



2057 Commerce Drive
Midland, TX 79703

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APPROVED

By Olivia Yu at 7:16 am, Aug 21, 2018

**NMOCD approves of the
delineation completed and grants
backfill approval for 1RP-4883.**

August 7, 2018

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

Ryan Mann
New Mexico State Land Office
2827 N. Dal Paso St., Suite 117
Hobbs, New Mexico 88240

Re: Amended Remediation Summary and Permission to Backfill Request
Phillips State #001 (1RP-4883)
GPS: N 32.4744949° W 103.3875351°
Unit Letter "O", Section 17, Township 21 South, Range 35 East
Lea County, New Mexico

Introduction

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG) has prepared this Amended Remediation Summary and Permission to Backfill Request for the Phillips State #001 Release Site (Release Site). The legal description of the Release Site is Unit Letter "O", Section 17, Township 21 South, Range 35 East, in Lea County, New Mexico. The GPS coordinates for the Release Site are N 32.4744949° W 103.3875351°. The subject property is administered by the NMSLO. A "Site Location Map" and "Site & Sample Location Map" are provided as Figure 1 and Figure 2, respectively.

On November 26, 2017, COG discovered a release had occurred at the Phillips State #001 Tank Battery. The release was attributed to the heater treater developing a hole in the bottom of the vessel, resulting in the release of approximately thirteen (13) barrels (bbls) of produced water and three (3) bbls of crude oil, with no recovery. The release affected an area within the earthen containment measuring approximately four hundred (400) square feet (sq. ft.). Upon discovering the release, the NMOCD and NMLSO 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 17, Township 21 South, Range 35 East. A reference map

utilized by the NMOCD Carlsbad District Office indicates groundwater should be encountered at approximately seventy-five (75) feet below ground surface (bgs). Based on the NMOCD site classification system, ten (10) 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 one thousand (1,000) mg/kg for total petroleum hydrocarbons (TPH). Per NMOCD request, chloride remediation levels for the Release Site will be 600 mg/kg.

Initial Investigation

On December 21, 2017, TRC conducted an initial investigation at the site. During the initial investigation, a hand-augered soil bore (SP #1) was advanced within the release margins in an effort to determine the vertical extent of soil impacts. During the advancement of the soil bore an impenetrable rock layer was encountered at approximately ten (10) inches bgs. One (1) soil sample (SP #1 @ 10"-R) was collected and submitted to Xenco Laboratories in Lubbock, Texas for determination of TPH, BTEX, and chloride utilizing Method SW 846-8015M, Method SW 846-8021B, and Method 300/300.1 Laboratory analytical results indicated a TPH concentration of 5,337 mg/kg, a BTEX concentration of 56.03 mg/kg, and a chloride concentration of 1,520 mg/kg. TPH, BTEX, and chloride concentrations were above NMOCD Recommended Remediation Action Levels (RRAL). Collection of additional soil samples from deeper intervals was precluded due the presence of an impenetrable rock layer. (See attached Figure 2 and Table 1 for sample locations and a summary of laboratory analytical results).

In addition, TRC collected four (4) soil samples (North @ 6", South @ 6", East @ 6" and West @ 6") from the edges of the inferred release margins and submitted them to the laboratory for analysis of BTEX, TPH and chloride. Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were less than NMOCD RRAL in each of the submitted soil samples with the exception of soil sample North @ 6", which exhibited a TPH concentration of 1,435 mg/kg and a chloride concentration of 687 mg/kg.

Soil Investigation Summary and Proposed Remediation Workplan

On February 7, 2018, COG prepared a *Soil Investigation Summary and Proposed Remediation Workplan (Workplan)* proposing the following field activities designed to advance the Phillips State #001 Release Site toward an NMSLO- and NMOCD-approved closure:

- Utilizing mechanical equipment, excavate impacted soil within the release margins to a depth of greater than ten (10) inches (in.) bgs, or until field test results indicate impacted soil affected above the NMOCD RRAL has been removed.
- Advance the sidewall of the excavation in the area characterized by soil sample North @ 6” until field test results indicate impacted soil affected above the NMOCD RRAL has been removed.
- Affected soil adjacent to and/or beneath active oil and gas equipment impacted above the NMOCD RRAL will be excavated to the maximum extent practicable, as necessary, in an effort to mitigate risks to human health and property.
- Upon excavating impacted soil from within the release margins, confirmation soil samples will be collected from the floor and sidewalls of the excavated area at approximate fifty (50) ft. increments and submitted to the laboratory for analysis of TPH, BTEX, and chloride.
- Temporarily stockpile excavated soil on-site, atop an impermeable liner, pending final disposition at an NMOCD-approved disposal facility.
- Upon receiving laboratory analytical results from confirmation soil samples, transport impacted soil to an NMOCD-approved disposal facility and backfill the excavated area with locally-sourced, non-impacted caliche.
- Upon completion of remediation activities and receipt of laboratory analytical result from confirmation soil samples, TRC will prepare and submit a “Remediation Summary and Site Closure Request” to the NMOCD and NMSLO detailing remediation activities and laboratory analytical results from confirmation soil samples.

The *Workplan* was subsequently approved. Please reference the *Soil Investigation Summary and Proposed Remediation Workplan*, dated January 23, 2018, for additional details regarding the initial soil investigation.

Remediation Activities Summary

On March 8, 2018, remediation activities commenced at the Release Site. As per the approved *Workplan* impacted soil was excavated and stockpiled on-site, atop an impermeable liner, pending final disposition. During the excavation of impacted soil, a resilient rock layer was encountered at depths ranging from ten (10 inches (in.) to three (3) ft. bgs. Additional excavation was precluded due to safety concerns associated with attempting to break the rock in close proximity to the active production equipment.

On March 30, 2018, TRC collected six (6) soil samples (FL-1, FL-2, NSW, SSW, ESW and WSW) from the floor and sidewalls of the excavated area and submitted the soil samples to an NMOCD-approved laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated TPH concentrations ranged from 43.3 mg/kg in soil sample WSW to 2,933.4 mg/kg in soil sample FL-1. Soil samples FL-1 and FL-2 were also analyzed for concentrations of chloride, which were determined to be 1,260 mg/kg and 968 mg/kg, respectively. Chloride field tests results suggested concentrations of chloride in sidewall soil samples exceeded the NMOCD RRAL.

On April 26 and 27, 2018, TRC revisited the Release Site with a backhoe equipped with a different set of “rock teeth”. Excavation sidewalls were advanced until chloride field test results indicated concentrations of chloride were below the NMOCD RRAL. Attempts to advance the floor of the excavation resulted in broken backhoe teeth and risked destabilizing the heater treater. Upon advancing

the excavation sidewalls, four soil samples (NSWb, ESWb, SSWb and WSWb) were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations range from 121 mg/kg in soil sample NSWb to 524 mg/kg in soil sample WSWb. Soil sample ESWb was also analyzed for concentrations of TPH, which were determined to be 3,890 mg/kg.

On May 29, 2018, the backhoe was remobilized to the site. The excavation sidewall was advanced in the area represented by soil sample ESWb and additional attempts were made to advance the floor of the excavation. Upon excavating impacted soil from the area represented by soil sample ESWb, one (1) soil sample (ESW*) was collected and submitted to the laboratory for analysis of TPH and chloride. Laboratory analytical results indicated soil samples ESW* exhibited a TPH concentration of less than the applicable laboratory reporting limit and a chloride concentration of 145 mg/kg.

The final dimensions of the excavated area were approximately forty-five (45) ft. in length, thirty-five (35) ft. in width and one (1) to three (3) ft in depth.

On July 25, 2018, TRC revisited the release site with a backhoe equipped with a “hammerhoe” attachment. During the site visit two (2) soil samples (SP #1b @ 2’ and SP #2b @ 3.5’) were collected and submitted to the laboratory for analysis of TPH and chloride. Soil sample SP #1b @ 2’ was collected from the area characterized by soil sample FL-1. Laboratory analytical results indicated soil sample SP #1b @ 2’ exhibited a TPH concentration of 175 mg/kg and chloride concentration of 212 mg/kg.

Soil sample SP #2b @ 3.5’ was collected from the area characterized by soil sample FL-2. Laboratory analytical results indicated soil sample SP #2b @ 3.5’ exhibited a TPH concentration of 112 mg/kg and chloride concentration of 181 mg/kg.

Permission to Backfill

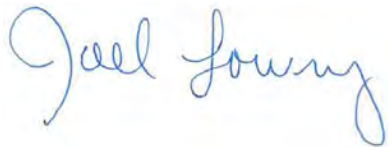
Based on laboratory analytical results from excavation confirmation and delineation soil samples and field activities conducted to date, COG requests NMOCD and NMSLO permission to backfill the excavated area with locally-sourced, non-impacted caliche. Excavation backfill will be compacted and graded to meet the needs of the production facility.

