APPROVED
By Olivia Yu at 3:36 pm, Nov 06, 2018

NMOCD grants closure to the remediated area for 1RP-4883 and deferral for the identified section to be addressed at time of abandonment, retrofit, or inactivity.

REMEDIATION SUMMARY AND

RISK-BASED SITE CLOSURE REQUEST

COG Operating, LLC
Phillips State #001
Lea County, New Mexico
Unit Letter "O", Section 17, Township 21 South, Range 35 East
Latitude 32.4744949° North, Longitude 103.3875351° West
NMOCD Reference No. 1RP-4883

Prepared For:

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

Prepared By:

TRC Environmental Corporation
10 Desta Drive, Suite 150E
Midland, Texas 79705

September 2018

Joel Lowry
Senior Project Manager

Curt Stanley
Senior Project Manager

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INTRODUCTION & BACKGROUND INFORMATION

TRC Environmental Corporation (TRC), on behalf of COG Operating, LLC (COG), has prepared this *Remediation Summary and Risk-Based Soil Closure Request* for the Site known as Phillips State #001. The legal description of the Site is Unit Letter "O", Section 17, Township 21 South, Range 35 East, in Lea County, New Mexico. The subject property is owned by the State of New Mexico and administered by New Mexico State Land Office (NMSLO). The GPS coordinates for the site are N 32.4744949° W 103.3875351°. Please reference Figure 1 for the Site Location Map and Figure 2 for the Site & Sample Location Map.

On November 26, 2017, COG discovered a release had occurred at the Phillips State #001. The release was attributed to the heater treater developing a hole in the bottom if 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 NMSLO were notified. A copy of the Form C-141 is provided in Appendix C.

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 indicated 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. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

The NMOCD guidelines indicate the Phillips State #001 Release Site has a ranking score of ten (10). Recommended Remediation Action Levels (RRAL) for a site with a ranking score of ten (10) points are as follows:

- Benzene – 10 mg/kg
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) – 50 mg/kg
- Total Petroleum Hydrocarbons (TPH) – 1,000 mg/kg
- Chloride – 600 mg/kg

INITIAL INVESTIGATION AND PROPOSED REMEDIATION WORKPLAN

On December 21, 2017, TRC conducted an initial investigation at the Release Site. During the initial investigation, a hand-augured 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 the (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 to presence of an impenetrable rock layer.

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 chloride concentration of 687 mg/kg. Soil sample locations are depicted in Figure 2 – Site and Sample Location Map. Laboratory analytical results are summarized in Table 1 - Concentrations of Benzene, BTEX, TPH and Chloride in Soil. Laboratory analytical reports are provided in Appendix A.

On February 7, 2018, COG submitted a *Soil Investigation Summary and Proposed Remediation Workplan (Workplan)* to the NMOCD and NMSLO, proposing the following remediation activities designed to advance the site toward an 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 NMOCD RRAL has been removed.
- Advance the sidewall of the excavation in the area characterized by soil sample North @ 6" until field test indicates 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 approximately 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 "like" material.
- Upon completion of remediation activities and receipt of laboratory analytical results from confirmation soil samples, TRC will prepare and submit a "Remediation Summary and Site Closure Request" to the NMOCD and NMSLO 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.

SUMMARY OF SOIL REMEDIATION ACTIVITIES

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 test 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 (4) 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 Release 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 sample ESW* exhibited a TPH concentration of less than the applicable laboratory reporting limit and a chloride concentration of 145 mg/kg.

On June 26, 2018, TRC submitted a *Remediation Summary and Permission to Backfill Request* to the NMOCD and NMSLO summarizing remediation activities conducted to date and requesting permission to backfill the excavated area. Upon review of the *Remediation Summary and Permission to Backfill Request* it was determined the further delineation in the areas characterized by soil samples FL-1 and FL-2 would be required.

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 #1 @ 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.

On August 7, 2018, TRC submitted an *Amended Remediation Summary and Permission to Backfill Request* to the NMOCD and NMSLO summarizing remediation activities conducted to date and laboratory analytical results from delineation soil samples. The permission to backfill request was subsequently approved.

