES

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)
Phoenix, Arizona (480-355-0900)
www.xenco.com

590232

Xenco Quote #

Xenco Job # 590232

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 10 Desta Dr. Suite 150E, Midland, TX 79705
Email: jlowry@trcsolutions.com
Phone No: 432-466-4450
Project Contact: Joel Lowry
Samplers's Name:

Project Information

Project Name/Number: COG Patron 23004TR
Project Location: Eddy Co, NM
Invoice To: Plains Marketing c/o Amber Groves
Invoice:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 MEXT	Chloride E 300	BTEX 8021B	Field Comments
1	FL @ 4'	4'	6/20/2018	11:00	S	1									X			
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

jlowry@trcsolutions.com
zconder@trcsolutions.com
bcooper@trcsolutions.com
algroves@paalp.com
FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		1	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
5		5			4.7

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 06/22/2018 03:00:00 PM

Work Order #: 590232

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)?	4.7
#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: Brenda Ward Date: 06/24/2018

Checklist reviewed by: Kelsey Brooks Date: 06/25/2018

Analytical Report 593653

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Patron

30-JUL-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), 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 (T104704400-18-15)
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)

Table of Contents

30-JUL-18

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

Reference: XENCO Report No(s): **593653**
COG Patron
Project Address: Eddy County, 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) 593653. 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. 593653 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 593653

TRC Solutions, Inc, Midland, TX

COG Patron

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL @ 5'	S	07-24-18 10:00	5 ft	593653-001
FL @ 6'	S	07-24-18 10:30	6 ft	593653-002
FL @ 7'	S	07-24-18 11:00	7 ft	593653-003

CASE NARRATIVE

Client Name: TRC Solutions, Inc
Project Name: COG Patron

Project ID:
Work Order Number(s): *593653*

Report Date: *30-JUL-18*
Date Received: *07/26/2018*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results
593653
TRC Solutions, Inc, Midland, TX
COG Patron

Sample Id: **FL @ 5'** Matrix: Soil Sample Depth: 5 ft

Lab Sample Id: 593653-001 Date Collected: 07.24.18 10.00 Date Received: 07.26.18 11.20

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3057935 Date Prep: 07.26.18 17.00

Prep seq: 7659211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**2790**	75.0	40.0	mg/kg	07.27.18 08:18		5
Diesel Range Organics (DRO)	C10C28DRO	**8730**	75.0	40.6	mg/kg	07.27.18 08:18		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**61.7**	75.0	40.6	mg/kg	07.27.18 08:18	J	5
Total TPH	PHC635	**11581.7**		40	mg/kg	07.27.18 08:18		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	125	70 - 135	%		
o-Terphenyl	99	70 - 135	%		

Sample Id: **FL @ 6'** Matrix: Soil Sample Depth: 6 ft

Lab Sample Id: 593653-002 Date Collected: 07.24.18 10.30 Date Received: 07.26.18 11.20

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3057935 Date Prep: 07.26.18 17.00

Prep seq: 7659211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**1430**	74.7	39.9	mg/kg	07.27.18 08:38		5
Diesel Range Organics (DRO)	C10C28DRO	**7720**	74.7	40.5	mg/kg	07.27.18 08:38		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**49.3**	74.7	40.5	mg/kg	07.27.18 08:38	J	5
Total TPH	PHC635	**9199.3**		39.9	mg/kg	07.27.18 08:38		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	117	70 - 135	%		
o-Terphenyl	91	70 - 135	%		

Certificate of Analytical Results
593653

TRC Solutions, Inc, Midland, TX
COG Patron

Sample Id:	**FL @ 7'**	Matrix:	Soil	Sample Depth:	7 ft
Lab Sample Id:	593653-003	Date Collected:	07.24.18 11.00	Date Received:	07.26.18 11.20
Analytical Method:	TPH by SW8015 Mod			Prep Method:	1005
Analyst:	ARM	% Moist:		Tech:	ARM
Seq Number:	3057935	Date Prep:	07.26.18 17.00		
		Prep seq:	7659211		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**684**	75.0	40.0	mg/kg	07.27.18 08:58		5
Diesel Range Organics (DRO)	C10C28DRO	**5870**	75.0	40.6	mg/kg	07.27.18 08:58		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**41.8**	75.0	40.6	mg/kg	07.27.18 08:58	J	5
Total TPH	PHC635	**6595.8**		40	mg/kg	07.27.18 08:58		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	127	70 - 135	%		
o-Terphenyl	116	70 - 135	%		

Certificate of Analytical Results
593653

TRC Solutions, Inc, Midland, TX
COG Patron

Sample Id: **7659211-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7659211-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3057935 Date Prep: 07.26.18 17.00

Prep seq: 7659211

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	07.26.18 20:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	07.26.18 20:47	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	07.26.18 20:47	U	1
Total TPH	PHC635	<8		8	mg/kg	07.26.18 20:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	97	70 - 135	%		

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP 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: COG Patron

Work Orders : 593653,

Project ID:

Lab Batch #: 3057935 **Sample:** 7659211-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/26/18 20:47

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.7	100	93	70-135	
o-Terphenyl	48.6	50.0	97	70-135	