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

If you have any questions, or need any additional information, please feel free to contact Becky Haskell 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
 COG Operating, LLC
 Phillips State #001
 Lea County, New Mexico

Scale 1" = ~4,500'

Drafted by: ZC Checked by: JL

Draft: January 15, 2018

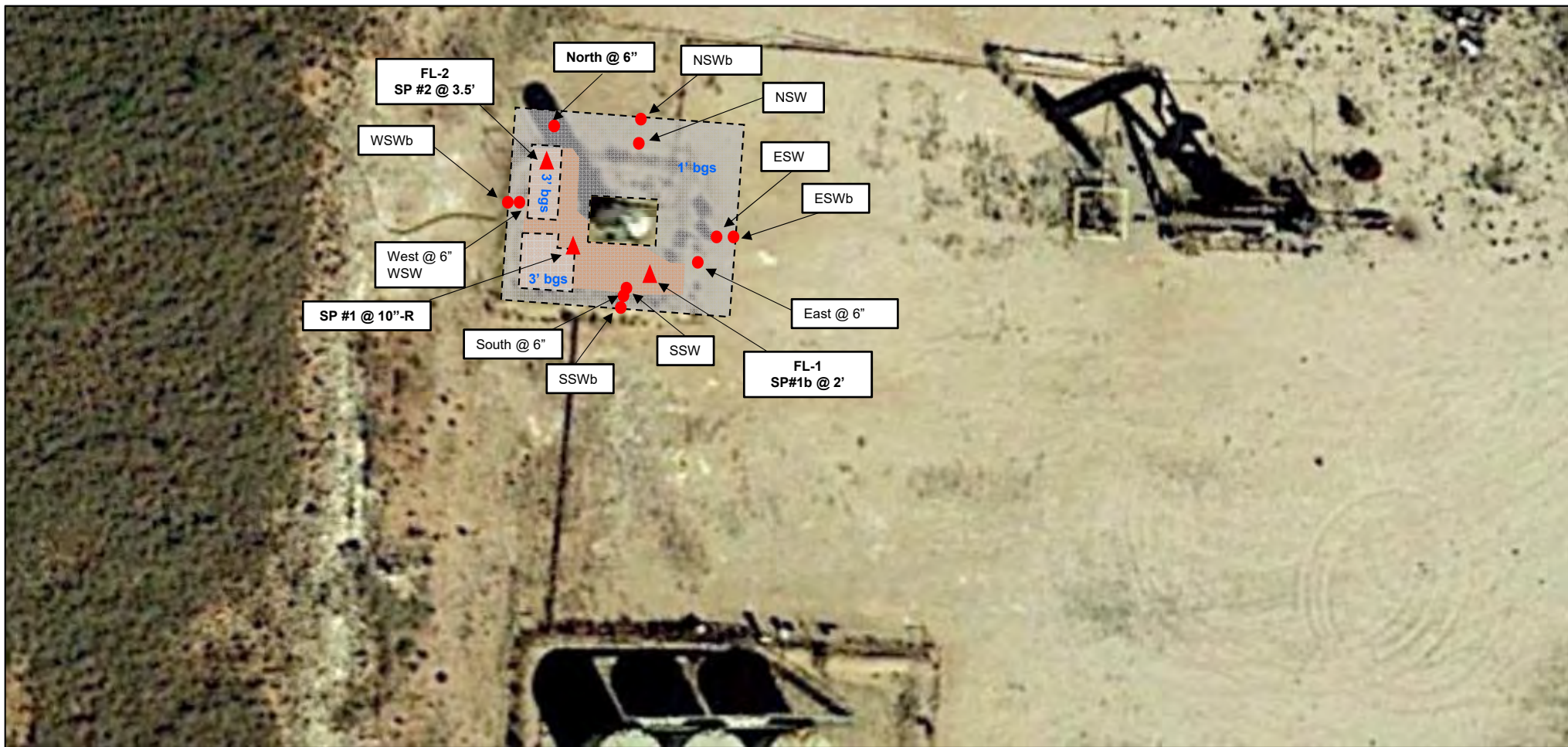
Lat. N 32.4744949 Long. W 103.3875351

UL "O", Sec. 17, T21S, R35E

TRC Proj. No.: 293168



2057 Commerce Drive
 Midland, Texas 79703
 432.520.7720



LEGEND:	●	Sidewall Sample Location
	▲	Horizontal Sample Location
		Excavated Area
		Affected Soil Remaining In-Situ

Figure 2
Site & Sample Location Map
COG Operating, LLC
Phillips State #001

Lea County, New Mexico

Scale 1" = ~50'

Drafted by: ZC | Checked by: JL

Draft: January 15, 2018

Lat. N 32.4744949 Long. W 103.3875351

UL "O", Sec. 17, T21S, R35E

TRC Proj. No.: 293168



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Midland, Texas 79703
432.520.7720

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

COG OPERATING, LLC
 PHILLIPS STATE #001
 LEA COUNTY, NEW MEXICO

All concentrations are reported in mg/kg

SAMPLE LOCATION	SAMPLE DATE	SOIL STATUS	SAMPLE DEPTH	METHODS: SW 846-8021b							METHOD: SW 8015M				METHOD E300
				BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENE S	o - XYLENE	TOTAL XYLENE S	TOTAL BTEX	TPH GRO C ₆ -C ₁₀	TPH DRO C _{>10} -C ₂₈	TPH ORO C ₂₈ -C ₃₅	TOTAL TPH C ₆ -C ₂₈	CHLORIDE
SP #1 @ 10"-R	12/21/2017	Excavated	10"	<0.0998	5.26	2.77	31.3	16.7	48	56.03	1,010	3,900	427	5,337	1,520
North @ 6"	12/21/2017	Excavated	6"	0.176	0.353	0.107	0.100	0.0337	0.1337	0.7697	10.8	982	442	1,435	687
East @ 6"	12/21/2017	In-Situ	6"	<0.00100	<0.00100	<0.00100	<0.00200	<0.00100	<0.001	<0.001	<4.95	<14.9	<14.9	<14.9	81.8
South @ 6"	12/21/2017	In-Situ	6"	0.00259	0.00238	<0.00100	<0.00201	0.00165	0.00165	0.00662	<4.96	16.0	<14.9	16.0	77.0
West @ 6"	12/21/2017	In-Situ	6"	<0.0248	0.157	0.0285	0.0894	0.0399	0.01293	0.3148	<4.95	15.9	<14.9	15.9	48.9
FL-1	3/30/2018	In-Situ	1'	<0.00201	<0.00201	<0.00201	<0.00402	<0.00201	<0.00201	<0.00201	<15.0	2,870	63.4	2,933.4	1,260
FL-2	3/30/2018	In-Situ	3'	<0.00202	<0.00202	<0.00202	<0.00404	<0.00202	<0.00202	<0.00202	<15.0	1,080	45.6	1,125.6	968
NSW	3/30/2018	Excavated	6"	<0.00200	<0.00200	<0.00200	<0.00401	<0.00200	<0.002	<0.002	<14.9	64.3	<14.9	64.3	-
SSW	3/30/2018	Excavated	6"	<0.00199	<0.00199	<0.00199	<0.00398	<0.00199	<0.00199	<0.00199	20.5	673	99.9	793.4	-
ESW	3/30/2018	Excavated	6"	<0.00200	<0.00200	<0.00200	<0.00399	<0.00200	<0.002	<0.002	36.8	2,130	336	2,502.8	-
WSW	3/30/2018	Excavated	6"	<0.00202	<0.00202	<0.00202	<0.00403	<0.00202	<0.00202	<0.00202	<15.0	43.3	<15.0	43.3	-
NSWb	4/26/2018	In-Situ	1'	-	-	-	-	-	-	-	-	-	-	-	121
ESWb	4/26/2018	Excavated	1'	-	-	-	-	-	-	-	119	3,740	31.9	3,890.9	450
SSWb	4/27/2018	In-Situ	1'	-	-	-	-	-	-	-	-	-	-	-	422
WSWb	4/27/2018	In-Situ	1'	-	-	-	-	-	-	-	-	-	-	-	524
ESW*	5/29/2018	In-Situ	1'	-	-	-	-	-	-	-	<15.0	<15.0	<15.0	<15	145
NMOCD Recommended Remediation Action Level				10	-	-	-	-	-	50	-	-	-	1,000	600

* Denotes sample name has been used previously.

