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APPROVED
By CHernandez at 1:20 pm, Aug 03, 2018

NMOCD approves 1RP-5014 for closure.

REMEDIATION SUMMARY AND SITE CLOSURE REQUEST

Plains Pipeline, L.P.
COG Boone 16 2H to Seg. 2
LEA COUNTY, NEW MEXICO
UNIT LETTER "O", SECTION 16, TOWNSHIP 21 SOUTH, RANGE 33 EAST
GPS: N 32.47246° W 103.57525°
SRS #: 2018-060
NMOCD Reference: 1RP-5014

Prepared for:

Plains Pipeline, L.P.
333 Clay Street, Suite 1600
Houston, Texas 77002

Prepared by:

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

July 2018

Joel W. Lowry
Senior Project Manager

Curt D. Stanley
Senior Project Manager

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APPENDICES

1.0 INTRODUCTION AND BACKGROUND

On behalf of Plains Pipeline, L.P. (Plains), TRC Environmental Corporation (TRC) has prepared this *Remediation Summary and Site Closure Request* for the crude oil release site known as COG Boone 16 2H to Seg. 2 (1RP-5014). The Release Site is located approximately twenty (20) miles Southeast of Monument in Lea County, New Mexico, in Unit Letter "O", Section 16, Township 21 South, Range 33 East. The GPS coordinates for the site are N 32.47246º and W 103.57525º. The affected property is located on private land. A "Site Location Map" is provided as Figure 1.

On April 5, 2018, a release was discovered on the LACT Unit at the COG Operating Boone 16 2H production facility. The release was attributed to the failure of a one-half (1/2)-inch (in.) nipple, resulting in a release of approximately seven (7) barrels (bbls) of crude oil. The release affected an area on the caliche well pad measuring approximately seven hundred (700 sq. ft.). Overspray from the release affected an area within the adjacent pasture east of the facility measuring approximately twelve thousand (12,000 sq. ft.). During initial response activities, approximately four (4) bbls of crude oil were recovered and saturated soils were excavated by hand and stockpiled on-site, atop a polyurethane liner pending final disposition. Site photographs are provided as Appendix A. The Release Notification and Corrective Action (Form C-141) is provided as Appendix D.

2.0 NMOCD SITE CLASSIFICATION

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) indicated the average depth to groundwater in Section 16, Township 21 South, Range 33 East is one hundred seven (107) feet below ground surface (bgs). An inferred depth of groundwater reference map utilized by The New Mexico Oil Conservation Division (NMOCD) indicates groundwater should be encountered at approximately one hundred forty (140) feet bgs. Based on the NMOCD site classification system zero (0) points will be assigned to the Release Site ranking as a result of this criterion.

There are no registered water wells located within 1,000 feet of the Release Site. Based on the NMOCD Site Classification System, zero (0) points will be assigned to the Release Site ranking as a result of this criterion.

There are no surface-water features located within a 1,000 foot radius of the site. Based on the NMOCD Site Classification System, zero (0) points would be assigned to the site as a result of this criterion. The NMOCD guidelines indicate the Release Site has a ranking score of zero (0) points. The regulatory guidelines for a Release Site with a ranking score of zero (0) points are as follows:

- Benzene - 10 mg/kg
- Benzene, Toluene, Ethyl-Benzene, Xylenes (BTEX) - 50 mg/kg
- Total Petroleum Hydrocarbons (TPH) – 5,000 mg/kg
- Chloride – 600 mg/kg

3.0 SUMMARY OF FIELD ACTIVITIES

3.0 SUMMARY OF FIELD ACTIVITIES

On April 10, 2018, remediation activities commenced at the Release Site. Areas within the pasture affected by overspray were washed down and treated with approximately three hundred fifty (350) gallons of a Microblaze® solution over the course of two (2) days. Saturated soils adjacent to the affected LACT unit and above ground piping were excavated by hand. Excavated soil was stockpiled on-site, atop an impermeable liner, pending final disposition.

On April 10, 2018, TRC conducted an initial delineation event at the Site. During the delineation event, a series of hand-augered soil bores (SP-1 through SP-3) were advanced within the affected area on the caliche well pad in an effort to characterize the vertical extent of soil impact. During the advancement of the soil bores, three (3) soil samples (SP-1 @ 1.5', SP-2 @ 1.5', SP-3 @ 1') were collected and submitted to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated benzene concentrations were less than the applicable laboratory reporting limit (RL) in each of the submitted soil samples, with the exception of soil sample SP-#1 @ 1.5', which exhibited a benzene concentration of 0.784 mg/kg. BTEX concentrations ranged from 0.5672 mg/kg in soil sample SP-#2 @ 1.5' to 51.384 mg/kg in soil sample SP-#1 @ 1.5'. TPH concentrations ranged from 864.8 mg/kg in soil sample SP-#2 @ 1.5' to 5,980 mg/kg in soil samples SP-#1 @ 1.5'. Benzene, BTEX and TPH concentrations were below the NMOCD RRAL in each of the submitted soil samples, with the exception of soil sample SP-#1 @ 1.5', which exhibited a BTEX concentration of 51.384 mg/kg and a TPH concentration of 5,980 mg/kg. A table summarizing Concentrations of Benzene, BTEX, TPH, and Chloride in Soil is provided as Table 1. Laboratory Analytical Reports are provided as Appendix B. A Site & Sample Location Map is provided as Figure 2.

Additional delineation soil samples (SP-1 @ 2', SP-2 @ 2' and SP-3 @ 1.5') collected from deeper intervals, were submitted to the laboratory for analysis of TPH concentrations, which were determined to be below the NMOCD RRAL. Based on laboratory analytical results from delineation soil samples it was determined soil was not affected above the NMOCD RRAL below two (2) ft. bgs in the area characterized by sample point SP-1, one and one half (1.5) ft. bgs in the area characterized by sample point SP-2 and one (1) ft. bgs in the area characterized by sample point SP-3.

In addition, twelve (12) soil samples (OS#1 @ 0-6", OS#1 @ 6-12", OS#2 @ 0-6", OS#2 @ 6-12", OS#3 @ 0-6", OS#3 @ 6-12", OS#4 @ 0-6", OS#4 @ 6-12", OS#5 @ 0-6", OS#5 @ 6-12", OS#6 @ 0-6" and OS#6 @ 6-12") were collected from within the affected pasture and submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations ranged 9.28 mg/kg in soil sample OS#6 @ 0-6" to 20,898 mg/kg in soil sample OS #2 @ 0-6". TPH concentrations were below the NMOCD RRAL in each of the submitted soil samples, with the exception of soil sample OS #2 @ 0-6" (20,898 mg/kg). Soil samples collected from the zero (0) to six (6) in. interval were also analyzed for concentrations of BTEX and chloride, which were determined to be below the NMOCD RRAL in each of the submitted soil samples.

Upon receiving laboratory analytical results from delineation soil samples, excavation activities commenced at the Release Site. The affected area around the LACT unit was excavated to a depth of approximately two (2) ft. bgs. Excavation sidewalls were advanced until field observations suggested hydrocarbon impacts had been mitigated. Excavated soil was stockpiled on-site, atop an impermeable liner pending transportation to an NMOCD-approved facility for disposal.

Upon excavating impacted soil around the LACT unit, four (4) excavation confirmation samples (FL-1@ 2ft, ESW-1@ 2ft., NSW-1@ 2ft. and WSW-1@ 2ft.) were collected from the floor and sidewalls of the excavated area and submitted to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated BTEX concentrations were less than the applicable laboratory RL in each of the submitted soil samples, with the exception of soil samples ESW-1 @ 2 ft. (0.03584 mg/kg) and NSW-1 @ 2ft. (0.1014 mg/kg). TPH concentrations ranged from less than the laboratory RL in soil samples FL-1@ 2ft. to 886.5 mg/kg in soil sample ESW-1@ 2ft. BTEX and TPH concentrations were below the NMOCD RRAL in each of the submitted soil samples.

The affected area on the caliche well pad was excavated to a depth of approximately one and half (1.5) ft. bgs. Excavation sidewalls were advanced until field observations suggested hydrocarbon impact had been mitigated. Excavated soil was stockpiled on-site, atop an impermeable liner pending transportation to an NMOCD-approved facility for disposal. Upon excavating impacted soil on the caliche well pad, four (4) excavation confirmation soil samples (FL-2 @ 1.5ft, ESW-2 @ 1.5ft, WSW-2 @ 1.5ft and SWS-2 @ 0.5ft) were collected from the floor and sidewalls of the excavated area and submitted to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated BTEX concentrations were less than the applicable laboratory RL in each of the submitted soil samples. TPH concentrations ranged from less than the applicable laboratory RL in soil samples FL-2 @ 1.5ft and ESW-2 @ 1.5ft to 47.9 mg/kg in soil sample WSW-2 @ 1.5ft. Laboratory analytical results indicated BTEX and TPH concentrations were below the NMOCD RRAL in each of the submitted soil samples.

The impacted area within the affected pasture characterized by soil sample OS#2 @ 0-6" was excavated to a depth of approximately three (3) in. bgs. Excavated soil was stockpiled on-site, atop an impermeable liner pending transportation to an NMOCD-approved facility for disposal. Upon conducting limited excavation activities within the affected pasture, one (1) confirmation soil sample OS #2 @ 3-6" was collected from the base of the excavated area and submitted to the laboratory for analysis of TPH concentrations, which were determined to be 1,208 mg/kg.

In addition, one (1) soil sample (OS #7 @ 0-6") was collected from a previously unidentified area which experienced a "very light" over spray. The collected soil sample was submitted to the laboratory for analysis of BTEX and TPH concentrations which were determined to be less than the applicable laboratory RL.

Upon receiving laboratory analytical results from confirmation soil samples, the excavated area was backfilled with locally sourced, non-impacted, "like" material. Prior to backfilling, the final dimensions of the excavated area on the caliche well pad were approximately thirty-five (35) ft.

in length, and three (3) ft. to ten (10) ft. in width, and one and one half (1.5) ft. in depth. The final dimensions of the hand-dug area adjacent to LACT unit were approximately twenty-seven (27) ft. in length, fifteen (15) ft. in width, and two (2) ft. in depth. The final dimensions of the excavated area on the east side of the tank battery were approximately thirty-five (35) ft. in length, twenty (20) ft. in width, and three (3) in. to six (6) in. in depth.