On August 30, 2018, the excavation was backfilled with locally sourced, non-impacted, like material and contoured to meet the needs of the facility. 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 August 1 and 2, 2018, approximately one hundred twenty (120) cubic yards of impacted soil was transported to R360 Halfway facility.

SITE CLOSURE REQUEST

Remediation activities were conducted in accordance with the NMOCD. Impacted soil within the release margins was excavated and transported to an NMOCD-approved disposal facility. Impacted soil remaining in-situ in the floor of the excavated area and adjacent to the heater treater affected above the NMOCD RRAL for TPH and chloride will be further investigated and/or remediated at time of abandonment (TOA). Based on laboratory analytical results and field activities conducted to date, TRC recommends COG provide copies of this *Remediation Summary and Risk-Based Soil Closure Request* to the NMOCD and BLM and request closure status to the Phillips State #001.

LIMITATIONS

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

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

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

DISTRIBUTION

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Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

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2827 N. Dal Paso, Suite 117
Hobbs, New Mexico 88240

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Midland, Texas 79701

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10 Desta Drive, Suite 150E
Midland, Texas 79705

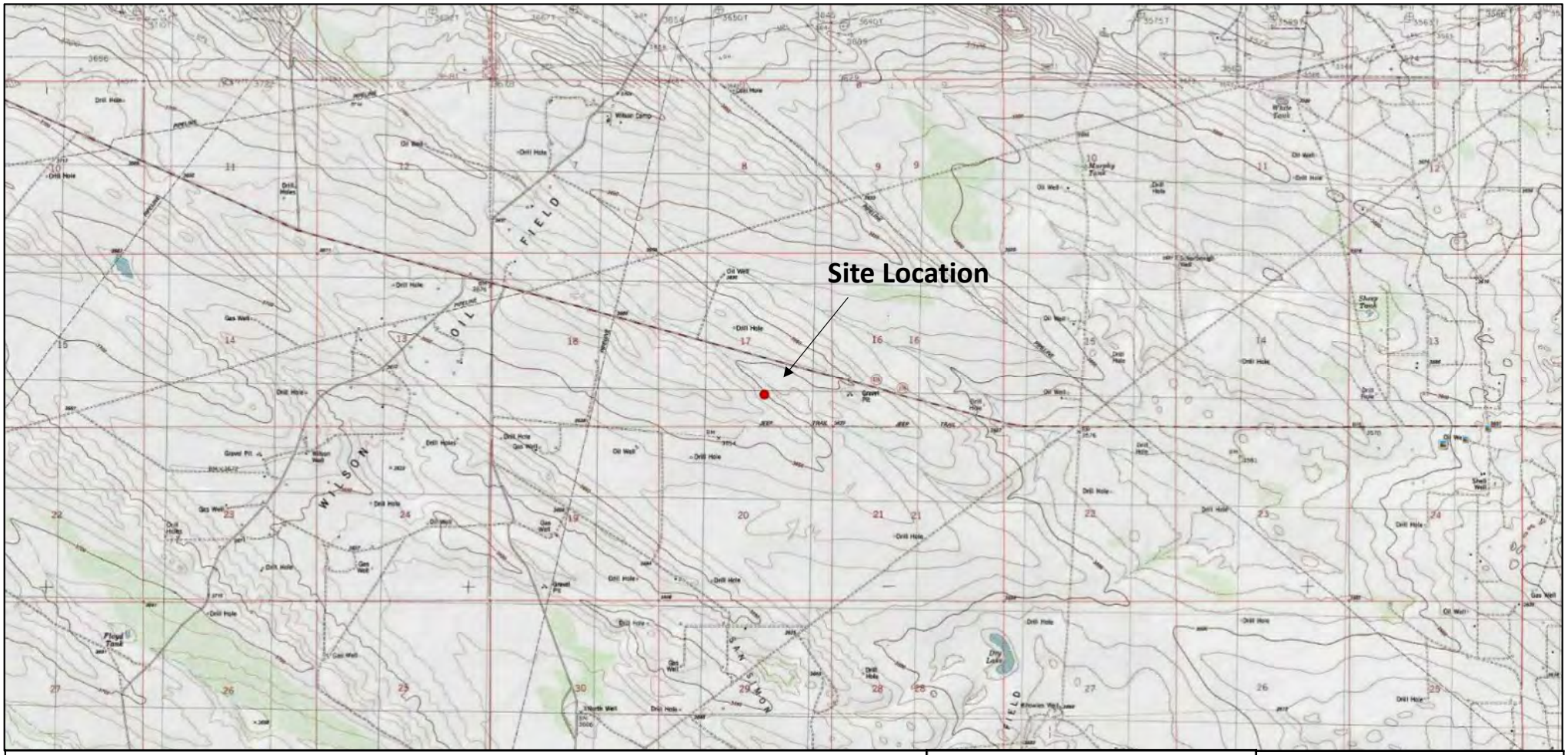

Figure 1

Site Location Map

COG Operating, LLC

Phillips State #001

Lea County, New Mexico

Scale 1" = ~4,500'	
Drafted by: BC	Checked by: JL
Draft: August 5, 2018	
Lat. N 32.4744949 Long. W 103.3875351	
UL "O", Sec. 17, T21S, R35E	
TRC Proj. No.: 293168	

TRC
Results you can rely on
10 Desta Drive Suite 150E
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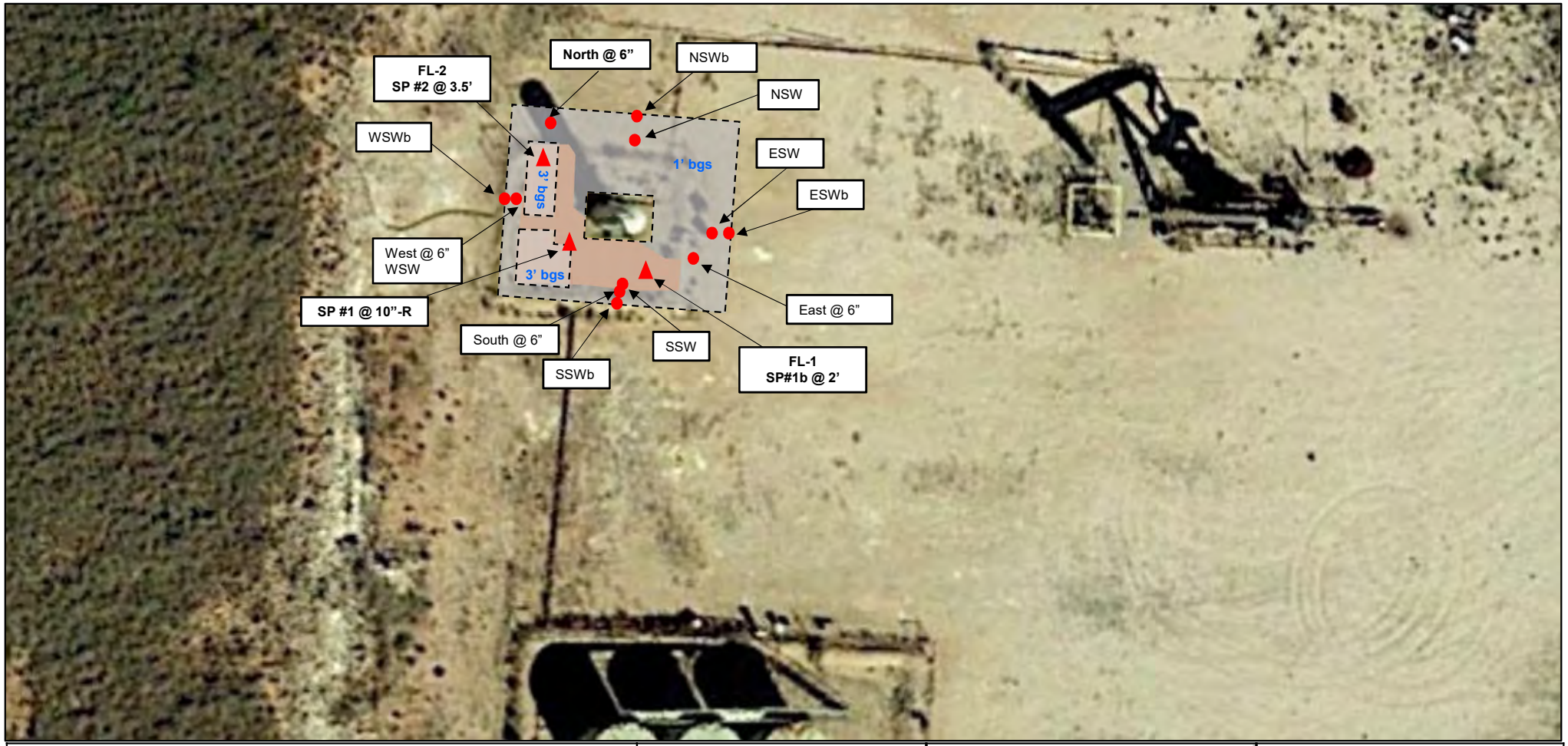