Analytical Report 572225

**for
TRC Solutions, Inc**

Project Manager: Joel Lowry

Phillips State #001

15-JAN-18

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):

Texas (T104704295-17-15), 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 (T104704400-17-13)

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)



15-JAN-18

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

Reference: XENCO Report No(s): **572225**
Phillips State #001
Project Address: Lea 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) 572225. 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. 572225 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Kelsey Brooks

Project Manager

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Sample Cross Reference 572225

TRC Solutions, Inc, Midland, TX

Phillips State #001

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP #1 @ 10"-R	S	12-21-17 14:25	10 In	572225-001
North @ 6"	S	12-21-17 14:50	6 In	572225-002
East @ 6"	S	12-21-17 14:55	6 In	572225-003
South @ 6"	S	12-21-17 15:00	6 In	572225-004
West @ 6"	S	12-21-17 15:05	6 In	572225-005



CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: Phillips State #001

Project ID:

Work Order Number(s): 572225

Report Date: 15-JAN-18

Date Received: 12/28/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3037445 BTEX by SW 8260B

SAMPLE 572225-005 IS ROCKS. CANNOT RUN ANY LOWER DILUTION.

Batch: LBA-3037542 BTEX by SW 8260B

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



Certificate of Analysis Summary 572225

TRC Solutions, Inc, Midland, TX

Project Name: Phillips State #001

Project Id:

Contact: Joel Lowry

Project Location: Lea Co. NM

Date Received in Lab: Thu Dec-28-17 05:12 pm

Report Date: 15-JAN-18

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	572225-001	572225-002	572225-003	572225-004	572225-005	
	Field Id:	SP #1 @ 10"-R	North @ 6"	East @ 6"	South @ 6"	West @ 6"	
	Depth:	10- In	6- In	6- In	6- In	6- In	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Dec-21-17 14:25	Dec-21-17 14:50	Dec-21-17 14:55	Dec-21-17 15:00	Dec-21-17 15:05	
BTEX by SW 8260B SUB: TX104704215-17-23	Extracted:	Jan-03-18 17:00	Jan-04-18 13:00	Jan-03-18 17:00	Jan-03-18 17:00	Jan-03-18 17:00	
	Analyzed:	Jan-03-18 20:54	Jan-04-18 13:47	Jan-03-18 19:51	Jan-03-18 20:07	Jan-03-18 20:22	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.0998 0.0998	0.176 0.0250	<0.00100 0.00100	0.00259 0.00100	<0.0248 0.0248	
Toluene		5.26 0.0998	0.353 0.0250	<0.00100 0.00100	0.00238 0.00100	0.157 0.0248	
Ethylbenzene		2.77 0.0998	0.107 0.0250	<0.00100 0.00100	<0.00100 0.00100	0.0285 0.0248	
m,p-Xylenes		31.3 0.200	0.100 0.0499	<0.00200 0.00200	<0.00201 0.00201	0.0894 0.0495	
o-Xylene		16.7 0.0998	0.0337 0.0250	<0.00100 0.00100	0.00165 0.00100	0.0399 0.0248	
Total Xylenes		48 0.0998	0.1337 0.025	<0.001 0.001	0.00165 0.001	0.1293 0.0248	
Total BTEX		56.03 0.0998	0.7697 0.025	<0.001 0.001	0.00662 0.001	0.3148 0.0248	
Chloride by EPA 300 SUB: TX104704215-17-23	Extracted:	Jan-03-18 14:00	Jan-03-18 14:00	Jan-03-18 14:00	Jan-03-18 14:00	Jan-03-18 14:00	
	Analyzed:	Jan-03-18 23:37	Jan-03-18 23:48	Jan-04-18 00:22	Jan-04-18 00:55	Jan-04-18 01:07	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		1520 49.0	687 48.9	81.8 49.5	77.0 48.3	48.9 47.9	
DRO-ORO By SW8015B SUB: TX104704215-17-23	Extracted:	Jan-03-18 10:42	Jan-03-18 10:45	Jan-03-18 10:48	Jan-03-18 10:51	Jan-03-18 10:54	
	Analyzed:	Jan-04-18 02:18	Jan-05-18 04:51	Jan-04-18 17:59	Jan-03-18 18:38	Jan-03-18 18:59	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Diesel Range Organics (DRO)		3900 14.9	982 14.9	<14.9 14.9	16.0 14.9	15.9 14.9	
Oil Range Hydrocarbons (ORO)		427 14.9	442 14.9	<14.9 14.9	<14.9 14.9	<14.9 14.9	
TPH GRO by EPA 8015 Mod. SUB: TX104704215-17-23	Extracted:	Jan-04-18 15:00	Jan-04-18 10:00	Jan-04-18 10:00	Jan-04-18 10:00	Jan-04-18 10:00	
	Analyzed:	Jan-04-18 16:29	Jan-04-18 11:44	Jan-04-18 12:16	Jan-04-18 12:50	Jan-04-18 13:23	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
TPH-GRO		1010 99.8	10.8 4.95	<4.95 4.95	<4.96 4.96	<4.95 4.95	

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

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

Kelsey Brooks
Project Manager

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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4147 Greenbriar Dr, Stafford, TX 77477
 9701 Harry Hines Blvd, Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 1211 W Florida Ave, Midland, TX 79701
 2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: Phillips State #001

Work Orders : 572225,

Lab Batch #: 3037397

Sample: 572225-004 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/18 18:38

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.4	99.4	73	70-135	
o-Terphenyl	35.7	49.7	72	70-135	

Lab Batch #: 3037397

Sample: 572225-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/18 18:59

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.6	99.0	75	70-135	
o-Terphenyl	38.5	49.5	78	70-135	

Lab Batch #: 3037445

Sample: 572225-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/18 19:51

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0464	0.0500	93	80-120	
Toluene-D8	0.0532	0.0500	106	73-132	

Lab Batch #: 3037445

Sample: 572225-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/18 20:07

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0512	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0469	0.0500	94	80-120	
Toluene-D8	0.0521	0.0500	104	73-132	

* 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: Phillips State #001

Work Orders : 572225,

Lab Batch #: 3037445

Sample: 572225-005 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/18 20:22

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0553	0.0500	111	74-126	
1,2-Dichloroethane-D4	0.0477	0.0500	95	80-120	
Toluene-D8	0.0499	0.0500	100	73-132	

Lab Batch #: 3037445

Sample: 572225-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/18 20:54

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0510	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0498	0.0500	100	73-132	

Lab Batch #: 3037397

Sample: 572225-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 02:18

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	104	99.1	105	70-135	
o-Terphenyl	43.7	49.6	88	70-135	

Lab Batch #: 3037523

Sample: 572225-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 11:44

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 3037523

Sample: 572225-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 12:16

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

* 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: Phillips State #001

Work Orders : 572225,

Lab Batch #: 3037523

Sample: 572225-004 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 12:50

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	0.0292	0.0300	97	80-120	

Lab Batch #: 3037523

Sample: 572225-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 13:23

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	0.0273	0.0300	91	80-120	

Lab Batch #: 3037542

Sample: 572225-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 13:47

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0558	0.0500	112	74-126	
1,2-Dichloroethane-D4	0.0554	0.0500	111	80-120	
Toluene-D8	0.0431	0.0500	86	73-132	

Lab Batch #: 3037523

Sample: 572225-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 16:29

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	0.0295	0.0300	98	80-120	

Lab Batch #: 3037397

Sample: 572225-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 17:59

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.1	99.6	70	70-135	
o-Terphenyl	35.1	49.8	70	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: Phillips State #001

Work Orders : 572225,

Lab Batch #: 3037397

Sample: 572225-002 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/05/18 04:51

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.7	99.2	71	70-135	
o-Terphenyl	35.3	49.6	71	70-135	

Lab Batch #: 3037397

Sample: 7636876-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/18 11:56

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.2	100	99	70-135	
o-Terphenyl	56.7	50.0	113	70-135	

Lab Batch #: 3037445

Sample: 7636978-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/18 18:33

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0489	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0467	0.0500	93	80-120	
Toluene-D8	0.0558	0.0500	112	73-132	

Lab Batch #: 3037523

Sample: 7637012-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/18 11:10

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	0.0290	0.0300	97	80-120	

* 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: Phillips State #001

Work Orders : 572225,

Lab Batch #: 3037542

Sample: 7637024-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/18 12:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0520	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0496	0.0500	99	80-120	
Toluene-D8	0.0495	0.0500	99	73-132	

Lab Batch #: 3037397

Sample: 7636876-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/18 11:15

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	62.6	50.0	125	70-135	

Lab Batch #: 3037445

Sample: 7636978-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/18 16:25

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0499	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0520	0.0500	104	73-132	

Lab Batch #: 3037542

Sample: 7637024-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/18 10:07

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0515	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0494	0.0500	99	80-120	
Toluene-D8	0.0503	0.0500	101	73-132	