Between April 19 and May 25, 2018, approximately one hundred fourteen (114) cubic yards (cy) of impacted soil was transported to Lazy Ace Landfarm, LLC (NMOCD Permit No NM-1-041). The Request for Approval to Accept Solid Waste (Form C-138) is provided as Appendix C.

4.0 SITE CLOSURE REQUEST

Remediation activities were conducted in accordance with the NMOCD guidelines for leaks, spills, and releases, 1993. Based on laboratory analytical results from confirmation soil samples and field activities conducted to date, TRC recommends Plains provide the NMOCD with a copy of this report and request site closure status to the COG Boone 16 2H to Seg. 2 Release Site.

5.0 LIMITATIONS

TRC Environmental Corporation has prepared this Remediation Summary and Site Closure Request to the best of its ability. No other warranty, expressed or implied, is made or intended. TRC Environmental Corporation has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. TRC Environmental Corporation 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 Environmental Corporation has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. TRC Environmental Corporation 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 Plains Pipeline, L.P. 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 Environmental Corporation and/or Plains Pipeline, L.P.

6.0 DISTRIBUTION

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Oil Conservation Division, District 1
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Hobbs, NM 88240

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Christina Hernandez
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 1
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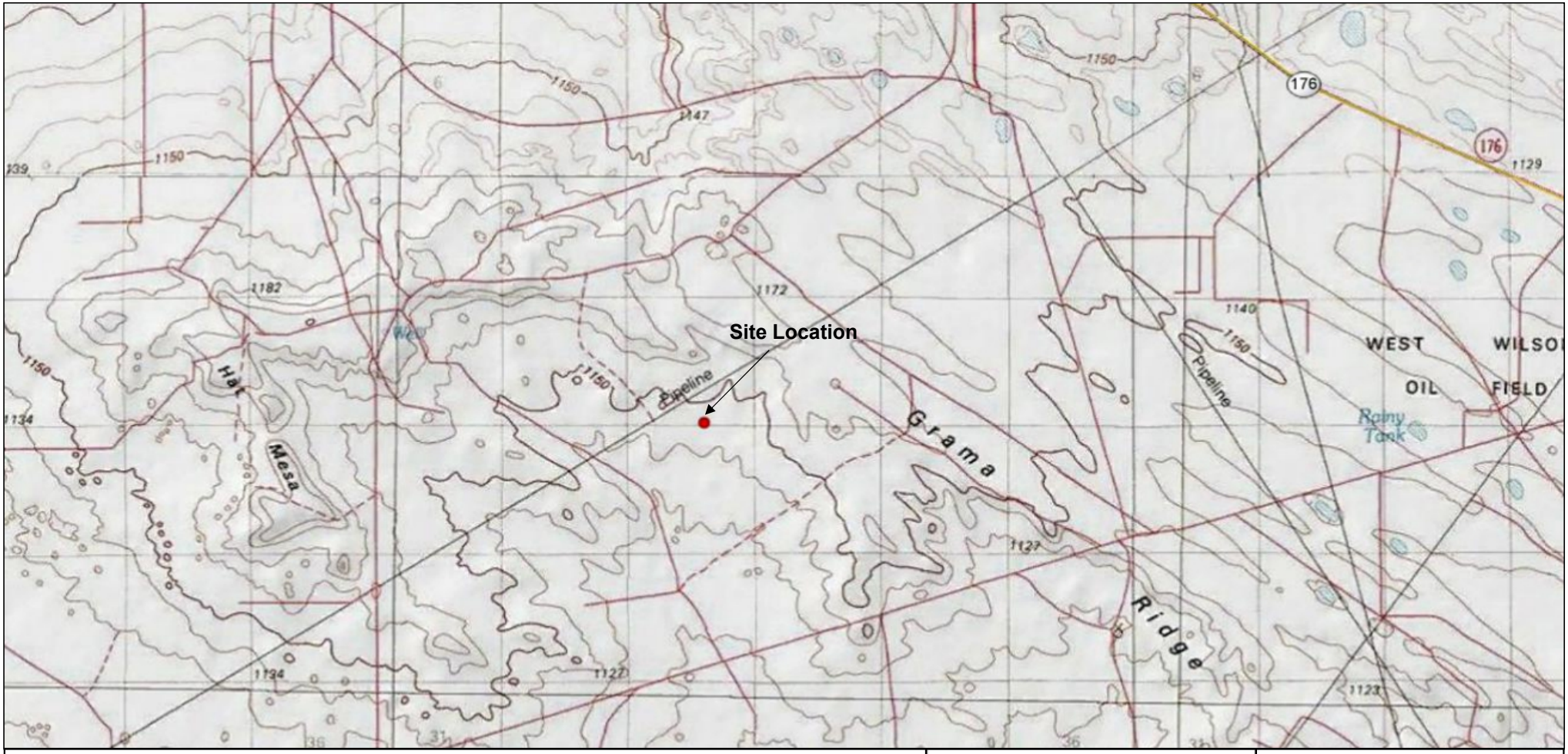

Figure 1

Site Location Map

Plains Pipeline, LP

COG Boone 16 2H to Seg. 2

Lea County, New Mexico

Scale 1" = ~6,000'	
Drafted by: ZC	Checked by: JL
Draft: May 9, 2018	
Lat. N 32.47246 Long. W 103.57525	
UL "O", Sec. 16, T21S, R33E	
TRC Proj. No.: 302711	

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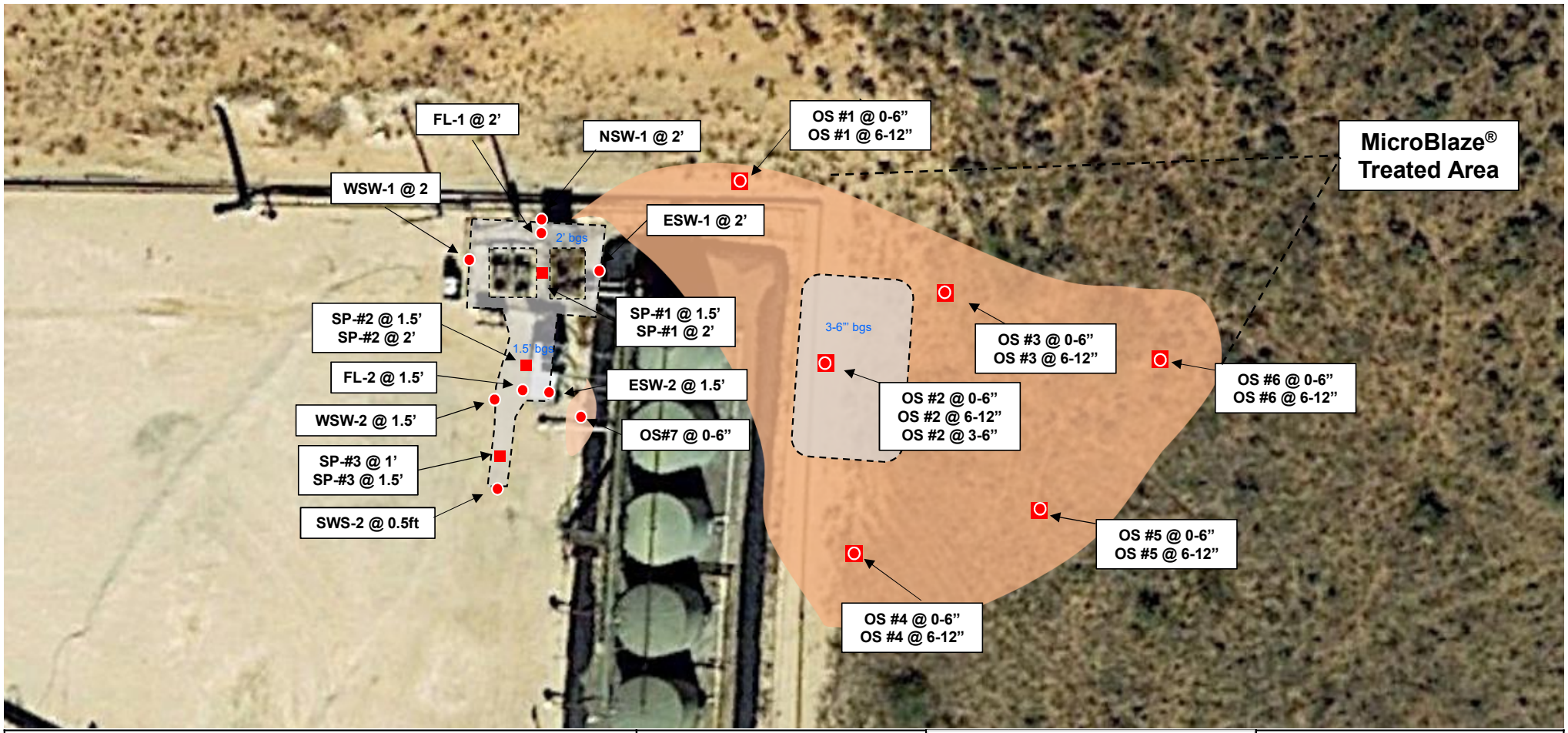
2057 Commerce Drive
Midland, Texas 79703
432.520.7720



LEGEND:

- Vertical Delineation Sample Location
- Confirmation Sample Locations
- Excavated Area
- Overspray Area

Figure 2

Site & Sample Location Map

Plains Pipeline, LP

COG Boone 16 2H to Seg. 2

Lea Co, New Mexico

Scale 1" = ~30'	
Drafted by: ZC	Checked by: JL
Draft: February 27, 2018	
Lat. N 32.47246 Long. W -103.57525	
UL "O", Sec. 16, T21S, R33E	
TRC Proj. No.:302711	

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TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH, AND CHLORIDE IN SOIL
COG BOONE 16 2H Seg 2
PLAINS PIPELINE, L.P.
LEA COUNTY, NM
NMOCD REF. No. 1RP-5014