Lab Batch #: 3057935 **Sample:** 7659211-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/26/18 21:07

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	49.9	50.0	100	70-135	

Lab Batch #: 3057935 **Sample:** 7659211-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/26/18 21:27

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

Lab Batch #: 3057935 **Sample:** 593648-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/26/18 22:06

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.9	124	70-135	
o-Terphenyl	51.6	50.0	103	70-135	

Lab Batch #: 3057935 **Sample:** 593648-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/26/18 22:26

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.8	119	70-135	
o-Terphenyl	49.8	49.9	100	70-135	

* 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: COG Patron

Work Order #: 593653 **Project ID:**

Analyst: ARM **Date Prepared:** 07/26/2018 **Date Analyzed:** 07/26/2018

Lab Batch ID: 3057935 **Sample:** 7659211-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	950	95	1000	1010	101	6	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	981	98	1000	1050	105	7	70-135	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: COG Patron

Work Order # : 593653 **Project ID:**

Lab Batch ID: 3057935 **QC- Sample ID:** 593648-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/26/2018 **Date Prepared:** 07/26/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 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
Gasoline Range Hydrocarbons (GRO)	12.9	999	962	95	998	952	94	1	70-135	20	
Diesel Range Organics (DRO)	9.71	999	1030	102	998	1020	101	1	70-135	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

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

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.

XENCO Laboratories

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 330936 Page of

Company-City: TRC SOLUTIONS **Phone:** 432-466-4450

Lab Only: 593653

Project Name-Location: COG PATRON EDDY CO, NM ☒ Previously done at XENCO **Project ID:**

TAT: ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other

Proj. Manager (PM): JOEL LOWRY

E-mail Results to ☒ PM and ALGROVES@PAALP.COM ZCONDER@TRCSOLUTIONS.COM, RCOOPER@TRCSOLUTIONS.COM

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.

Bill to: PLAINS MKTING c/o AMBER GROVES

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name: BECKY GRIFFIS **Signature:** Becky G

	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM 8310 8270	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	TPH 8015 M EXT	
1	FL@5'	7-24-18	10:00	5'	S			1													X	1
2	FL@6'	7-24-18	10:30	6'	S			1													X	2
3	FL@7'	7-24-18	11:00	7'	S			1													X	3
4																						4
5																						5
6																						6
7																						7
8																						8
9																						9
10																						10

TAT ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Hold Samples (Surcharges will apply and are pre-approved)

Sample Clean-ups are pre-approved as needed

Remarks

Addn: Date Rcv. by: From:

	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1	1) Becky G	7-25-18 2:20	2) Brittany Cox BC	7/25/18 2:20
2	3) Brittany Cox BC	7/25/18 2:30	4) [signature]	7/26/18 11:20
3	5)		6)	

Total Containers per COC: Cooler Temp: -0.2°C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) ________
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other ________ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)
Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

Committed to Excellence in Service and Quality www.xenco.com

Notice: Signature of this document and relinquishment of these samples constitutes a valid purchase order from client company to Xenco Laboratories and its affiliates, subcontractors and assigns under Xenco's standard terms and conditions of service unless previously negotiated under a fully executed client contract.

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 07/26/2018 11:20:00 AM

Work Order #: 593653

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 07/26/2018

Checklist reviewed by: Jessica Kramer Date: 07/27/2018

Figure 1 - View of the initial release, facing Southeast.

Figure 2 - View of surface staining from the initial release, facing South.

Figure 3 - View of portion of the excavated area, facing East.

Figure 4 - View of portion of the excavated area, facing Southeast.

Figure 5 - View of portion of the excavated area, facing South.

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 15 2018

RECEIVED

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.

fAB1807840259
nAB1807840428

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Plains Pipeline 34053	Contact Amber Groves
Address 1911 Connie Rd, Carlsbad NM 88220	Telephone No. (575)200-5517
Facility Name COG Patron 23 Federal No. 004H	Facility Type Tank Battery

Surface Owner BLM	Mineral Owner BLM	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	23	25S	29E					

Latitude 32.1217918 **Longitude** -103.9478047 NAD83

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 5 bbls	Volume Recovered 4 bbls
Source of Release Strainer on unit	Date and Hour of Occurrence 3/9/2018 @ 9:00 AM	Date and Hour of Discovery 3/9/2018 @ 10:13 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Voicemail to Mike Bratcher	
By Whom? Amber Groves	Date and Hour 3/9/2018 @ 1:15 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Operator error while maintenance was being performed on the strainer inside of the facility. A vacuum truck was dispatched for immediate response.

Describe Area Affected and Cleanup Action Taken.*
The impacted area is contained to the facilty/pad and will be remediated per current NMOCD guidelines.

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

Signature: Amber Groves	OIL CONSERVATION DIVISION
Printed Name: Amber Groves	Approved by Environmental Specialist:
Title: Remediation Coordinator	Approval Date: 3/19/18 Expiration Date: N/A
E-mail Address: algroves@paalp.com	Conditions of Approval: see attached Attached ☒ 2RP-4665
Date: 3/15/2018 Phone: 575-200-5517	

* Attach Additional Sheets If Necessary

3/19/18 AB