* 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: Phillips State #001

Work Orders : 572225,

Lab Batch #: 3037523

Sample: 7637012-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/18 18:41

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 3037397

Sample: 7636876-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/18 11:36

SURROGATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	52.9	50.0	106	70-135	

Lab Batch #: 3037445

Sample: 7636978-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/03/18 17:29

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0558	0.0500	112	80-120	
Toluene-D8	0.0454	0.0500	91	73-132	

Lab Batch #: 3037542

Sample: 7637024-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/18 11:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0498	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0503	0.0500	101	80-120	
Toluene-D8	0.0520	0.0500	104	73-132	

Lab Batch #: 3037523

Sample: 7637012-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/04/18 19:13

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	0.0287	0.0300	96	80-120	

* 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: Phillips State #001

Work Orders : 572225,

Lab Batch #: 3037445

Sample: 572221-022 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/18 16:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0496	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0500	0.0500	100	80-120	
Toluene-D8	0.0498	0.0500	100	73-132	

Lab Batch #: 3037542

Sample: 572221-024 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 11:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0541	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0563	0.0500	113	80-120	
Toluene-D8	0.0459	0.0500	92	73-132	

Lab Batch #: 3037523

Sample: 572225-005 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 19:47

SURROGATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 3037445

Sample: 572221-022 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/03/18 17:13

SURROGATE RECOVERY STUDY

BTEX by SW 8260B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0496	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0498	0.0500	100	80-120	
Toluene-D8	0.0537	0.0500	107	73-132	

* 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: Phillips State #001

Work Orders : 572225,

Lab Batch #: 3037542

Sample: 572221-024 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 16:49

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0538	0.0500	108	74-126	
1,2-Dichloroethane-D4	0.0576	0.0500	115	80-120	
Toluene-D8	0.0460	0.0500	92	73-132	

Lab Batch #: 3037523

Sample: 572225-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/04/18 20:19

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	0.0266	0.0300	89	80-120	

* 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: Phillips State #001

Work Order #: 572225

Analyst: JTR

Date Prepared: 01/03/2018

Project ID:

Date Analyzed: 01/03/2018

Lab Batch ID: 3037445

Sample: 7636978-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.00100	0.100	0.0967	97	0.100	0.115	115	17	62-132	25	
Toluene	<0.00100	0.100	0.103	103	0.100	0.0967	97	6	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0971	97	0.100	0.104	104	7	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.199	100	0.200	0.214	107	7	69-128	25	
o-Xylene	<0.00100	0.100	0.0979	98	0.100	0.103	103	5	72-131	25	

Analyst: JTR

Date Prepared: 01/04/2018

Date Analyzed: 01/04/2018

Lab Batch ID: 3037542

Sample: 7637024-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.00100	0.100	0.102	102	0.100	0.114	114	11	62-132	25	
Toluene	<0.00100	0.100	0.0920	92	0.100	0.0987	99	7	66-124	25	
Ethylbenzene	<0.00100	0.100	0.0871	87	0.100	0.0998	100	14	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.181	91	0.200	0.204	102	12	69-128	25	
o-Xylene	<0.00100	0.100	0.0869	87	0.100	0.101	101	15	72-131	25	

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: Phillips State #001

Work Order #: 572225

Analyst: DHE

Date Prepared: 01/03/2018

Project ID:

Date Analyzed: 01/03/2018

Lab Batch ID: 3037378

Sample: 7636897-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<1.00	10.0	9.77	98	10.0	9.75	98	0	80-120	20	

Analyst: ARL

Date Prepared: 01/03/2018

Date Analyzed: 01/03/2018

Lab Batch ID: 3037397

Sample: 7636876-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1000	100	1000	904	90	10	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1050	105	1000	1010	101	4	70-135	35	

Analyst: JTR

Date Prepared: 01/04/2018

Date Analyzed: 01/04/2018

Lab Batch ID: 3037523

Sample: 7637012-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod.	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
TPH-GRO	<5.00	25.0	20.9	84	25.0	20.1	80	4	75-135	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



Form 3 - MS / MSD Recoveries

Project Name: Phillips State #001

Work Order # : 572225

Project ID:

Lab Batch ID: 3037445

QC- Sample ID: 572221-022 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/03/2018

Date Prepared: 01/03/2018

Analyst: JTR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B 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	<0.000998	0.0998	0.102	102	0.0996	0.0924	93	10	62-132	25	
Toluene	<0.000998	0.0998	0.102	102	0.0996	0.104	104	2	66-124	25	
Ethylbenzene	<0.000998	0.0998	0.110	110	0.0996	0.0925	93	17	71-134	25	
m,p-Xylenes	<0.00200	0.200	0.225	113	0.199	0.192	96	16	69-128	25	
o-Xylene	<0.000998	0.0998	0.109	109	0.0996	0.0932	94	16	72-131	25	

Lab Batch ID: 3037542

QC- Sample ID: 572221-024 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2018

Date Prepared: 01/04/2018

Analyst: JTR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B 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	<0.000992	0.0992	0.125	126	0.0998	0.129	129	3	62-132	25	
Toluene	<0.000992	0.0992	0.0829	84	0.0998	0.0851	85	3	66-124	25	
Ethylbenzene	<0.000992	0.0992	0.0911	92	0.0998	0.0951	95	4	71-134	25	
m,p-Xylenes	<0.00198	0.198	0.196	99	0.200	0.198	99	1	69-128	25	
o-Xylene	<0.000992	0.0992	0.0984	99	0.0998	0.0992	99	1	72-131	25	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries

Project Name: Phillips State #001

Work Order #: 572225

Project ID:

Lab Batch ID: 3037378

QC- Sample ID: 572194-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2018

Date Prepared: 01/03/2018

Analyst: DHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	4620	489	5130	104	489	5100	98	1	80-120	20	

Lab Batch ID: 3037378

QC- Sample ID: 572225-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/03/2018

Date Prepared: 01/03/2018

Analyst: DHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	687	489	1180	101	489	1180	101	0	80-120	20	

Lab Batch ID: 3037523

QC- Sample ID: 572225-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/04/2018

Date Prepared: 01/04/2018

Analyst: JTR

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	<5.00	25.0	22.5	90	25.0	23.4	94	4	75-135	35	

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.



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

CHAIN OF CUSTODY

Page 1 Of 1

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

Phoenix, Arizona (480-355-0900)

www.xencolab.com

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch: TRC Environmental Corporation				Project Name/Number: Phillips State #001											
Company Address: 2057 Commerce Drive Midland, TX 79703				Project Location: Lea Co, NM											
Email: lowry@trcsolutions.com				Invoice To: COG Operating C/O Becky Haskell											
Phone No: 432-466-4460				Invoice:											
Project Contact: Joel Lowry															
Sampler's Name: Joel Lowry															
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	Number of preserved bottles				Field Comments				
							HCl	NaOH/Zn	HNO3	H2SO4	NaOH	MeOH	NONE		
1	SP #1 @ 10"-R	10"	12/21/2017	2:45	S	1								TPH 8015 M Ext	
2	North @ 6"	6"	12/21/2017	2:50	S	1								Chloride E 300	
3	East @ 6"	6"	12/21/2017	2:55	S	1									
4	South @ 6"	6"	12/21/2017	3:00	S	1									
5	West @ 6"	6"	12/21/2017	3:05	S	1									
6															
7															
8															
9															
10															

Data Deliverable Information				Notes:			
<input type="checkbox"/> Same Day TAT	<input type="checkbox"/> 5 Day TAT	<input type="checkbox"/> Level II Std QC	<input type="checkbox"/> Level IV (Full Data Pkg /raw data)	lowry@trcsolutions.com			
<input type="checkbox"/> Next Day EMERGENCY	<input type="checkbox"/> 7 Day TAT	<input type="checkbox"/> Level III Std QC+ Forms	<input type="checkbox"/> TRRP Level IV	haskell@concho.com			
<input type="checkbox"/> 2 Day EMERGENCY	<input checked="" type="checkbox"/> Contract TAT	<input type="checkbox"/> Level 3 (CLP Forms)	<input type="checkbox"/> UST / RG -411	kblackburn@trcsolutions.com			
<input type="checkbox"/> 3 Day EMERGENCY		<input type="checkbox"/> TRRP Checklist		dneel2@concho.com			
TAT Starts Day received by Lab, if received by 5:00 pm				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:	Date Time:
1 <i>Joel Lowry</i>	12/21 3:08	<i>Becky Haskell</i>	12/21 3:08
Relinquished by:	Date Time:	Received By:	Date Time:
3			
Relinquished by:	Date Time:	Received By:	Date Time:
<i>Becky Haskell</i>	12/21 5:14	<i>Becky Haskell</i>	12/21 5:14

On Ice ☒ Cooler Temp. Thermo. Corr. Factor *1.01*

Note/Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. 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 losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. 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.