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH	STATUS	Methods: EPA SW 846-8021B, 5030					Methods:				Method:
									EPA SW 846-8015M Ext.				E300
				BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES, TOTAL (mg/kg)	TOTAL BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TOTAL TPH (mg/kg)	CHLORIDE (mg/kg)
OS#1 @ 0-6"	4/10/2018	0-6"	Treated	<0.0178	<0.00923	<0.0121	<0.0135	<0.00923	1.94	1,110	189	1,300.94	128
OS#1 @ 6-12"	4/10/2018	6-12"	In-Situ	-	-	-	-	-	<0.268	154	41.3	195.3	-
OS#2 @ 0-6"	4/10/2018	0-6"	Excavated	<0.174	<0.0900	1.88	9.61	11.49	518	17,800	2,580	**20,898**	543
OS#2 @ 6-12"	4/10/2018	6-12"	In-Situ	-	-	-	-	-	61.1	3,490	501	4,052.1	-
OS#3 @ 0-6"	4/10/2018	0-6"	Treated	<0.0445	<0.0230	<0.0303	<0.0336	<0.023	3.78	1,790	379	2,172.78	40.4
OS#3 @ 6-12"	4/10/2018	6-12"	In-Situ	-	-	-	-	-	<0.270	30.7	37.3	68.0	-
OS#4 @ 0-6"	4/10/2018	0-6"	Treated	<0.00899	<0.00465	<0.00612	<0.00678	<0.00465	0.376	504	112	616.376	95.6
OS#4 @ 6-12"	4/10/2018	6-12"	In-Situ		-	-	-	-	<0.251	34.5	19.5	54.0	-
OS#5 @ 0-6"	4/10/2018	0-6"	Treated	<0.00866	<0.00448	<0.00590	0.0364	0.0364	0.732	184	133	317.732	118
OS#5 @ 6-12"	4/10/2018	6-12"	In-Situ	-	-	-	-	-	<0.264	21.2	23.5	44.7	-
OS#6 @ 0-6"	4/10/2018	0-6"	Treated	<0.00864	<0.00447	<0.00589	<0.00652	<0.00447	<0.259	<7.51	9.28	9.28	42.4
OS#6 @ 6-12"	4/10/2018	6-12"	In-Situ	-	-	-	-	-	<0.242	30.7	16.9	47.6	-
SP-#1 @ 1.5'	4/10/2018	1.5'	Excavated	0.784	13.8	7.71	29.09	**51.384**	386	4,860	734	**5,980**	-
SP-#1 @ 2'	4/10/2018	2'	In-Situ	-	-	-	-	-	44.8	229	62.1	335.9	-
SP-#2 @ 1.5'	4/10/2018	1.5'	In-Situ	<0.00816	0.0487	0.0957	0.4228	0.5672	19.8	723	122	864.8	-
SP-#2 @ 2'	4/10/2018	2'	In-Situ	-	-	-	-	-	137	544	92.2	773.2	-
SP-#3 @ 1'	4/10/2018	1'	In-Situ	<0.0174	0.570	0.971	4.42	5.961	86.7	1,600	239	1,925.7	-
SP-#3 @ 1.5'	4/10/2018	1.5'	In-Situ	-	-	-	-	-	18.4	451	79.2	548.6	-
FL-1 @ 2ft	4/18/2018	2'	In-Situ	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15	-
ESW-1 @ 2ft	4/18/2018	2'	In-Situ	<0.00200	<0.00200	0.00314	0.0327	0.03584	28.4	775	83.1	886.5	-
NSW-1 @ 2ft	4/18/2018	2'	In-Situ	<0.00201	0.0124	0.0172	0.0718	0.1014	<15.0	110	21.8	131.8	-
WSW-1 @ 2ft	4/18/2018	2'	In-Situ	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	54.9	<15.0	54.9	-
FL-2 @ 1.5ft	4/18/2018	1.5'	In-Situ	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15	-
ESW-2 @ 1.5ft	4/18/2018	1.5'	In-Situ	<0.00200	<0.00200	<0.00200	<0.002	<0.002	<15.0	<15.0	<15.0	<15	-
WSW-2 @ 1.5ft	4/18/2018	1.5'	In-Situ	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	47.9	<15.0	47.9	-
SWS-2 @ 0.5ft	4/18/2018	0.5'	In-Situ	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	22.0	<15.0	22.0	-
OS # 7 @ 0-6"	4/26/2018	0-6"	In-Situ	<0.00871	<0.00451	<0.00593	<0.00657	<0.00451	<0.261	<7.46	<7.46	<7.46	-
OS #2 @ 3-6"	4/26/2018	3-6"	In-Situ	-	-	-	-	-	<0.248	1,020	188	1,208	-
NMOCD Recommended Remediation Action Level				**10**	**-**	**-**	**-**	**50**	**-**	**-**	**-**	**5,000**	**600**

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

Figure 2 - View of the initial release, facing Southeast.

Figure 3 - View of overspray area, facing East.

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

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

Figure 6 - View of overspray area after remediation activities, facing South.

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

Figure 8 - View of the affected area after remediation activities, facing Northeast.

Analytical Report 582347

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG boone 16 Seg 2

19-APR-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

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

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

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19-APR-18

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

Reference: XENCO Report No(s): **582347**
COG boone 16 Seg 2
Project Address: Lea Co, N.M.

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) 582347. 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. 582347 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 582347

TRC Solutions, Inc, Midland, TX

COG boone 16 Seg 2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
OS #1 0-6"	S	04-10-18 00:00	0 - 6 In	582347-001
OS #1 6-12"	S	04-10-18 00:00	6 - 12 In	582347-002
OS #2 0-6"	S	04-10-18 00:00	0 - 6 In	582347-003
OS #2 6-12"	S	04-10-18 00:00	6 - 12 In	582347-004
OS #3 0-6"	S	04-10-18 00:00	0 - 6 In	582347-005
OS #3 6-12"	S	04-10-18 00:00	6 - 12 In	582347-006
OS #4 0-6"	S	04-10-18 00:00	0 - 6 In	582347-007
OS #4 6-12"	S	04-10-18 00:00	6 - 12 In	582347-008
OS #5 0-6"	S	04-10-18 00:00	0 - 6 In	582347-009
OS #5 6-12"	S	04-10-18 00:00	6 - 12 In	582347-010
OS #6 0-6"	S	04-10-18 00:00	0 - 6 In	582347-011
OS #6 6-12"	S	04-10-18 00:00	6 - 12 In	582347-012
SP-#1 @ 1.5'	S	04-10-18 00:00	1.5 ft	582347-013
SP-#1 @ 2'	S	04-10-18 00:00	2 ft	582347-014
SP-#2 @ 1.5'	S	04-10-18 00:00	1.5 ft	582347-015
SP-#2 @ 2'	S	04-10-18 00:00	2 ft	582347-016
SP-#3 @ 1'	S	04-10-18 00:00	1 ft	582347-017
SP-#3 @ 1.5'	S	04-10-18 00:00	1.5 ft	582347-018

Client Name: TRC Solutions, Inc
Project Name: COG boone 16 Seg 2

Project ID:
Work Order Number(s): *582347*

Report Date: *19-APR-18*
Date Received: *04/12/2018*

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

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3046742 TPH GRO by EPA 8015 Mod.
Surrogate a,a,a-Trifluorotoluene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 582347-013.

Batch: LBA-3046743 BTEX by EPA 8021B
Samples 582347-001, 582347-003, 582347-005, and 582347-017 were diluted due to hydrocarbons beyond xylenes.

Batch: LBA-3046896 DRO-ORO By SW8015B
Surrogate Tricosane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 582347-001 S,582347-001 SD,582347-003,582347-004,582347-005,582347-007,582347-009,582347-013,582347-014,582347-015,582347-016,582347-017,582347-002,582347-001,582347-018.
Surrogate n-Triacontane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 582347-001 S,582347-001 SD,582347-004,582347-005,582347-018,582347-009,582347-013,582347-014,582347-015,582347-016,582347-017,582347-003,582347-001,582347-007.

Lab Sample ID 582347-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO) 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: 582347-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018.
The Laboratory Control Sample for Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results
582347

TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id: **OS #1 0-6"** Matrix: Soil Sample Depth: 0 - 6 In

Lab Sample Id: 582347-001 Date Collected: 04.10.18 00.00 Date Received: 04.12.18 14.07

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

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3046874 Date Prep: 04.16.18 12.30

Prep seq: 7642767

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**128**	25.0	0.572	mg/kg	04.16.18 17:50		1

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3046896 Date Prep: 04.16.18 11.35

Prep seq: 7642689

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**1110**	24.9	7.46	mg/kg	04.16.18 14:51	X	1
Oil Range Hydrocarbons (ORO)	PHCG2835	**189**	24.9	7.46	mg/kg	04.16.18 14:51		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	638	65 - 144	%		**
n-Triacontane	405	46 - 152	%		**

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3046742 Date Prep: 04.14.18 09.00

Prep seq: 7642678

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**1.94**	7.89	0.535	mg/kg	04.15.18 23:35	J	39

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	96	76 - 123	%		
a,a,a-Trifluorotoluene	78	69 - 120	%		

Certificate of Analytical Results
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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**OS #1 0-6"**	Matrix:	Soil	Sample Depth:	0 - 6 In
Lab Sample Id:	582347-001	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046743	Date Prep:	04.14.18 09.00		
		Prep seq:	7642675		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.0178	0.0394	0.0178	mg/kg	04.15.18 23:35	U	39
Toluene	108-88-3	<0.00923	0.0394	0.00923	mg/kg	04.15.18 23:35	U	39
Ethylbenzene	100-41-4	<0.0121	0.0394	0.0121	mg/kg	04.15.18 23:35	U	39
m_p-Xylenes	179601-23-1	<0.0135	0.0789	0.0135	mg/kg	04.15.18 23:35	U	39
o-Xylene	95-47-6	<0.0135	0.0394	0.0135	mg/kg	04.15.18 23:35	U	39
Xylenes, Total	1330-20-7	<0.0135		0.0135	mg/kg	04.15.18 23:35	U	
Total BTEX		<0.00923		0.00923	mg/kg	04.15.18 23:35	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	99	68 - 120	%		
a,a,a-Trifluorotoluene	100	71 - 121	%		