LEGEND:

- 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: BC	Checked by: JL
Draft: September 5, 2018	
Lat. N 32.4744949 Long. W 103.3875351	
UL "O", Sec. 17, T21S, R35E	
TRC Proj. No.: 293168	

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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 - XYLENES	o - XYLENE	TOTAL XYLENES	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
SP#1b @ 2'	7/25/2018	In-Situ	2'	-	-	-	-	-	-	-	<15.0	175	<15.0	175	212
SP #2b @ 3.5'	7/25/2018	In-Situ	3.5'	-	-	-	-	-	-	-	<15.0	112	<15.0	112	181
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,

Kelsey Brooks
Project Manager

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

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

Kelsey Brooks
Project Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ 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 #001

Work Orders : 572225,

Project ID:

Lab Batch #: 3037397 **Sample:** 572225-004 / SMP **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,

Project ID:

Lab Batch #: 3037445 **Sample:** 572225-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/03/18 20:22

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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,

Project ID:

Lab Batch #: 3037523 **Sample:** 572225-004 / SMP **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,

Project ID:

Lab Batch #: 3037397 **Sample:** 572225-002 / SMP **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,

Project ID:

Lab Batch #: 3037542 **Sample:** 7637024-1-BLK / BLK **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,

Project ID:

Lab Batch #: 3037523 **Sample:** 7637012-1-BKS / BKS **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,

Project ID:

Lab Batch #: 3037445 **Sample:** 572221-022 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/03/18 16:57

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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. Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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,

Project ID:

Lab Batch #: 3037542 **Sample:** 572221-024 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/04/18 16:49

BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY 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

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0266	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 **Project ID:**

Analyst: JTR **Date Prepared:** 01/03/2018 **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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	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 **Project ID:**

Analyst: DHE **Date Prepared:** 01/03/2018 **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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<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. Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<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*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

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

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

Form 3 - MS / MSD Recoveries

Project Name: 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.

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200) | San Antonio, Texas (210-509-3334) | Phoenix, Arizona (480-355-0900)

Dallas Texas (214-902-0300) | Midland, Texas (432-704-5251)

www.xenco.com

572225

Xenco Job # 572225

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation

Company Address: 2057 Commerce Drive, Midland, TX 79703

Email: jlowry@trcsolutions.com | Phone No: 432-466-4450

Project Contact: Joel Lowry

Samplers's Name Joel Lowry

Project Information

Project Name/Number: Phillips State #001

Project Location: Lea Co, NM

Invoice To: COG Operating C/O Becky Haskell

Invoice:

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Field Comments
1	SP #1 @ 10"-R	10"	12/21/2017	2:45	s	1									x	x	x	
2	North @ 6"	6"	12/21/2017	2:50	s	1									x	x	x	
3	East @ 6"	6"	12/21/2017	2:55	s	1									x	x	x	
4	South @ 6"	6"	12/21/2017	3:00	s	1									x	x	x	
5	West @ 6"	6"	12/21/2017	3:05	s	1									x	x	x	
6																		
7																		
8																		
9																		
10																		