Inter-Office Shipment

Page 1 of 2

IOS Number **1053903**

Date/Time: 12/28/17 17:44

Created by: Brenda Ward

Please send report to: Kelsey Brooks

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Houston**

Air Bill No.: 771105606137

Phone:

E-Mail: kelsey.brooks@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
572225-001	S	SP #1 @ 10"-R	12/21/17 14:25	E300_CL	Chloride by EPA 300	01/04/18	01/18/18	KEB	CL	
572225-001	S	SP #1 @ 10"-R	12/21/17 14:25	SW8021B	BTEX by EPA 8021B	01/04/18	01/04/18	KEB	BR4FBZ BZ BZME EBZ X	
572225-001	S	SP #1 @ 10"-R	12/21/17 14:25	SW8015GRO	TPH GRO by EPA 8015 Mod.	01/04/18	01/04/18	KEB	PHCG	
572225-001	S	SP #1 @ 10"-R	12/21/17 14:25	SW8015B_DROORO	DRO-ORO By SW8015B	01/04/18	01/04/18	KEB	PHCC10C28 PHCC28C35	
572225-002	S	North @ 6"	12/21/17 14:50	E300_CL	Chloride by EPA 300	01/04/18	01/18/18	KEB	CL	
572225-002	S	North @ 6"	12/21/17 14:50	SW8015GRO	TPH GRO by EPA 8015 Mod.	01/04/18	01/04/18	KEB	PHCG	
572225-002	S	North @ 6"	12/21/17 14:50	SW8015B_DROORO	DRO-ORO By SW8015B	01/04/18	01/04/18	KEB	PHCC10C28 PHCC28C35	
572225-002	S	North @ 6"	12/21/17 14:50	SW8021B	BTEX by EPA 8021B	01/04/18	01/04/18	KEB	BR4FBZ BZ BZME EBZ X	
572225-003	S	East @ 6"	12/21/17 14:55	SW8021B	BTEX by EPA 8021B	01/04/18	01/04/18	KEB	BR4FBZ BZ BZME EBZ X	
572225-003	S	East @ 6"	12/21/17 14:55	SW8015B_DROORO	DRO-ORO By SW8015B	01/04/18	01/04/18	KEB	PHCC10C28 PHCC28C35	
572225-003	S	East @ 6"	12/21/17 14:55	E300_CL	Chloride by EPA 300	01/04/18	01/18/18	KEB	CL	
572225-003	S	East @ 6"	12/21/17 14:55	SW8015GRO	TPH GRO by EPA 8015 Mod.	01/04/18	01/04/18	KEB	PHCG	
572225-004	S	South @ 6"	12/21/17 15:00	SW8015GRO	TPH GRO by EPA 8015 Mod.	01/04/18	01/04/18	KEB	PHCG	
572225-004	S	South @ 6"	12/21/17 15:00	SW8021B	BTEX by EPA 8021B	01/04/18	01/04/18	KEB	BR4FBZ BZ BZME EBZ X	
572225-004	S	South @ 6"	12/21/17 15:00	E300_CL	Chloride by EPA 300	01/04/18	01/18/18	KEB	CL	
572225-004	S	South @ 6"	12/21/17 15:00	SW8015B_DROORO	DRO-ORO By SW8015B	01/04/18	01/04/18	KEB	PHCC10C28 PHCC28C35	
572225-005	S	West @ 6"	12/21/17 15:05	SW8015GRO	TPH GRO by EPA 8015 Mod.	01/04/18	01/04/18	KEB	PHCG	
572225-005	S	West @ 6"	12/21/17 15:05	SW8015B_DROORO	DRO-ORO By SW8015B	01/04/18	01/04/18	KEB	PHCC10C28 PHCC28C35	
572225-005	S	West @ 6"	12/21/17 15:05	E300_CL	Chloride by EPA 300	01/04/18	01/18/18	KEB	CL	
572225-005	S	West @ 6"	12/21/17 15:05	SW8021B	BTEX by EPA 8021B	01/04/18	01/04/18	KEB	BR4FBZ BZ BZME EBZ X	



Inter-Office Shipment

Page 2 of 2

IOS Number **1053903**

Date/Time: 12/28/17 17:44

Created by: Brenda Ward

Please send report to: Kelsey Brooks

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Houston**

Air Bill No.: 771105606137

Phone:

E-Mail: kelsey.brooks@xenco.com

Inter Office Shipment or Sample Comments:

12/29/17 DRO added to IOS. HT

Relinquished By

Brenda Ward

Received By:

Rene Vandenberghe

Date Relinquished: 12/28/2017

Date Received: 12/29/2017 10:00

Cooler Temperature: 3.6



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 1053903

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : hou-068

Sent By: Brenda Ward

Date Sent: 12/28/2017 05:44 PM

Received By: Rene Vandenberghe

Date Received: 12/29/2017 10:00 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 *Custody Seals Signed and dated for Containers/coolers	N/A
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

12/29/17 DRO added to IOS. HT

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

R. C. V. L. H. T.
Rene Vandenberghe

Date: 12/29/2017



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: TRC Solutions, Inc

Date/ Time Received: 12/28/2017 05:12:00 PM

Work Order #: 572225

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-3

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.1
#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:

Brenda Ward
Brenda Ward

Date: 12/28/2017

Checklist reviewed by:

Kelsey Brooks
Kelsey Brooks

Date: 12/31/2017

Analytical Report 581097

for
TRC Solutions, Inc

Project Manager: Joel Lowry

COG Phillips State

09-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)



09-APR-18

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

Reference: XENCO Report No(s): **581097**
COG Phillips State
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) 581097. 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. 581097 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

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 581097



TRC Solutions, Inc, Midland, TX

COG Phillips State

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-1	S	03-30-18 14:00	1 ft	581097-001
FL-2	S	03-30-18 14:05	3 ft	581097-002
NSW	S	03-30-18 14:10	6 ft	581097-003
SSW	S	03-30-18 14:15	6 ft	581097-004
ESW	S	03-30-18 14:20	6 ft	581097-005
WSW	S	03-30-18 14:25	6 ft	581097-006



CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: COG Phillips State

Project ID:

Work Order Number(s): 581097

Report Date: 09-APR-18

Date Received: 04/03/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3045814 BTEX by EPA 8021B

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



Certificate of Analysis Summary 581097

TRC Solutions, Inc, Midland, TX

Project Name: COG Phillips State



Project Id:

Contact: Joel Lowry

Project Location:

Date Received in Lab: Tue Apr-03-18 10:18 am

Report Date: 09-APR-18

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	581097-001	581097-002	581097-003	581097-004	581097-005	581097-006
	<i>Field Id:</i>	FL-1	FL-2	NSW	SSW	ESW	WSW
	<i>Depth:</i>	1- ft	3- ft	6- ft	6- ft	6- ft	6- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-30-18 14:00	Mar-30-18 14:05	Mar-30-18 14:10	Mar-30-18 14:15	Mar-30-18 14:20	Mar-30-18 14:25
BTEX by EPA 8021B	<i>Extracted:</i>	Apr-05-18 10:00	Apr-05-18 10:00	Apr-05-18 10:00	Apr-05-18 10:00	Apr-05-18 10:00	Apr-05-18 10:00
	<i>Analyzed:</i>	Apr-05-18 17:24	Apr-05-18 17:46	Apr-05-18 18:06	Apr-05-18 18:44	Apr-05-18 19:04	Apr-05-18 19:23
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Toluene		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Ethylbenzene		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
m,p-Xylenes		<0.00402 0.00402	<0.00404 0.00404	<0.00401 0.00401	<0.00398 0.00398	<0.00399 0.00399	<0.00403 0.00403
o-Xylene		<0.00201 0.00201	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00202 0.00202
Total Xylenes		<0.00201 0.00201	<0.00202 0.00202	<0.002 0.002	<0.00199 0.00199	<0.002 0.002	<0.00202 0.00202
Total BTEX		<0.00201 0.00201	<0.00202 0.00202	<0.002 0.002	<0.00199 0.00199	<0.002 0.002	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	Apr-03-18 16:45	Apr-03-18 16:45				
	<i>Analyzed:</i>	Apr-03-18 23:28	Apr-03-18 23:33				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Chloride		1260 25.0	968 25.0				
TPH by SW8015 Mod	<i>Extracted:</i>	Apr-03-18 16:00	Apr-03-18 16:00	Apr-03-18 16:00	Apr-05-18 12:00	Apr-05-18 12:00	Apr-05-18 12:00
	<i>Analyzed:</i>	Apr-04-18 15:08	Apr-04-18 15:36	Apr-04-18 16:09	Apr-05-18 16:17	Apr-05-18 16:37	Apr-05-18 16:58
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<14.9 14.9	20.5 15.0	36.8 15.0	<15.0 15.0
Diesel Range Organics (DRO)		2870 15.0	1080 15.0	64.3 14.9	673 15.0	2130 15.0	43.3 15.0
Oil Range Hydrocarbons (ORO)		63.4 15.0	45.6 15.0	<14.9 14.9	99.9 15.0	336 15.0	<15.0 15.0
Total TPH		2933.4 15	1125.6 15	64.3 14.9	793.4 15	2502.8 15	43.3 15