Final 1.000

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**OS #1 6-12"**	Matrix:	Soil	Sample Depth:	6 - 12 In
Lab Sample Id:	582347-002	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	DRO-ORO By SW8015B			Prep Method:	8015
Analyst:	PGM	% Moist:		Tech:	PGM
Seq Number:	3046896	Date Prep:	04.16.18 11.35		
		Prep seq:	7642689		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**154**	25.1	7.49	mg/kg	04.16.18 16:28		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**41.3**	25.1	7.49	mg/kg	04.16.18 16:28		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	162	65 - 144	%		**
n-Triacontane	136	46 - 152	%		

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046742	Date Prep:	04.14.18 09.00		
		Prep seq:	7642678		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.268	3.95	0.268	mg/kg	04.16.18 00:02	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	91	76 - 123	%		
a,a,a-Trifluorotoluene	90	69 - 120	%		

Certificate of Analytical Results
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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**OS #2 0-6"**	Matrix:	Soil	Sample Depth:	0 - 6 In
Lab Sample Id:	582347-003	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07

Analytical Method: Inorganic Anions by EPA 300/300.1 — Prep Method: E300P
Analyst: RNL — % Moist: — Tech: RNL
Seq Number: 3046874 — Date Prep: 04.16.18 12.30
Prep seq: 7642767

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**543**	125	2.86	mg/kg	04.16.18 18:40		5

Analytical Method: DRO-ORO By SW8015B — Prep Method: 8015
Analyst: PGM — % Moist: — Tech: PGM
Seq Number: 3046896 — Date Prep: 04.16.18 11.35
Prep seq: 7642689

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**17800**	252	75.3	mg/kg	04.16.18 17:01		10
Oil Range Hydrocarbons (ORO)	PHCG2835	**2580**	252	75.3	mg/kg	04.16.18 17:01		10

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	6782	65 - 144	%		**
n-Triacontane	4059	46 - 152	%		**

Analytical Method: TPH GRO by EPA 8015 Mod. — Prep Method: 5030B
Analyst: MIT — % Moist: — Tech: MIT
Seq Number: 3046742 — Date Prep: 04.14.18 09.00
Prep seq: 7642678

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**518**	76.9	5.21	mg/kg	04.16.18 00:30		385

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	104	76 - 123	%		
a,a,a-Trifluorotoluene	84	69 - 120	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**OS #2 0-6"**	Matrix:	Soil	Sample Depth:	0 - 6 In
Lab Sample Id:	582347-003	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046743	Date Prep:	04.14.18 09.00		
		Prep seq:	7642675		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.174	0.385	0.174	mg/kg	04.16.18 00:30	U	385
Toluene	108-88-3	<0.0900	0.385	0.0900	mg/kg	04.16.18 00:30	U	385
Ethylbenzene	100-41-4	**1.88**	0.385	0.118	mg/kg	04.16.18 00:30		385
m_p-Xylenes	179601-23-1	**7.69**	0.769	0.131	mg/kg	04.16.18 00:30		385
o-Xylene	95-47-6	**1.92**	0.385	0.131	mg/kg	04.16.18 00:30		385
Xylenes, Total	1330-20-7	**9.61**		0.131	mg/kg	04.16.18 00:30		
Total BTEX		**11.49**		0.09	mg/kg	04.16.18 00:30		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	103	68 - 120	%		
a,a,a-Trifluorotoluene	93	71 - 121	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**OS #2 6-12"**	Matrix:	Soil	Sample Depth:	6 - 12 In
Lab Sample Id:	582347-004	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	DRO-ORO By SW8015B			Prep Method:	8015
Analyst:	PGM	% Moist:		Tech:	PGM
Seq Number:	3046896	Date Prep:	04.16.18 11.35		
		Prep seq:	7642689		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**3490**	126	37.6	mg/kg	04.17.18 12:59		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**501**	126	37.6	mg/kg	04.17.18 12:59		5

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	1396	65 - 144	%		**
n-Triacontane	856	46 - 152	%		**

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046742	Date Prep:	04.14.18 09.00		
		Prep seq:	7642678		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**61.1**	19.9	1.35	mg/kg	04.16.18 00:57		99

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	77	76 - 123	%		
a,a,a-Trifluorotoluene	81	69 - 120	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id: **OS #3 0-6"** Matrix: Soil Sample Depth: 0 - 6 In

Lab Sample Id: 582347-005 Date Collected: 04.10.18 00.00 Date Received: 04.12.18 14.07

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

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3046874 Date Prep: 04.16.18 12.30

Prep seq: 7642767

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**40.4**	25.0	0.572	mg/kg	04.16.18 18:52		1

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3046896 Date Prep: 04.16.18 11.35

Prep seq: 7642689

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**1790**	24.8	7.41	mg/kg	04.16.18 18:07		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**379**	24.8	7.41	mg/kg	04.16.18 18:07		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	914	65 - 144	%		**
n-Triacontane	710	46 - 152	%		**

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3046742 Date Prep: 04.14.18 09.00

Prep seq: 7642678

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**3.78**	19.7	1.33	mg/kg	04.16.18 01:25	J	98

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	97	76 - 123	%		
a,a,a-Trifluorotoluene	85	69 - 120	%		

Certificate of Analytical Results
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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**OS #3 0-6"**	Matrix:	Soil	Sample Depth:	0 - 6 In
Lab Sample Id:	582347-005	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046743	Date Prep:	04.14.18 09.00		
		Prep seq:	7642675		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.0445	0.0984	0.0445	mg/kg	04.16.18 01:25	U	98
Toluene	108-88-3	<0.0230	0.0984	0.0230	mg/kg	04.16.18 01:25	U	98
Ethylbenzene	100-41-4	<0.0303	0.0984	0.0303	mg/kg	04.16.18 01:25	U	98
m_p-Xylenes	179601-23-1	<0.0336	0.197	0.0336	mg/kg	04.16.18 01:25	U	98
o-Xylene	95-47-6	<0.0336	0.0984	0.0336	mg/kg	04.16.18 01:25	U	98
Xylenes, Total	1330-20-7	<0.0336		0.0336	mg/kg	04.16.18 01:25	U	
Total BTEX		<0.023		0.023	mg/kg	04.16.18 01:25	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	96	68 - 120	%		
a,a,a-Trifluorotoluene	94	71 - 121	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id: **OS #3 6-12"** Matrix: Soil Sample Depth: 6 - 12 In

Lab Sample Id: 582347-006 Date Collected: 04.10.18 00.00 Date Received: 04.12.18 14.07

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3046896 Date Prep: 04.16.18 11.35

Prep seq: 7642689

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**30.7**	25.1	7.50	mg/kg	04.16.18 18:41		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**37.3**	25.1	7.50	mg/kg	04.16.18 18:41		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	129	65 - 144	%		
n-Triacontane	133	46 - 152	%		

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3046742 Date Prep: 04.14.18 09.00

Prep seq: 7642678

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.270	3.99	0.270	mg/kg	04.16.18 01:51	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	96	76 - 123	%		
a,a,a-Trifluorotoluene	88	69 - 120	%		

Sample Id: **OS #4 0-6"** Matrix: Soil Sample Depth: 0 - 6 In

Lab Sample Id: 582347-007 Date Collected: 04.10.18 00.00 Date Received: 04.12.18 14.07

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

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3046874 Date Prep: 04.16.18 12.30

Prep seq: 7642767

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**95.6**	50.0	1.14	mg/kg	04.16.18 19:05		2

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3046896 Date Prep: 04.16.18 11.35

Prep seq: 7642689

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**504**	25.1	7.49	mg/kg	04.16.18 19:14		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**112**	25.1	7.49	mg/kg	04.16.18 19:14		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	406	65 - 144	%		**
n-Triacontane	268	46 - 152	%		**

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3046742 Date Prep: 04.14.18 09.00

Prep seq: 7642678

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.376**	3.98	0.269	mg/kg	04.16.18 02:18	J	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	96	76 - 123	%		
a,a,a-Trifluorotoluene	94	69 - 120	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**OS #4 0-6"**	Matrix:	Soil	Sample Depth:	0 - 6 In
Lab Sample Id:	582347-007	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046743	Date Prep:	04.14.18 09.00		
		Prep seq:	7642675		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00899	0.0199	0.00899	mg/kg	04.16.18 02:18	U	20
Toluene	108-88-3	<0.00465	0.0199	0.00465	mg/kg	04.16.18 02:18	U	20
Ethylbenzene	100-41-4	<0.00612	0.0199	0.00612	mg/kg	04.16.18 02:18	U	20
m_p-Xylenes	179601-23-1	<0.00678	0.0398	0.00678	mg/kg	04.16.18 02:18	U	20
o-Xylene	95-47-6	<0.00678	0.0199	0.00678	mg/kg	04.16.18 02:18	U	20
Xylenes, Total	1330-20-7	<0.00678		0.00678	mg/kg	04.16.18 02:18	U	
Total BTEX		<0.00465		0.00465	mg/kg	04.16.18 02:18	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	98	68 - 120	%		
a,a,a-Trifluorotoluene	104	71 - 121	%		

Certificate of Analytical Results
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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id: **OS #4 6-12"** Matrix: Soil Sample Depth: 6 - 12 In

Lab Sample Id: 582347-008 Date Collected: 04.10.18 00.00 Date Received: 04.12.18 14.07

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3046896 Date Prep: 04.16.18 11.35

Prep seq: 7642689

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**34.5**	24.9	7.46	mg/kg	04.16.18 19:48		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**19.5**	24.9	7.46	mg/kg	04.16.18 19:48	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	110	65 - 144	%		
n-Triacontane	112	46 - 152	%		

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3046742 Date Prep: 04.14.18 09.00

Prep seq: 7642678

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.251	3.70	0.251	mg/kg	04.16.18 02:45	U	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	98	76 - 123	%		
a,a,a-Trifluorotoluene	88	69 - 120	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id: **OS #5 0-6"** Matrix: Soil Sample Depth: 0 - 6 In

Lab Sample Id: 582347-009 Date Collected: 04.10.18 00.00 Date Received: 04.12.18 14.07

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

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3046874 Date Prep: 04.16.18 12.30

Prep seq: 7642767

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**118**	25.0	0.572	mg/kg	04.16.18 19:17		1

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3046896 Date Prep: 04.16.18 11.35

Prep seq: 7642689

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**184**	25.1	7.50	mg/kg	04.16.18 20:22		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**133**	25.1	7.50	mg/kg	04.16.18 20:22		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	199	65 - 144	%		**
n-Triacontane	269	46 - 152	%		**