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

Notes:

jlowry@trcsolutions.com
rhaskell@concho.com
kblackburn@trcsolutions.com
dneel2@concho.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		12/27 3:05		2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time: 12/27 5:14	Received By: Brenda Ward	Custody Seal # 12/27/17 BW	Preserved where applicable	On Ice: C

Cooler Temp. FR 3 | Thermo. Corr. Factor 1.2/1.1 | FR 3 -0.1

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

Inter-Office Shipment

IOS Number **1053903**

Date/Time: 12/28/17 17:44
Lab# From: **Lubbock**
Lab# To: **Houston**

Created by: Brenda Ward
Delivery Priority:
Air Bill No.: 771105606137

Please send report to: Kelsey Brooks
Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424
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

IOS Number **1053903**

Date/Time:	12/28/17 17:44	Created by:	Brenda Ward
Lab# From:	**Lubbock**	Delivery Priority:	
Lab# To:	**Houston**	Air Bill No.:	771105606137

Please send report to: Kelsey Brooks
Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424
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
Brenda Ward

Date Relinquished: 12/28/2017

Received By: Rene Vandenberghe

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. Vandenberghe Date: 12/29/2017
Rene Vandenberghe

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 Date: 12/28/2017
Brenda Ward

Checklist reviewed by: Kelsey Brooks Date: 12/31/2017
Kelsey Brooks

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

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

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

Analysis Requested													
	Lab Id:	581097-001		581097-002		581097-003		581097-004		581097-005		581097-006	
	Field Id:	FL-1		FL-2		NSW		SSW		ESW		WSW	
	Depth:	1- ft		3- ft		6- ft		6- ft		6- ft		6- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	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	***Extracted:***	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	
	Analyzed:	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	
	Units/RL:	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	***Extracted:***	Apr-03-18 16:45		Apr-03-18 16:45									
	Analyzed:	Apr-03-18 23:28		Apr-03-18 23:33									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Chloride		1260	25.0	968	25.0								
TPH by SW8015 Mod	***Extracted:***	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	
	Analyzed:	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	
	Units/RL:	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

Kelsey Brooks
Project Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: COG Phillips State

Work Orders : 581097,

Project ID:

Lab Batch #: 3045685 **Sample:** 581097-001 / SMP **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,

Project ID:

Lab Batch #: 3045830 **Sample:** 581097-006 / SMP **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,

Project ID:

Lab Batch #: 3045814 **Sample:** 581097-005 / SMP **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,

Project ID:

Lab Batch #: 3045685 **Sample:** 7641971-1-BKS / BKS **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,

Project ID:

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

Project ID:

Lab Batch #: 3045814 **Sample:** 581096-004 SD / MSD **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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00201	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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<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*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

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

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

Form 3 - MS / MSD Recoveries

Project Name: COG 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.

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200) | San Antonio, Texas (210-509-3334) | Phoenix, Arizona (480-355-0900)

Dallas Texas (214-902-0300) | Midland, Texas (432-704-5251)

www.xenco.com

Xenco Quote # | Xenco Job # 581097

Client / Reporting Information

Company Name / Branch: TRC Environmental

Company Address: 2057 Commerce Drive, Midland, TX 79703

Email: jlowry@trcsolutions.com | Phone No:

Project Contact: Joel Lowry

Samplers's Name Joel Lowry

Project Information

Project Name/Number: COG - PHILLIPS STATE

Project Location:

Invoice To: COG OPERATING C/O BECKY HASKELL

Invoice: SRS No. Pending

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH 8015	BTEX 8021	Chloride	Field Comments
1	FL-1	1'	3-30-18	2:00	S	1									X	X	X	
2	FL-2	3'	3-30-18	2:05	S	1									X	X	X	
3	NSW	6"	3-30-18	2:10	S	1									X	X		
4	SSW	6"	3-30-18	2:15	S	1									X	X		
5	ESW	6"	3-30-18	2:20	S	1									X	X		
6	WSW	6"	3-30-18	2:25	S	1									X	X		
7																		
8																		
9																		
10																		