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

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

Kelsey Brooks
Project Manager

- 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 Phillips State

Work Orders : 581097,

Lab Batch #: 3045685

Sample: 581097-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/04/18 15:08

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.3	99.9	94	70-135	
o-Terphenyl	64.1	50.0	128	70-135	

Lab Batch #: 3045685

Sample: 581097-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/04/18 15:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.9	99.7	100	70-135	
o-Terphenyl	63.9	49.9	128	70-135	

Lab Batch #: 3045685

Sample: 581097-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/04/18 16:09

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	99.6	91	70-135	
o-Terphenyl	47.6	49.8	96	70-135	

Lab Batch #: 3045830

Sample: 581097-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 16:17

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.7	99.7	99	70-135	
o-Terphenyl	48.5	49.9	97	70-135	

Lab Batch #: 3045830

Sample: 581097-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 16:37

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.5	99.7	99	70-135	
o-Terphenyl	45.4	49.9	91	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 Phillips State

Work Orders : 581097,

Lab Batch #: 3045830

Sample: 581097-006 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 16:58

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.2	99.9	98	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

Lab Batch #: 3045814

Sample: 581097-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 17:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	70-130	
4-Bromofluorobenzene	0.0304	0.0300	101	70-130	

Lab Batch #: 3045814

Sample: 581097-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 17:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	70-130	
4-Bromofluorobenzene	0.0295	0.0300	98	70-130	

Lab Batch #: 3045814

Sample: 581097-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 18:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	70-130	
4-Bromofluorobenzene	0.0282	0.0300	94	70-130	

Lab Batch #: 3045814

Sample: 581097-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 18:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	70-130	
4-Bromofluorobenzene	0.0258	0.0300	86	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 Phillips State

Work Orders : 581097,

Lab Batch #: 3045814

Sample: 581097-005 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 19:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	70-130	
4-Bromofluorobenzene	0.0263	0.0300	88	70-130	

Lab Batch #: 3045814

Sample: 581097-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 19:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	70-130	
4-Bromofluorobenzene	0.0293	0.0300	98	70-130	

Lab Batch #: 3045685

Sample: 7641971-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/04/18 02:48

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.3	100	99	70-135	
o-Terphenyl	50.5	50.0	101	70-135	

Lab Batch #: 3045814

Sample: 7642116-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/05/18 11:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	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	

Lab Batch #: 3045830

Sample: 7642101-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/05/18 13:09

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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	

* 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 Phillips State

Work Orders : 581097,

Lab Batch #: 3045685

Sample: 7641971-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/04/18 03:19

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	54.4	50.0	109	70-135	

Lab Batch #: 3045814

Sample: 7642116-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/05/18 09:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	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 #: 3045830

Sample: 7642101-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/05/18 13:31

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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 #: 3045685

Sample: 7641971-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/04/18 03:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	56.8	50.0	114	70-135	

Lab Batch #: 3045814

Sample: 7642116-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/05/18 09:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	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	

* 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 Phillips State

Work Orders : 581097,

Lab Batch #: 3045830

Sample: 7642101-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/05/18 13:52

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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 #: 3045685

Sample: 581095-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/04/18 04:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.9	119	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

Lab Batch #: 3045814

Sample: 581096-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 10:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	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 #: 3045830

Sample: 581096-005 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 15:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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 #: 3045685

Sample: 581095-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/04/18 05:21

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	53.2	49.9	107	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 Phillips State

Work Orders : 581097,

Lab Batch #: 3045814

Sample: 581096-004 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 10:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	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 #: 3045830

Sample: 581096-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/05/18 15:57

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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 Phillips State

Work Order #: 581097

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 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.00201	0.100	0.127	127	0.101	0.120	119	6	70-130	35	
Toluene	<0.00201	0.100	0.120	120	0.101	0.113	112	6	70-130	35	
Ethylbenzene	<0.00201	0.100	0.115	115	0.101	0.108	107	6	70-130	35	
m,p-Xylenes	<0.00402	0.201	0.238	118	0.202	0.223	110	7	70-130	35	
o-Xylene	<0.00201	0.100	0.117	117	0.101	0.111	110	5	70-130	35	

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

Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<5.00	250	241	96	250	236	94	2	90-110	20	

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

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

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

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: COG Phillips State

Work Order #: 581097

Project ID:

Analyst: ARM

Date Prepared: 04/03/2018

Date Analyzed: 04/04/2018

Lab Batch ID: 3045685

Sample: 7641971-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1000	100	1000	1000	100	0	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	1040	104	1000	1050	105	1	70-135	20	

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	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	859	86	1000	897	90	4	70-135	20	
Diesel Range Organics (DRO)	<15.0	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 Phillips State

Work Order # : 581097

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 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0537	53	0.0994	0.0583	59	8	70-130	35	X
Toluene	<0.00202	0.101	0.0365	36	0.0994	0.0414	42	13	70-130	35	X
Ethylbenzene	<0.00202	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: 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

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	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

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	41.0	250	283	97	250	280	96	1	90-110	20	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries



Project Name: COG Phillips State

Work Order # : 581097

Project ID:

Lab Batch ID: 3045685

QC- Sample ID: 581095-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 04/04/2018

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)	<15.0	999	960	96	997	971	97	1	70-135	20	
Diesel Range Organics (DRO)	26.5	999	1000	97	997	1010	99	1	70-135	20	

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 $[D] = 100 * (C - A) / B$
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.



Phoenix, Arizona (480-355-0900)

581697-

Final 1.000



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: TRC Solutions, Inc

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

Work Order #: 581097

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	TPH received in bulk container
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	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: 04/03/2018

Checklist reviewed by:

Jessica Kramer

Date: 04/03/2018

Analytical Report 585254

for
TRC Solutions, Inc

Project Manager: Joel Lowry

Phillips State #1 IRP-4882

14-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)



14-MAY-18

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

Reference: XENCO Report No(s): **585254**
Phillips State #1 IRP-4882
Project Address: Lea 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) 585254. 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. 585254 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

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

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



Sample Cross Reference 585254



TRC Solutions, Inc, Midland, TX

Phillips State #1 IRP-4882

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
NSW b	S	04-26-18 10:42	1 ft	585254-001
ESW b	S	04-26-18 14:12	1 ft	585254-002
SSW b	S	04-27-18 16:40	1 ft	585254-003
WSW b	S	04-27-18 11:05	1 ft	585254-004



CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: Phillips State #1 IRP-4882

Project ID:

Work Order Number(s): 585254

Report Date: 14-MAY-18

Date Received: 05/08/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3049874 Chloride by EPA 300

Lab Sample ID 585254-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 585254-001, -002, -003, -004.

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



Certificate of Analysis Summary 585254

TRC Solutions, Inc, Midland, TX

Project Name: Phillips State #1 IRP-4882



Project Id:

Contact: Joel Lowry

Project Location: Lea Co, NM

Date Received in Lab: Tue May-08-18 10:30 am

Report Date: 14-MAY-18

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	585254-001	585254-002	585254-003	585254-004		
	Field Id:	NSW b	ESW b	SSW b	WSW b		
	Depth:	1- ft	1- ft	1- ft	1- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Apr-26-18 10:42	Apr-26-18 14:12	Apr-27-18 16:40	Apr-27-18 11:05		
Chloride by EPA 300	Extracted:	May-11-18 16:30	May-11-18 16:30	May-11-18 16:30	May-11-18 16:30		
	Analyzed:	May-11-18 22:14	May-11-18 22:44	May-11-18 22:50	May-11-18 23:08		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		121 4.93	450 25.0	422 49.9	524 4.94		
TPH by SW8015 Mod	Extracted:		May-08-18 16:00				
	Analyzed:		May-09-18 05:09				
	Units/RL:		mg/kg RL				
Gasoline Range Hydrocarbons (GRO)			119 15.0				
Diesel Range Organics (DRO)			3740 15.0				
Oil Range Hydrocarbons (ORO)			31.9 15.0				
Total TPH			3890.9 15				

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

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

Kelsey Brooks
Project Manager

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

SQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



Form 2 - Surrogate Recoveries

Project Name: Phillips State #1 IRP-4882

Work Orders : 585254,

Lab Batch #: 3049423

Sample: 585254-002 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/09/18 05:09