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3046742 Date Prep: 04.14.18 09.00

Prep seq: 7642678

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.732**	3.83	0.260	mg/kg	04.16.18 03:12	J	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	99	76 - 123	%		
a,a,a-Trifluorotoluene	90	69 - 120	%		

Certificate of Analytical Results
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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**OS #5 0-6"**	Matrix:	Soil	Sample Depth:	0 - 6 In
Lab Sample Id:	582347-009	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046743	Date Prep:	04.14.18 09.00		
		Prep seq:	7642675		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00866	0.0192	0.00866	mg/kg	04.16.18 03:12	U	19
Toluene	108-88-3	<0.00448	0.0192	0.00448	mg/kg	04.16.18 03:12	U	19
Ethylbenzene	100-41-4	<0.00590	0.0192	0.00590	mg/kg	04.16.18 03:12	U	19
m_p-Xylenes	179601-23-1	**0.0364**	0.0383	0.00653	mg/kg	04.16.18 03:12	J	19
o-Xylene	95-47-6	<0.00653	0.0192	0.00653	mg/kg	04.16.18 03:12	U	19
Xylenes, Total	1330-20-7	**0.0364**		0.00653	mg/kg	04.16.18 03:12		
Total BTEX		**0.0364**		0.00448	mg/kg	04.16.18 03:12		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	100	68 - 120	%		
a,a,a-Trifluorotoluene	101	71 - 121	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id: **OS #5 6-12"** Matrix: Soil Sample Depth: 6 - 12 In

Lab Sample Id: 582347-010 Date Collected: 04.10.18 00.00 Date Received: 04.12.18 14.07

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3046896 Date Prep: 04.16.18 11.35

Prep seq: 7642689

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**21.2**	24.9	7.46	mg/kg	04.16.18 20:55	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	**23.5**	24.9	7.46	mg/kg	04.16.18 20:55	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	106	65 - 144	%		
n-Triacontane	109	46 - 152	%		

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3046742 Date Prep: 04.14.18 09.00

Prep seq: 7642678

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.264	3.90	0.264	mg/kg	04.16.18 05:53	U	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	98	76 - 123	%		
a,a,a-Trifluorotoluene	93	69 - 120	%		

Sample Id: **OS #6 0-6"** Matrix: Soil Sample Depth: 0 - 6 In

Lab Sample Id: 582347-011 Date Collected: 04.10.18 00.00 Date Received: 04.12.18 14.07

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

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3046874 Date Prep: 04.16.18 12.30

Prep seq: 7642767

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**42.4**	25.0	0.572	mg/kg	04.16.18 19:29		1

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3046896 Date Prep: 04.16.18 11.35

Prep seq: 7642689

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.51	25.1	7.51	mg/kg	04.16.18 21:29	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	**9.28**	25.1	7.51	mg/kg	04.16.18 21:29	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	106	65 - 144	%		
n-Triacontane	106	46 - 152	%		

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3046742 Date Prep: 04.14.18 09.00

Prep seq: 7642678

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.259	3.82	0.259	mg/kg	04.16.18 06:20	U	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	97	76 - 123	%		
a,a,a-Trifluorotoluene	85	69 - 120	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**OS #6 0-6"**	Matrix:	Soil	Sample Depth:	0 - 6 In
Lab Sample Id:	582347-011	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046743	Date Prep:	04.14.18 09.00		
		Prep seq:	7642675		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00864	0.0191	0.00864	mg/kg	04.16.18 06:20	U	19
Toluene	108-88-3	<0.00447	0.0191	0.00447	mg/kg	04.16.18 06:20	U	19
Ethylbenzene	100-41-4	<0.00589	0.0191	0.00589	mg/kg	04.16.18 06:20	U	19
m_p-Xylenes	179601-23-1	<0.00652	0.0382	0.00652	mg/kg	04.16.18 06:20	U	19
o-Xylene	95-47-6	<0.00652	0.0191	0.00652	mg/kg	04.16.18 06:20	U	19
Xylenes, Total	1330-20-7	<0.00652		0.00652	mg/kg	04.16.18 06:20	U	
Total BTEX		<0.00447		0.00447	mg/kg	04.16.18 06:20	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	102	68 - 120	%		
a,a,a-Trifluorotoluene	101	71 - 121	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**OS #6 6-12"**	Matrix:	Soil	Sample Depth:	6 - 12 In
Lab Sample Id:	582347-012	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	DRO-ORO By SW8015B			Prep Method:	8015
Analyst:	PGM	% Moist:		Tech:	PGM
Seq Number:	3046896	Date Prep:	04.16.18 11.35		
		Prep seq:	7642689		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**30.7**	25.1	7.52	mg/kg	04.16.18 22:02		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**16.9**	25.1	7.52	mg/kg	04.16.18 22:02	J	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	120	65 - 144	%		
n-Triacontane	113	46 - 152	%		

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046742	Date Prep:	04.14.18 09.00		
		Prep seq:	7642678		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.242	3.57	0.242	mg/kg	04.15.18 20:53	U	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	95	76 - 123	%		
a,a,a-Trifluorotoluene	91	69 - 120	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**SP-#1 @ 1.5'**	Matrix:	Soil	Sample Depth:	1.5 ft
Lab Sample Id:	582347-013	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	DRO-ORO By SW8015B			Prep Method:	8015
Analyst:	PGM	% Moist:		Tech:	PGM
Seq Number:	3046896	Date Prep:	04.16.18 11.35		
		Prep seq:	7642689		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**4860**	124	37.1	mg/kg	04.17.18 13:32		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**734**	124	37.1	mg/kg	04.17.18 13:32		5

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	2155	65 - 144	%		**
n-Triacontane	1178	46 - 152	%		**

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046742	Date Prep:	04.14.18 09.00		
		Prep seq:	7642678		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**386**	19.8	1.34	mg/kg	04.16.18 06:48		99

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	122	76 - 123	%		
a,a,a-Trifluorotoluene	65	69 - 120	%		***

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**SP-#1 @ 1.5'**	Matrix:	Soil	Sample Depth:	1.5 ft
Lab Sample Id:	582347-013	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046743	Date Prep:	04.14.18 09.00		
		Prep seq:	7642675		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.784**	0.0992	0.0448	mg/kg	04.16.18 06:48		99
Toluene	108-88-3	**13.8**	0.0992	0.0232	mg/kg	04.16.18 06:48		99
Ethylbenzene	100-41-4	**7.71**	0.0992	0.0306	mg/kg	04.16.18 06:48		99
m_p-Xylenes	179601-23-1	**20.0**	0.198	0.0338	mg/kg	04.16.18 06:48		99
o-Xylene	95-47-6	**9.09**	0.0992	0.0338	mg/kg	04.16.18 06:48		99
Xylenes, Total	1330-20-7	**29.09**		0.0338	mg/kg	04.16.18 06:48		
Total BTEX		**51.384**		0.0232	mg/kg	04.16.18 06:48		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	107	68 - 120	%		
a,a,a-Trifluorotoluene	117	71 - 121	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**SP-#1 @ 2'**	Matrix:	Soil	Sample Depth:	2 ft
Lab Sample Id:	582347-014	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	DRO-ORO By SW8015B			Prep Method:	8015
Analyst:	PGM	% Moist:		Tech:	PGM
Seq Number:	3046896	Date Prep:	04.16.18 11.35		
		Prep seq:	7642689		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**229**	25.2	7.55	mg/kg	04.16.18 23:10		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**62.1**	25.2	7.55	mg/kg	04.16.18 23:10		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	181	65 - 144	%		**
n-Triacontane	153	46 - 152	%		**

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046742	Date Prep:	04.14.18 09.00		
		Prep seq:	7642678		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**44.8**	3.91	0.265	mg/kg	04.16.18 09:03		20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	83	76 - 123	%		
a,a,a-Trifluorotoluene	76	69 - 120	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**SP-#2 @ 1.5'**	Matrix:	Soil	Sample Depth:	1.5 ft
Lab Sample Id:	582347-015	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	DRO-ORO By SW8015B			Prep Method:	8015
Analyst:	PGM	% Moist:		Tech:	PGM
Seq Number:	3046896	Date Prep:	04.16.18 11.35		
		Prep seq:	7642689		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**723**	25.1	7.49	mg/kg	04.16.18 23:45		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**122**	25.1	7.49	mg/kg	04.16.18 23:45		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	307	65 - 144	%		**
n-Triacontane	262	46 - 152	%		**

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046742	Date Prep:	04.14.18 09.00		
		Prep seq:	7642678		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**19.8**	3.61	0.245	mg/kg	04.16.18 09:30		18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	105	76 - 123	%		
a,a,a-Trifluorotoluene	93	69 - 120	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**SP-#2 @ 1.5'**	Matrix:	Soil	Sample Depth:	1.5 ft
Lab Sample Id:	582347-015	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046743	Date Prep:	04.14.18 09.00		
		Prep seq:	7642675		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00816	0.0181	0.00816	mg/kg	04.16.18 09:30	U	18
Toluene	108-88-3	**0.0487**	0.0181	0.00422	mg/kg	04.16.18 09:30		18
Ethylbenzene	100-41-4	**0.0957**	0.0181	0.00556	mg/kg	04.16.18 09:30		18
m_p-Xylenes	179601-23-1	**0.356**	0.0361	0.00616	mg/kg	04.16.18 09:30		18
o-Xylene	95-47-6	**0.0668**	0.0181	0.00616	mg/kg	04.16.18 09:30		18
Xylenes, Total	1330-20-7	**0.4228**		0.00616	mg/kg	04.16.18 09:30		
Total BTEX		**0.5672**		0.00422	mg/kg	04.16.18 09:30		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	105	68 - 120	%		
a,a,a-Trifluorotoluene	104	71 - 121	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**SP-#2 @ 2'**	Matrix:	Soil	Sample Depth:	2 ft
Lab Sample Id:	582347-016	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	DRO-ORO By SW8015B			Prep Method:	8015
Analyst:	PGM	% Moist:		Tech:	PGM
Seq Number:	3046896	Date Prep:	04.16.18 11.35		
		Prep seq:	7642689		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**544**	24.9	7.46	mg/kg	04.17.18 00:20		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**92.2**	24.9	7.46	mg/kg	04.17.18 00:20		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	280	65 - 144	%		**
n-Triacontane	228	46 - 152	%		**