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

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

Notes:

JLOWRY@TRCSOLUTIONS.COM
RHASKELL@CONCHO.COM
SDSTANLEY@TRCSOLUTIONS.COM
ZCOUDER@TRCSOLUTIONS.COM

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Kathy Blackburn	4/2/18 3:15				
2					4/2/18 5:15	4/3/18 10:18
3						
4						
5						

Custody Seal # | Preserved where applicable | On Ice: X | Cooler Temp.: -0.5 | Thermo. Corr. Factor

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

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

Work Order #: 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:

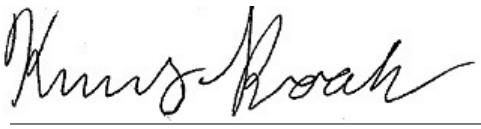
We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 585254. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory 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

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								

Kelsey Brooks
Project Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: Phillips State #1 IRP-4882

Work Orders : 585254,

Project ID:

Lab Batch #: 3049423 **Sample:** 585254-002 / SMP **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,

Project ID:

Lab Batch #: 3049423 **Sample:** 585093-001 SD / MSD **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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<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

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

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

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

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

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200) | San Antonio, Texas (210-509-3334) | Phoenix, Arizona (480-355-0900)

Dallas Texas (214-902-0300) | Midland, Texas (432-704-5251)

www.xenco.com

Xenco Job # 585254

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation

Company Address: 10 Desta Drive, Suite 150E, Midland, TX, 79705

Email: jlowry@trcsolutions.com | Phone No: 432-466-4450

Project Contact: Joel Lowry

Samplers's Name Joel Lowry

Project Information

Project Name/Number: Phillips State #1 IRP-4882

Project Location: Lea, Co NM

Invoice To: COG CO Becky Haskell

Invoice:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	NSWB	1'	4/26/18	10:42	S	1										X			
2	ESWB	1'	4/26/18	2:12		1									X	X			
3	SSWB	1'	4/27/18	4:40		1										X			
4	WSWB	1'	4/27/18	11:05		1										X			
5																			
6																			
7																			
8																			
9																			
10																			

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

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

Notes:

jlowry@trcsolutions.com
zconder@trcsolutions.com
kblackburn@trcsolutions.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Joel Lowry					
2						
3		5/7/18 3:45	Esperanza Gonzalez	Esperanza Gonzalez	5/7/18 4:38	
4						5/8/18 10:30
5						

Custody Seal # | Preserved where applicable | On Ice | Cooler Temp. 0.6 | Thermo. Corr. Factor

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 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

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					

Kelsey Brooks
Project Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: Phillips State

Work Orders : 587535,

Project ID:

Lab Batch #: 3052046 **Sample:** 587535-001 / SMP **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,

Project ID:

Lab Batch #: 3052046 **Sample:** 587529-001 SD / MSD **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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<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.

XENCO Laboratories

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

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

Serial #: 330916 Page of

Company-City: TRC ENVIRONMENTAL CORP **Phone:** 432-466-4450

Lab Only: 587535

Project Name-Location ☑ Previously done at XENCO **Project ID**
PHILLIPS STATE LEA COUNTY, NM

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

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other
Proj. Manager (PM) JOEL LOWRY

E-mail Results to ☑ PM and RHASKELL@CONCHO.COM
JLOWRY@TRCSOLUTIONS.COM, ZCONDER@TRCSOLUTIONS.COM

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to: COG OPERATING C/O BECKY HASKELL

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

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

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

Sampler Name BECKY GRIFFIN **Signature** [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 VOH VOAs	VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM 8310 8270	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	TPH	CHLORIDES	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:	
1	ESW	5-29-18	8:00																		X	X						1
2																												2
3																												3
4																												4
5																												5
6																												6
7																												7
8																												8
9																												9
10																												10