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.3	99.8	98	70-135	
o-Terphenyl	62.0	49.9	124	70-135	

Lab Batch #: 3049423

Sample: 7644346-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/08/18 20:41

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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	

* 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: Phillips State #1 IRP-4882

Work Orders : 585254,

Lab Batch #: 3049423

Sample: 585093-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/18 22:55

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	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: Phillips State #1 IRP-4882

Work Order #: 585254

Project ID:

Analyst: SCM

Date Prepared: 05/11/2018

Date Analyzed: 05/11/2018

Lab Batch ID: 3049874

Sample: 7644562-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<5.00	250	275	110	250	273	109	1	90-110	20	

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	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	924	92	1000	946	95	2	70-135	20	
Diesel Range Organics (DRO)	<15.0	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: Phillips State #1 IRP-4882

Work Order #: 585254

Project ID:

Lab Batch ID: 3049874

QC- Sample ID: 584965-012 S

Batch #: 1 Matrix: Soil

Date Analyzed: 05/11/2018

Date Prepared: 05/11/2018

Analyst: SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<4.99	250	295	118	250	292	117	1	90-110	20	X

Lab Batch ID: 3049874

QC- Sample ID: 585254-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 05/11/2018

Date Prepared: 05/11/2018

Analyst: SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	121	247	405	115	247	410	117	1	90-110	20	X

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)	<15.0	998	912	91	999	929	93	2	70-135	20	
Diesel Range Organics (DRO)	<15.0	998	1020	102	999	1030	103	1	70-135	20	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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

CHAIN OF CUSTODY

Page 1 Of 1

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

Midland, Texas (432-704-5251)

www.xenco.com

Phoenix, Arizona (480-355-0900)

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes									
Company Name / Branch: TRC Environmental Corporation				Project Name/Number: <i>Pumps Site #1 IDP-4082</i>																	
Company Address: 10 Destia Drive, Suite 150E, Midland, TX, 79705				Project Location: <i>Lea, Co NM</i>																	
Email: jlowry@trcsolutions.com				Phone No: 432-466-4450				Invoice To: <i>COD CO Becky Haskell</i>													
Project Contact: Joel Lowry				Invoice:																	
Sampler's Name Joel Lowry																					
No.	Field ID / Point of Collection	Sample Depth	Date	Time	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 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 Temp: <i>1.2</i> CF:(0-6: -0.2°C) (6-23: +0.2°C) Corrected Temp: <i>1.0</i> IR ID: R-8		
1	<i>NSWB</i>	1'	<i>4/26/18</i>	<i>10:42</i>	<i>S</i>	<i>1</i>									X	X	X				
2	<i>ESWB</i>	1'	<i>4/26/18</i>	<i>2:12</i>	<i>I</i>	<i>1</i>									X	X					
3	<i>SSWB</i>	1'	<i>4/27/18</i>	<i>4:40</i>	<i>I</i>	<i>1</i>									X	X					
4	<i>WSWB</i>	1'	<i>4/27/18</i>	<i>11:05</i>	<i>I</i>	<i>1</i>									X						
5																					
6																					
7																					
8																					
9																					
10																					
Turnaround Time (Business days)								Data Deliverable Information								Notes:					
<input type="checkbox"/> Same Day TAT <input checked="" type="checkbox"/> 5 Day TAT								<input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level IV (Full Data Pkg /raw data)								<i>jlowry@trcsolutions.com</i>					
<input type="checkbox"/> Next Day EMERGENCY <input type="checkbox"/> 7 Day TAT								<input type="checkbox"/> Level III Std OC+ Forms <input type="checkbox"/> TRRP Level IV								<i>zconder@trcsolutions.com</i>					
<input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> Contract TAT								<input type="checkbox"/> Level 3 (CLP Forms) <input type="checkbox"/> UST / RG -411								<i>kblackburn@trcsolutions.com</i>					
<input type="checkbox"/> 3 Day EMERGENCY								<input type="checkbox"/> TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm																FED-EX / UPS: Tracking #					
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																					
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Preserved Where Applicable:					
<i>[Signature]</i>		<i>5/1/18 3:45</i>		<i>[Signature]</i>		<i>5/1/18 4:38</i>		<i>[Signature]</i>		<i>5/1/18 10:30</i>		<i>[Signature]</i>		<i>On Ice</i>		<i>Thermo, Corr. Factor</i>					
Reinquired by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Preserved Where Applicable:					
<i>[Signature]</i>		<i>5/1/18 3:45</i>		<i>[Signature]</i>		<i>5/1/18 4:38</i>		<i>[Signature]</i>		<i>5/1/18 10:30</i>		<i>[Signature]</i>		<i>On Ice</i>		<i>Thermo, Corr. Factor</i>					



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: TRC Solutions, Inc

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

Work Order #: 585254

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: 05/08/2018

Analytical Report 587535

for
TRC Solutions, Inc

Project Manager: Joel Lowry

Phillips State

05-JUN-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 (T104704400-18-14)
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)



05-JUN-18

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

Reference: XENCO Report No(s): **587535**
Phillips State
Project Address: Lea 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) 587535. 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. 587535 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

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



Sample Cross Reference 587535



TRC Solutions, Inc, Midland, TX

Phillips State

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
ESW	S	05-29-18 08:00		587535-001



CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: Phillips State

Project ID:

Work Order Number(s): 587535

Report Date: 05-JUN-18

Date Received: 05/30/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 587535

TRC Solutions, Inc, Midland, TX

Project Name: Phillips State



Project Id:

Contact: Joel Lowry

Project Location: Lea County, NM

Date Received in Lab: Wed May-30-18 10:30 am

Report Date: 05-JUN-18

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id: 587535-001 Field Id: ESW Depth: Matrix: SOIL Sampled: May-29-18 08:00					
Chloride by EPA 300	Extracted: May-31-18 12:00 Analyzed: Jun-01-18 10:16 Units/RL: mg/kg RL					
Chloride	145 5.00					
TPH by SW8015 Mod	Extracted: May-31-18 07:00 Analyzed: May-31-18 19:57 Units/RL: mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<15.0 15.0					
Diesel Range Organics (DRO)	<15.0 15.0					
Oil Range Hydrocarbons (ORO)	<15.0 15.0					
Total TPH	<15 15					

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

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

Kelsey Brooks
Project Manager

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

SQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



Form 2 - Surrogate Recoveries

Project Name: Phillips State

Work Orders : 587535,

Lab Batch #: 3052046

Sample: 587535-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/18 19:57

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.8	99.7	86	70-135	
o-Terphenyl	44.5	49.9	89	70-135	

Lab Batch #: 3052046

Sample: 7655868-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/31/18 09:54

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.1	100	86	70-135	
o-Terphenyl	46.2	50.0	92	70-135	

Lab Batch #: 3052046

Sample: 7655868-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/31/18 10:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	59.6	50.0	119	70-135	

Lab Batch #: 3052046

Sample: 7655868-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/31/18 10:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	60.3	50.0	121	70-135	

Lab Batch #: 3052046

Sample: 587529-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/18 11:19

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.9	102	70-135	
o-Terphenyl	51.7	50.0	103	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: Phillips State

Work Orders : 587535,

Lab Batch #: 3052046

Sample: 587529-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/31/18 11:41

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.8	103	70-135	
o-Terphenyl	52.1	49.9	104	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: Phillips State

Work Order #: 587535

Project ID:

Analyst: SCM

Date Prepared: 05/31/2018

Date Analyzed: 06/01/2018

Lab Batch ID: 3052090

Sample: 7655801-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<5.00	250	275	110	250	274	110	0	90-110	20	

Analyst: ARM

Date Prepared: 05/31/2018

Date Analyzed: 05/31/2018

Lab Batch ID: 3052046

Sample: 7655868-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	920	92	1000	953	95	4	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	993	99	1000	1040	104	5	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: Phillips State

Work Order # : 587535

Project ID:

Lab Batch ID: 3052090

QC- Sample ID: 587510-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/01/2018

Date Prepared: 05/31/2018

Analyst: SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	30.9	246	313	115	246	318	117	2	90-110	20	X

Lab Batch ID: 3052090

QC- Sample ID: 587532-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/01/2018

Date Prepared: 05/31/2018

Analyst: SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	74.1	249	356	113	249	354	112	1	90-110	20	X

Lab Batch ID: 3052046

QC- Sample ID: 587529-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 05/31/2018

Date Prepared: 05/31/2018

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)	<15.0	999	896	90	998	894	90	0	70-135	20	
Diesel Range Organics (DRO)	<15.0	999	979	98	998	980	98	0	70-135	20	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