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3047047	Date Prep:	04.17.18 11.00		
		Prep seq:	7642836		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**137**	40.0	2.71	mg/kg	04.18.18 02:40		200

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	96	76 - 123	%		
a,a,a-Trifluorotoluene	82	69 - 120	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**SP-#3 @ 1'**	Matrix:	Soil	Sample Depth:	1 ft
Lab Sample Id:	582347-017	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	DRO-ORO By SW8015B			Prep Method:	8015
Analyst:	PGM	% Moist:		Tech:	PGM
Seq Number:	3046896	Date Prep:	04.16.18 11.35		
		Prep seq:	7642689		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**1600**	24.8	7.41	mg/kg	04.17.18 00:55		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**239**	24.8	7.41	mg/kg	04.17.18 00:55		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	889	65 - 144	%		**
n-Triacontane	396	46 - 152	%		**

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046742	Date Prep:	04.14.18 09.00		
		Prep seq:	7642678		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**86.7**	7.71	0.522	mg/kg	04.16.18 10:25		39

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	106	76 - 123	%		
a,a,a-Trifluorotoluene	75	69 - 120	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**SP-#3 @ 1'**	Matrix:	Soil	Sample Depth:	1 ft
Lab Sample Id:	582347-017	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046743	Date Prep:	04.14.18 09.00		
		Prep seq:	7642675		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.0174	0.0385	0.0174	mg/kg	04.16.18 10:25	U	39
Toluene	108-88-3	**0.570**	0.0385	0.00902	mg/kg	04.16.18 10:25		39
Ethylbenzene	100-41-4	**0.971**	0.0385	0.0119	mg/kg	04.16.18 10:25		39
m_p-Xylenes	179601-23-1	**2.90**	0.0771	0.0131	mg/kg	04.16.18 10:25		39
o-Xylene	95-47-6	**1.52**	0.0385	0.0131	mg/kg	04.16.18 10:25		39
Xylenes, Total	1330-20-7	**4.42**		0.0131	mg/kg	04.16.18 10:25		
Total BTEX		**5.961**		0.00902	mg/kg	04.16.18 10:25		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	110	68 - 120	%		
a,a,a-Trifluorotoluene	108	71 - 121	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id:	**SP-#3 @ 1.5'**	Matrix:	Soil	Sample Depth:	1.5 ft
Lab Sample Id:	582347-018	Date Collected:	04.10.18 00.00	Date Received:	04.12.18 14.07
Analytical Method:	DRO-ORO By SW8015B			Prep Method:	8015
Analyst:	PGM	% Moist:		Tech:	PGM
Seq Number:	3046896	Date Prep:	04.16.18 11.35		
		Prep seq:	7642689		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**451**	25.3	7.56	mg/kg	04.17.18 01:30		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**79.2**	25.3	7.56	mg/kg	04.17.18 01:30		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	248	65 - 144	%		**
n-Triacontane	197	46 - 152	%		**

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3046742	Date Prep:	04.14.18 09.00		
		Prep seq:	7642678		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**18.4**	3.82	0.259	mg/kg	04.16.18 10:51		19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	101	76 - 123	%		
a,a,a-Trifluorotoluene	95	69 - 120	%		

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TRC Solutions, Inc, Midland, TX
COG boone 16 Seg 2

Sample Id: **7642675-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7642675-1-BLK Date Collected: Date Received:

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3046743 Date Prep: 04.14.18 09.00

Prep seq: 7642675

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00904	0.0200	0.00904	mg/kg	04.15.18 20:26	U	20
Toluene	108-88-3	<0.00468	0.0200	0.00468	mg/kg	04.15.18 20:26	U	20
Ethylbenzene	100-41-4	<0.00616	0.0200	0.00616	mg/kg	04.15.18 20:26	U	20
m_p-Xylenes	179601-23-1	<0.00682	0.0400	0.00682	mg/kg	04.15.18 20:26	U	20
o-Xylene	95-47-6	<0.00682	0.0200	0.00682	mg/kg	04.15.18 20:26	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	91	68 - 120	%		
a,a,a-Trifluorotoluene	94	71 - 121	%		

Sample Id: **7642678-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7642678-1-BLK Date Collected: Date Received:

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3046742 Date Prep: 04.14.18 09.00

Prep seq: 7642678

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.271	4.00	0.271	mg/kg	04.15.18 20:26	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	87	76 - 123	%		
a,a,a-Trifluorotoluene	114	69 - 120	%		

Sample Id: **7642689-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7642689-1-BLK Date Collected: Date Received:

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3046896 Date Prep: 04.16.18 11.35

Prep seq: 7642689

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.48	25.0	7.48	mg/kg	04.16.18 12:39	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.48	25.0	7.48	mg/kg	04.16.18 12:39	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	99	65 - 144	%		
n-Triacontane	83	46 - 152	%		

Sample Id: **7642767-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7642767-1-BLK Date Collected: Date Received:

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

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3046874 Date Prep: 04.16.18 12.30

Prep seq: 7642767

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**1.03**	25.0	0.572	mg/kg	04.16.18 16:36	J	1

Sample Id: **7642836-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7642836-1-BLK Date Collected: Date Received:

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3047047 Date Prep: 04.17.18 11.00

Prep seq: 7642836

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.271	4.00	0.271	mg/kg	04.17.18 23:30	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	87	76 - 123	%		
a,a,a-Trifluorotoluene	115	69 - 120	%		

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 boone 16 Seg 2

Work Orders : 582347, **Project ID:**

Lab Batch #: 3046743 **Sample:** 7642675-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/15/18 17:44

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0882	0.100	88	68-120	
a,a,a-Trifluorotoluene	1.71	2.00	86	71-121	

Lab Batch #: 3046743 **Sample:** 7642675-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/15/18 18:10

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0859	0.100	86	68-120	
a,a,a-Trifluorotoluene	1.70	2.00	85	71-121	

Lab Batch #: 3046743 **Sample:** 7642675-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/15/18 20:26

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0914	0.100	91	68-120	
a,a,a-Trifluorotoluene	1.87	2.00	94	71-121	

Lab Batch #: 3046896 **Sample:** 7642689-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/16/18 12:39

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	9.87	10.0	99	65-144	
n-Triacontane	8.30	10.0	83	46-152	

Lab Batch #: 3046896 **Sample:** 7642689-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/16/18 14:18

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	12.1	10.0	121	65-144	
n-Triacontane	8.48	10.0	85	46-152	

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

Form 2 - Surrogate Recoveries

Project Name: COG boone 16 Seg 2

Work Orders : 582347,

Project ID:

Lab Batch #: 3046896 **Sample:** 582347-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/16/18 15:23

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	68.2	9.93	687	65-144	**
n-Triacontane	42.8	9.93	431	46-152	**

Lab Batch #: 3046896 **Sample:** 582347-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/16/18 15:56

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	69.0	9.99	691	65-144	**
n-Triacontane	41.5	9.99	415	46-152	**

Lab Batch #: 3046896 **Sample:** 7642689-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/17/18 12:26

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.4	10.0	104	65-144	
n-Triacontane	8.60	10.0	86	46-152	

Lab Batch #: 3046742 **Sample:** 7642678-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/15/18 18:37

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	0.0899	0.100	90	76-123	
a,a,a-Trifluorotoluene	1.77	2.00	89	69-120	

Lab Batch #: 3046742 **Sample:** 7642678-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/15/18 19:04

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	0.0898	0.100	90	76-123	
a,a,a-Trifluorotoluene	1.66	2.00	83	69-120	

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

Form 2 - Surrogate Recoveries

Project Name: COG boone 16 Seg 2

Work Orders : 582347,

Project ID:

Lab Batch #: 3046742 **Sample:** 7642678-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/15/18 20:26

TPH GRO by EPA 8015 Mod.	SURROGATE RECOVERY STUDY				
Analytes	**Amount Found [A]**	**True Amount [B]**	**Recovery %R [D]**	**Control Limits %R**	**Flags**
4-Bromofluorobenzene	0.0869	0.100	87	76-123	
a,a,a-Trifluorotoluene	2.28	2.00	114	69-120	

Lab Batch #: 3046742 **Sample:** 582347-012 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/15/18 22:14

TPH GRO by EPA 8015 Mod.	SURROGATE RECOVERY STUDY				
Analytes	**Amount Found [A]**	**True Amount [B]**	**Recovery %R [D]**	**Control Limits %R**	**Flags**
4-Bromofluorobenzene	0.0979	0.100	98	76-123	
a,a,a-Trifluorotoluene	1.32	1.81	73	69-120	

Lab Batch #: 3046742 **Sample:** 582347-012 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/15/18 22:40

TPH GRO by EPA 8015 Mod.	SURROGATE RECOVERY STUDY				
Analytes	**Amount Found [A]**	**True Amount [B]**	**Recovery %R [D]**	**Control Limits %R**	**Flags**
4-Bromofluorobenzene	0.0972	0.100	97	76-123	
a,a,a-Trifluorotoluene	1.40	1.88	74	69-120	

Lab Batch #: 3047047 **Sample:** 7642836-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/17/18 21:41

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

Lab Batch #: 3047047 **Sample:** 7642836-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/17/18 22:08

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

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

Form 2 - Surrogate Recoveries

Project Name: COG boone 16 Seg 2

Work Orders : 582347,

Project ID:

Lab Batch #: 3047047 **Sample:** 7642836-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/17/18 23:30

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	0.0873	0.100	87	76-123	
a,a,a-Trifluorotoluene	2.29	2.00	115	69-120	

Lab Batch #: 3047047 **Sample:** 582357-002 S / MS **Batch:** 1 **Matrix:** Soil

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

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	0.101	0.100	101	76-123	
a,a,a-Trifluorotoluene	1.47	1.96	75	69-120	

Lab Batch #: 3047047 **Sample:** 582357-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/18/18 01:45