	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time	Total Containers per COC: Cooler Temp: 1.1 °C
1	1) [signature]	5-29-18 2:34	2) [signature]	5-29-18 2:34	Otherwise agreed on writing. Reports are the Intellectual Property of XENCO
2	3)		4) [signature]	5/30/18 1030	until paid. Samples will be held 30 days after final report is e-mailed unless
3	5)		6)		hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

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

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

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				

Kelsey Brooks
Project Manager

Final 1.000

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

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

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	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 593804

TRC Solutions, Inc

Phillips State #1 TB

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3058608 Matrix: Solid Date Prep: 08.01.18
MB Sample Id: 7659579-1-BLK LCS Sample Id: 7659579-1-BKS 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** Prep Method: E300P
Seq Number: 3058608 Matrix: Soil Date Prep: 08.01.18
Parent Sample Id: 593804-001 MS Sample Id: 593804-001 S 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** Prep Method: E300P
Seq Number: 3058608 Matrix: Soil Date Prep: 08.01.18
Parent Sample Id: 593866-001 MS Sample Id: 593866-001 S 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** Prep Method: TX1005P
Seq Number: 3058101 Matrix: Solid Date Prep: 07.27.18
MB Sample Id: 7659283-1-BLK LCS Sample Id: 7659283-1-BKS 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 [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 593804

TRC Solutions, Inc

Phillips State #1 TB

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P

Seq Number: 3058101 Matrix: Soil Date Prep: 07.27.18

Parent Sample Id: 593803-021 MS Sample Id: 593803-021 S 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 [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200) | San Antonio, Texas (210-509-3334) | Phoenix, Arizona (480-355-0900)

Dallas Texas (214-902-0300) | Midland, Texas (432-704-5251)

www.xenco.com

Xenco Job # 593804

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 2057 Commerce Drive, Midland, TX 79703
Email: jlowry@trcsolutions.com | Phone No: 432-466-4450
Project Contact: Joel Lowry
Samplers's Name Joel Lowry

Project Information

Project Name/Number: Phillips State #1 TB
Project Location: Lea Co, NM
Invoice To: COG Operating C/O Becky Haskell
Invoice:

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Field Comments
1	SP#1b @ 2'	2ft	7/25/2018	10:00	S	1									X	X		
2	SP#2b @ 3.5'	3.5ft	7/25/2018	10:05	S	1									X	X		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Data Deliverable Information

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
- ☒ Contract TAT
- ☐ 3 Day EMERGENCY
- ☐ Level II Std QC
- ☐ Level III Std QC+ Forms
- ☐ Level 3 (CLP Forms)
- ☐ TRRP Checklist
- ☐ Level IV (Full Data Pkg /raw data)
- ☐ TRRP Level IV
- ☐ UST / RG -411

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

Notes:

jlowry@trcsolutions.com bcooper@trcsolutions.com
rhaskell@concho.com
zconder@trcsolutions.com
dneel2@concho.com
FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Becky Haskell	7-26-18 11:36	Esperanza Gonzalez	Esperanza Gonzalez	7/26/18 12:08	
2						7/27/18 10:30
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						0.3

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 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.

Figure 6 - View of affected area after remediation activities, facing northwest.

Figure 7 - View of affected area after remediation activities, facing south.

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

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	17	21S	35E	990	South	1980	East	Lea

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? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

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

If a Watercourse was Impacted, Describe Fully.*

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: Sheldon Hitchcock	OIL CONSERVATION DIVISION
Printed Name: Sheldon L. Hitchcock	Approved by Environmental Specialist: BY
Title: HSE Coordinator	Approval Date: 11/28/2017 Expiration Date:
E-mail Address: slhitchcock@concho.com	Conditions of Approval: see attached directive Attached ☑
Date: 11/27/2017 Phone: 575-746-2010	

* Attach Additional Sheets If Necessary

1RP-4883

nOY1733235874

pOY1733236190

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _11/27/2017_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4883__ has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _12/28/2017_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

● Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

● Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

● Nominal detection limits for field and laboratory analyses must be provided.

● Composite sampling is not generally allowed.

● Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

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

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

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

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

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

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