☐ 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 214-802-0300
☐ 12600 West 1-20 East, Odessa, TX 79765 432-563-1800

Serial #: 330916 Page of

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

Company/City		Phone		Lab Only:	
Project Name-Location		Previously done at XENCO		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.	
Project State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other		Project Manager (PM):			
E-mail Results to		EPM and TRASKELLE CONSULTING			
Invoice to		Accounting			
Bill to:		C/O OPERATING CO/BECKY HARREL			
Quote/Pricing:		P.O. No:			
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		Signature			
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 VOA: VOA: 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		TATASAP 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:	



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: TRC Solutions, Inc

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

Work Order #: 587535

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)?	1.1
#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: 05/30/2018

Checklist reviewed by:

Kelsey Brooks

Date: 06/01/2018



Certificate of Analysis Summary 593804

TRC Solutions, Inc, Midland, TX

Project Name: Phillips State #1 TB



Project Id:

Contact: Joel Lowry

Project Location: Lea Co, NM

Date Received in Lab: Fri Jul-27-18 10:35 am

Report Date: 02-AUG-18

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	593804-001	593804-002				
	Field Id:	SP#1b @ 2'	SP#2b @ 3.5'				
	Depth:	2- ft	3.5- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Jul-25-18 10:00	Jul-25-18 10:05				
Chloride by EPA 300	Extracted:	Aug-01-18 15:30	Aug-01-18 15:30				
	Analyzed:	Aug-01-18 19:58	Aug-01-18 21:19				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		212 4.97	181 4.96				
TPH by SW8015 Mod	Extracted:	Jul-27-18 16:00	Jul-27-18 16:00				
	Analyzed:	Jul-28-18 01:39	Jul-28-18 01:59				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				
Diesel Range Organics (DRO)		175 15.0	112 15.0				
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0				
Total TPH		175 15	112 15				

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

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

Kelsey Brooks
Project Manager

Analytical Report 593804

for
TRC Solutions, Inc

Project Manager: Joel Lowry

Phillips State #1 TB

02-AUG-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)



02-AUG-18

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

Reference: XENCO Report No(s): **593804**
Phillips State #1 TB
Project Address: Lea 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) 593804. 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. 593804 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

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Sample Cross Reference 593804



TRC Solutions, Inc, Midland, TX

Phillips State #1 TB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP#1b @ 2'	S	07-25-18 10:00	2 ft	593804-001
SP#2b @ 3.5'	S	07-25-18 10:05	3.5 ft	593804-002



CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: Phillips State #1 TB

Project ID:

Work Order Number(s): 593804

Report Date: 02-AUG-18

Date Received: 07/27/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 593804



TRC Solutions, Inc, Midland, TX

Phillips State #1 TB

Sample Id: **SP#1b @ 2'**

Matrix: Soil

Date Received: 07.27.18 10.35

Lab Sample Id: 593804-001

Date Collected: 07.25.18 10.00

Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 08.01.18 15.30

Basis: Wet Weight

Seq Number: 3058608

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	212	4.97	mg/kg	08.01.18 19.58		1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.27.18 16.00

Basis: Wet Weight

Seq Number: 3058101

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.28.18 01.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	175	15.0	mg/kg	07.28.18 01.39		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.28.18 01.39	U	1
Total TPH	PHC635	175	15	mg/kg	07.28.18 01.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	07.28.18 01.39	
o-Terphenyl	84-15-1	90	%	70-135	07.28.18 01.39	



Certificate of Analytical Results 593804



TRC Solutions, Inc, Midland, TX

Phillips State #1 TB

Sample Id: **SP#2b @ 3.5'**

Matrix: Soil

Date Received: 07.27.18 10.35

Lab Sample Id: 593804-002

Date Collected: 07.25.18 10.05

Sample Depth: 3.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 08.01.18 15.30

Basis: Wet Weight

Seq Number: 3058608

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	181	4.96	mg/kg	08.01.18 21.19		1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 07.27.18 16.00

Basis: Wet Weight

Seq Number: 3058101

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.28.18 01.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	112	15.0	mg/kg	07.28.18 01.59		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	07.28.18 01.59	U	1
Total TPH	PHC635	112	15	mg/kg	07.28.18 01.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	07.28.18 01.59	
o-Terphenyl	84-15-1	86	%	70-135	07.28.18 01.59	

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

SQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 593804

TRC Solutions, Inc Phillips State #1 TB

Analytical Method: Chloride by EPA 300

Seq Number: 3058608

MB Sample Id: 7659579-1-BLK

Matrix: Solid

LCS Sample Id: 7659579-1-BKS

Prep Method: E300P

Date Prep: 08.01.18

LCSD Sample Id: 7659579-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.99	250	258	103	254	102	90-110	2	20	mg/kg	08.01.18 19:45	

Analytical Method: Chloride by EPA 300

Seq Number: 3058608

Parent Sample Id: 593804-001

Matrix: Soil

MS Sample Id: 593804-001 S

Prep Method: E300P

Date Prep: 08.01.18

MSD Sample Id: 593804-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	212	249	479	107	470	104	90-110	2	20	mg/kg	08.01.18 20:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3058608

Parent Sample Id: 593866-001

Matrix: Soil

MS Sample Id: 593866-001 S

Prep Method: E300P

Date Prep: 08.01.18

MSD Sample Id: 593866-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	340	248	597	104	591	101	90-110	1	20	mg/kg	08.01.18 21:39	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3058101

MB Sample Id: 7659283-1-BLK

Matrix: Solid

LCS Sample Id: 7659283-1-BKS

Prep Method: TX1005P

Date Prep: 07.27.18

LCSD Sample Id: 7659283-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	924	92	929	93	70-135	1	20	mg/kg	07.27.18 22:18	
Diesel Range Organics (DRO)	<15.0	1000	935	94	952	95	70-135	2	20	mg/kg	07.27.18 22:18	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		123		123		70-135	%	07.27.18 22:18
o-Terphenyl	92		95		95		70-135	%	07.27.18 22:18

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

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

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

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



TRC Solutions, Inc

Phillips State #1 TB

Analytical Method: TPH by SW8015 Mod

Seq Number: 3058101

Parent Sample Id: 593803-021

Matrix: Soil

MS Sample Id: 593803-021 S

Prep Method: TX1005P

Date Prep: 07.27.18

MSD Sample Id: 593803-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	862	86	881	88	70-135	2	20	mg/kg	07.27.18 23:18	
Diesel Range Organics (DRO)	<15.0	999	897	90	926	93	70-135	3	20	mg/kg	07.27.18 23:18	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		123		70-135	%	07.27.18 23:18
o-Terphenyl	101		98		70-135	%	07.27.18 23:18

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

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

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

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

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

[illegible]



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: TRC Solutions, Inc

Date/ Time Received: 07/27/2018 10:35:00 AM

Work Order #: 593804

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)?	.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	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: 07/27/2018

Checklist reviewed by:

Kelsey Brooks

Date: 07/30/2018



Figure 1 - View of the affected area, facing northwest.



Figure 2 - View of the affected area, facing west.



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



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



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

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating, LLC (OGRID# 229137)	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No.: 432-683-7443
Facility Name: Phillips State #001	Facility Type: Tank Battery

Surface Owner: State	Mineral Owner: State	API No.: 30-025-30956
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LOCATION OF RELEASE

Unit Letter O	Section 17	Township 21S	Range 35E	Feet from the 990	North/South Line South	Feet from the 1980	East/West Line East	County Lea
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Latitude: 32.4744949 Longitude: -103.3875351 NAD83

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release: 3bbls Oil & 13bbls PW	Volume Recovered: 0bbls oil & 0bbls PW
Source of Release: Heater Treater	Date and Hour of Occurrence: 11/26/2017	Date and Hour of Discovery: 11/26/2017 9:00am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		

RECEIVED

By Olivia Yu at 9:59 am, Nov 28, 2017

Describe Cause of Problem and Remedial Action Taken.*

The heater treater developed a hole in the bottom of the vessel. The vessel will be evaluated for repair or replacement.

Describe Area Affected and Cleanup Action Taken.*

The release remained inside of the unlined earthen berms surrounding the heater treater. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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

Signature: <i>Sheldon Hitchcock</i>		OIL CONSERVATION DIVISION	
Printed Name: Sheldon L. Hitchcock		Approved by Environmental Specialist: <i>oy</i>	
Title: HSE Coordinator		Approval Date: 11/28/2017 Expiration Date:	
E-mail Address: slhitchcock@concho.com		Conditions of Approval:	
Date: 11/27/2017 Phone: 575-746-2010		see attached directive	
		Attached <input checked="" type="checkbox"/>	

* Attach Additional Sheets If Necessary

1RP-4883

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