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

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

BS / BSD Recoveries

Project Name: COG boone 16 Seg 2

Work Order #: 582347 **Project ID:**

Analyst: MIT **Date Prepared:** 04/14/2018 **Date Analyzed:** 04/15/2018

Lab Batch ID: 3046743 **Sample:** 7642675-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00904	2.00	2.40	120	2.00	2.40	120	0	55-120	20	
Toluene	<0.00468	2.00	2.20	110	2.00	2.23	112	1	77-120	20	
Ethylbenzene	<0.00616	2.00	2.11	106	2.00	2.13	107	1	77-120	20	
m_p-Xylenes	<0.00682	4.00	4.24	106	4.00	4.27	107	1	78-120	20	
o-Xylene	<0.00682	2.00	2.16	108	2.00	2.17	109	0	78-120	20	

Analyst: PGM **Date Prepared:** 04/16/2018 **Date Analyzed:** 04/17/2018

Lab Batch ID: 3046896 **Sample:** 7642689-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Diesel Range Organics (DRO)	<7.48	100	79.9	80	100	96.0	96	18	63-139	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 boone 16 Seg 2

Work Order #: 582347 **Project ID:**

Analyst: RNL **Date Prepared:** 04/16/2018 **Date Analyzed:** 04/16/2018

Lab Batch ID: 3046874 **Sample:** 7642767-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1.03	250	250	100	250	253	101	1	90-110	20	

Analyst: MIT **Date Prepared:** 04/14/2018 **Date Analyzed:** 04/15/2018

Lab Batch ID: 3046742 **Sample:** 7642678-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<0.271	20.0	17.6	88	20.0	17.6	88	0	35-129	20	

Analyst: MIT **Date Prepared:** 04/17/2018 **Date Analyzed:** 04/17/2018

Lab Batch ID: 3047047 **Sample:** 7642836-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<0.271	20.0	17.8	89	20.0	19.9	100	11	35-129	20	

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

Form 3 - MS / MSD Recoveries

Project Name: COG boone 16 Seg 2

Work Order # : 582347 **Project ID:**

Lab Batch ID: 3046896 **QC- Sample ID:** 582347-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/16/2018 **Date Prepared:** 04/16/2018 **Analyst:** PGM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Diesel Range Organics (DRO)	1110	99.3	1270	161	99.9	1300	190	2	63-139	20	X

Lab Batch ID: 3046874 **QC- Sample ID:** 582347-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/16/2018 **Date Prepared:** 04/16/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	128	250	353	90	250	365	95	3	80-120	20	

Lab Batch ID: 3046874 **QC- Sample ID:** 582353-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/16/2018 **Date Prepared:** 04/16/2018 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	151	250	385	94	250	375	90	3	80-120	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 boone 16 Seg 2

Work Order # : 582347 **Project ID:**

Lab Batch ID: 3046742 **QC- Sample ID:** 582347-012 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/15/2018 **Date Prepared:** 04/14/2018 **Analyst:** MIT

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<0.246	18.1	14.5	80	18.8	15.4	82	6	35-129	20	

Lab Batch ID: 3047047 **QC- Sample ID:** 582357-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/18/2018 **Date Prepared:** 04/17/2018 **Analyst:** MIT

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<0.266	19.6	10.3	53	19.5	11.4	58	10	35-129	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.

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Phoenix, Arizona (480-355-0900)

Xenco Job # 582347

Client / Reporting Information	Project Information
Company Name / Branch: TRC Environmental	Project Name/Number: COG Boone 16 Seg 2
Company Address: 2057 Commerce Drive, Midland, TX 79703	Project Location: Lea Co, NM
Email: jlowry@trcsolutions.com Phone No:	Invoice To: Plains Pipeline C/O Camille Bryant
Project Contact: Joel Lowry	Invoice: SRS No Pending
Samplers's Name Joel Lowry	

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH 8015 M Ext	BTEX 8021b	Chloride	Field Comments
1	OS#1 0-6"		4/10/2018												x	x	x	1
2	OS#1 6-12"		4/10/2018												x			2
3	OS#2 0-6"		4/10/2018												x	x	x	3
4	OS#2 6-12"		4/10/2018												x			4
5	OS#3 0-6"		4/10/2018												x	x	x	5
6	OS#3 6-12"		4/10/2018												x			6
7	OS#4 0-6"		4/10/2018												x	x	x	7
8	OS#4 6-12"		4/10/2018												x			8
9	OS#5 0-6"		4/10/2018												x	x	x	9
10	OS#5 6-12"		4/10/2018												x			10

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:
Email Camille Bryant and Joel Lowry
zconder, algroves

FED-EX / UPS: Tracking #

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

Relinquished by Sampler: 1 Joel Lowry	Date Time: 4/10/18 14:07	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: Cooler Temp: 1.3 Thermo. Corr. Factor: 0.2

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.

Final 1.000

CHAIN OF CUSTODY

XENCO LABORATORIES

Setting the Standard since 1990

Page 1 Of 2

Stafford,Texas (281-240-4200)

Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

582347

www.xenco.com

Xenco Job # 582347

Client / Reporting Information	Project Information
Company Name / Branch: TRC Environmental	Project Name/Number: COG Boone 16 Seg 2
Company Address: 2057 Commerce Drive Midland, TX 79703	Project Location: Lea Co, NM
Email: jlowry@trcsolutions.com Phone No:	Invoice To: Plains Pipeline C/O Camille Bryant
Project Contact: Joel Lowry	Invoice: SRS No Pending
Samplers's Name Joel Lowry	

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	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	BTEX 8021b	Chloride	Field Comments
1	OS#6 0-6"		4/10/018												x	x	x	11
2	OS#6 6-12"		4/10/2018												x			12
3	SP # 1 @ 1.5'		4/10/2018												x	x		13
4	SP #1 @ 2'		4/10/2018												x			14
5	SP # 2 @ 1.5'		4/10/2018												x	x		15
6	SP #2 @ 2'		4/10/2018												x			16
7	SP # 3 @ 1'		4/10/2018												x	x		17
8	SP #3 @ 1.5'		4/10/2018												x			18
9																		
10																		

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:

Email Camille Bryant and Joel Lowry

zconder, algroves

FED-EX / UPS: Tracking #

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

Relinquished by Sampler: 1	Date Time: 4/12/18 14:0	Received By:	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp / 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.

Final 1.000

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 04/12/2018 02:07:00 PM

Work Order #: 582347

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

Temperature Measuring device used :

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

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

Analyst:

PH Device/Lot#: IR-3

Checklist completed by: Brenda Ward Date: 04/13/2018
Brenda Ward

Checklist reviewed by: Holly Taylor Date: 04/16/2018
Holly Taylor

Certificate of Analysis Summary 582908

TRC Solutions, Inc, Midland, TX

Project Name: COG Boone 16 2H Seg 2

Project Id:
Contact: Joel Lowry
Project Location: Lea Co, NM

Date Received in Lab: Thu Apr-19-18 09:00 am
Report Date: 23-APR-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	582908-001		582908-002		582908-003		582908-004		582908-005		582908-006	
	Field Id:	FL-1@2ft		ESW-1 @2ft		NSW-1@2ft		WSW-1@2ft		FL-2@1.5FT		ESW-2@1.5FT	
	Depth:	2 ft		2 ft		2 ft		2 ft		1.5 ft		1.5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-18-18 14:50		Apr-18-18 15:00		Apr-18-18 15:10		Apr-18-18 15:20		Apr-18-18 15:30		Apr-18-18 15:40	
BTEX by EPA 8021B	***Extracted:***	Apr-19-18 09:15		Apr-19-18 09:15		Apr-19-18 09:15		Apr-19-18 09:15		Apr-19-18 09:15		Apr-19-18 09:15	
	Analyzed:	Apr-19-18 19:07		Apr-19-18 19:26		Apr-19-18 19:45		Apr-19-18 20:04		Apr-19-18 20:24		Apr-19-18 20:43	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00198	0.00198	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Toluene		<0.00198	0.00198	<0.00200	0.00200	0.0124	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Ethylbenzene		<0.00198	0.00198	0.00314	0.00200	0.0172	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
m,p-Xylenes		<0.00397	0.00397	0.0199	0.00401	0.0499	0.00402	<0.00398	0.00398	<0.00398	0.00398	<0.00401	0.00401
o-Xylene		<0.00198	0.00198	0.0128	0.00200	0.0219	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.00200	0.00200
Xylenes, Total		<0.00198	0.00198	0.0327	0.002	0.0718	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.002	0.002
Total BTEX		<0.00198	0.00198	0.03584	0.002	0.1014	0.00201	<0.00199	0.00199	<0.00199	0.00199	<0.002	0.002
TPH by SW8015 Mod	***Extracted:***	Apr-19-18 16:00		Apr-19-18 16:00		Apr-19-18 16:00		Apr-19-18 16:00		Apr-19-18 16:00		Apr-19-18 16:00	
	Analyzed:	Apr-20-18 06:33		Apr-20-18 07:50		Apr-20-18 08:16		Apr-20-18 08:43		Apr-20-18 09:08		Apr-20-18 09:34	
	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	28.4	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	775	14.9	110	15.0	54.9	15.0	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0	83.1	14.9	21.8	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15	15	886.5	14.9	131.8	15	54.9	15	<15	15	<15	15

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 582908

TRC Solutions, Inc, Midland, TX

Project Name: COG Boone 16 2H Seg 2

Project Id:
Contact: Joel Lowry
Project Location: Lea Co, NM

Date Received in Lab: Thu Apr-19-18 09:00 am
Report Date: 23-APR-18
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	582908-007		582908-008					
	Field Id:	WSW-2@1.5FT		SWS-2@0.5FT					
	Depth:	1.5 ft		0.5 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Apr-18-18 15:50		Apr-18-18 16:00					
BTEX by EPA 8021B	***Extracted:***	Apr-19-18 17:00		Apr-19-18 17:00					
	Analyzed:	Apr-19-18 23:36		Apr-19-18 23:56					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00202	0.00202	<0.00199	0.00199				
Toluene		<0.00202	0.00202	<0.00199	0.00199				
Ethylbenzene		<0.00202	0.00202	<0.00199	0.00199				
m,p-Xylenes		<0.00403	0.00403	<0.00398	0.00398				
o-Xylene		<0.00202	0.00202	<0.00199	0.00199				
Xylenes, Total		<0.00202	0.00202	<0.00199	0.00199				
Total BTEX		<0.00202	0.00202	<0.00199	0.00199				
TPH by SW8015 Mod	***Extracted:***	Apr-19-18 16:00		Apr-19-18 16:00					
	Analyzed:	Apr-20-18 09:59		Apr-20-18 10:25					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		47.9	15.0	22.0	15.0				
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0				
Total TPH		47.9	15	22	15				

Kelsey Brooks
Project Manager

Analytical Report 582908

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Boone 16 2H Seg 2

23-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)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

23-APR-18

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

Reference: XENCO Report No(s): **582908**
COG Boone 16 2H Seg 2
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) 582908. 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. 582908 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 582908

TRC Solutions, Inc, Midland, TX

COG Boone 16 2H Seg 2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-1@2ft	S	04-18-18 14:50	- 2 ft	582908-001
ESW-1 @2ft	S	04-18-18 15:00	- 2 ft	582908-002
NSW-1@2ft	S	04-18-18 15:10	- 2 ft	582908-003
WSW-1@2ft	S	04-18-18 15:20	- 2 ft	582908-004
FL-2@1.5FT	S	04-18-18 15:30	- 1.5 ft	582908-005
ESW-2@1.5FT	S	04-18-18 15:40	- 1.5 ft	582908-006
WSW-1@1.5FT	S	04-18-18 15:50	- 1.5 ft	582908-007
SWS-2@0.5FT	S	04-18-18 16:00	- 0.5 ft	582908-008

Sample receipt non conformances and comments:

Revision to correct sample name 582908-002-- KB

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3047323 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3047326 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

TRC Solutions, Inc, Midland, TX

COG Boone 16 2H Seg 2

Sample Id:	**FL-1@2ft**	Matrix:	Soil	Date Received:	04.19.18 09.00
Lab Sample Id:	582908-001	Date Collected:	04.18.18 14.50	Sample Depth:	2 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.19.18 16.00	Basis:	Wet Weight
Seq Number:	3047364				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.20.18 06.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.20.18 06.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.20.18 06.33	U	1
Total TPH	PHC635	<15	15	mg/kg	04.20.18 06.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	04.20.18 06.33	
o-Terphenyl	84-15-1	109	%	70-135	04.20.18 06.33	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.19.18 09.15	Basis:	Wet Weight
Seq Number:	3047323				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.19.18 19.07	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.19.18 19.07	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.19.18 19.07	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.19.18 19.07	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.19.18 19.07	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.19.18 19.07	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.19.18 19.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	04.19.18 19.07	
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.19.18 19.07	

TRC Solutions, Inc, Midland, TX

COG Boone 16 2H Seg 2

Sample Id:	**ESW-1 @2ft**	Matrix:	Soil	Date Received:	04.19.18 09.00
Lab Sample Id:	582908-002	Date Collected:	04.18.18 15.00	Sample Depth:	2 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.19.18 16.00	Basis:	Wet Weight
Seq Number:	3047364				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**28.4**	14.9	mg/kg	04.20.18 07.50		1
Diesel Range Organics (DRO)	C10C28DRO	**775**	14.9	mg/kg	04.20.18 07.50		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**83.1**	14.9	mg/kg	04.20.18 07.50		1
Total TPH	PHC635	**886.5**	14.9	mg/kg	04.20.18 07.50		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	04.20.18 07.50	
o-Terphenyl	84-15-1	106	%	70-135	04.20.18 07.50	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.19.18 09.15	Basis:	Wet Weight
Seq Number:	3047323				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.19.18 19.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.19.18 19.26	U	1
Ethylbenzene	100-41-4	**0.00314**	0.00200	mg/kg	04.19.18 19.26		1
m,p-Xylenes	179601-23-1	**0.0199**	0.00401	mg/kg	04.19.18 19.26		1
o-Xylene	95-47-6	**0.0128**	0.00200	mg/kg	04.19.18 19.26		1
Xylenes, Total	1330-20-7	**0.0327**	0.002	mg/kg	04.19.18 19.26		1
Total BTEX		**0.03584**	0.002	mg/kg	04.19.18 19.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.19.18 19.26	
1,4-Difluorobenzene	540-36-3	96	%	70-130	04.19.18 19.26	

Certificate of Analytical Results 582908

TRC Solutions, Inc, Midland, TX

COG Boone 16 2H Seg 2

Sample Id:	**NSW-1@2ft**	Matrix:	Soil	Date Received:	04.19.18 09.00
Lab Sample Id:	582908-003	Date Collected:	04.18.18 15.10	Sample Depth:	2 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.19.18 16.00	Basis:	Wet Weight
Seq Number:	3047364				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.20.18 08.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	**110**	15.0	mg/kg	04.20.18 08.16		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**21.8**	15.0	mg/kg	04.20.18 08.16		1
Total TPH	PHC635	**131.8**	15	mg/kg	04.20.18 08.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	04.20.18 08.16	
o-Terphenyl	84-15-1	95	%	70-135	04.20.18 08.16	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.19.18 09.15	Basis:	Wet Weight
Seq Number:	3047323				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.19.18 19.45	U	1
Toluene	108-88-3	**0.0124**	0.00201	mg/kg	04.19.18 19.45		1
Ethylbenzene	100-41-4	**0.0172**	0.00201	mg/kg	04.19.18 19.45		1
m,p-Xylenes	179601-23-1	**0.0499**	0.00402	mg/kg	04.19.18 19.45		1
o-Xylene	95-47-6	**0.0219**	0.00201	mg/kg	04.19.18 19.45		1
Xylenes, Total	1330-20-7	**0.0718**	0.00201	mg/kg	04.19.18 19.45		1
Total BTEX		**0.1014**	0.00201	mg/kg	04.19.18 19.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	04.19.18 19.45	
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.19.18 19.45	

TRC Solutions, Inc, Midland, TX

COG Boone 16 2H Seg 2

Sample Id:	**WSW-1@2ft**	Matrix:	Soil	Date Received:	04.19.18 09.00
Lab Sample Id:	582908-004	Date Collected:	04.18.18 15.20	Sample Depth:	2 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.19.18 16.00	Basis:	Wet Weight
Seq Number:	3047364				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.20.18 08.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	**54.9**	15.0	mg/kg	04.20.18 08.43		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.20.18 08.43	U	1
Total TPH	PHC635	**54.9**	15	mg/kg	04.20.18 08.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	04.20.18 08.43	
o-Terphenyl	84-15-1	92	%	70-135	04.20.18 08.43	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.19.18 09.15	Basis:	Wet Weight
Seq Number:	3047323				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.19.18 20.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.19.18 20.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.19.18 20.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.19.18 20.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.19.18 20.04	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.19.18 20.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.19.18 20.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	93	%	70-130	04.19.18 20.04	
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.19.18 20.04	

TRC Solutions, Inc, Midland, TX

COG Boone 16 2H Seg 2

Sample Id:	**FL-2@1.5FT**	Matrix:	Soil	Date Received:	04.19.18 09.00
Lab Sample Id:	582908-005	Date Collected:	04.18.18 15.30	Sample Depth:	1.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.19.18 16.00	Basis:	Wet Weight
Seq Number:	3047364				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.20.18 09.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.20.18 09.08	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.20.18 09.08	U	1
Total TPH	PHC635	<15	15	mg/kg	04.20.18 09.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	04.20.18 09.08	
o-Terphenyl	84-15-1	91	%	70-135	04.20.18 09.08	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.19.18 09.15	Basis:	Wet Weight
Seq Number:	3047323				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.19.18 20.24	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.19.18 20.24	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.19.18 20.24	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.19.18 20.24	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.19.18 20.24	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.19.18 20.24	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.19.18 20.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	89	%	70-130	04.19.18 20.24	
4-Bromofluorobenzene	460-00-4	91	%	70-130	04.19.18 20.24	

TRC Solutions, Inc, Midland, TX

COG Boone 16 2H Seg 2

Sample Id:	**ESW-2@1.5FT**	Matrix:	Soil	Date Received:	04.19.18 09.00
Lab Sample Id:	582908-006	Date Collected:	04.18.18 15.40	Sample Depth:	1.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.19.18 16.00	Basis:	Wet Weight
Seq Number:	3047364				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.20.18 09.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.20.18 09.34	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.20.18 09.34	U	1
Total TPH	PHC635	<15	15	mg/kg	04.20.18 09.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	04.20.18 09.34	
o-Terphenyl	84-15-1	98	%	70-135	04.20.18 09.34	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.19.18 09.15	Basis:	Wet Weight
Seq Number:	3047323				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.19.18 20.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.19.18 20.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.19.18 20.43	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.19.18 20.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.19.18 20.43	U	1
Xylenes, Total	1330-20-7	<0.002	0.002	mg/kg	04.19.18 20.43	U	1
Total BTEX		<0.002	0.002	mg/kg	04.19.18 20.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.19.18 20.43	
1,4-Difluorobenzene	540-36-3	95	%	70-130	04.19.18 20.43	

TRC Solutions, Inc, Midland, TX

COG Boone 16 2H Seg 2

Sample Id:	**WSW-1@1.5FT**	Matrix:	Soil	Date Received:	04.19.18 09.00
Lab Sample Id:	582908-007	Date Collected:	04.18.18 15.50	Sample Depth:	1.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.19.18 16.00	Basis:	Wet Weight
Seq Number:	3047364				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.20.18 09.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	**47.9**	15.0	mg/kg	04.20.18 09.59		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.20.18 09.59	U	1
Total TPH	PHC635	**47.9**	15	mg/kg	04.20.18 09.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	04.20.18 09.59	
o-Terphenyl	84-15-1	99	%	70-135	04.20.18 09.59	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.19.18 17.00	Basis:	Wet Weight
Seq Number:	3047326				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.19.18 23.36	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.19.18 23.36	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.19.18 23.36	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.19.18 23.36	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.19.18 23.36	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.19.18 23.36	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.19.18 23.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	87	%	70-130	04.19.18 23.36	
1,4-Difluorobenzene	540-36-3	93	%	70-130	04.19.18 23.36	

TRC Solutions, Inc, Midland, TX

COG Boone 16 2H Seg 2

Sample Id:	**SWS-2@0.5FT**	Matrix:	Soil	Date Received:	04.19.18 09.00
Lab Sample Id:	582908-008	Date Collected:	04.18.18 16.00	Sample Depth:	0.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	04.19.18 16.00	Basis:	Wet Weight
Seq Number:	3047364				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.20.18 10.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	**22.0**	15.0	mg/kg	04.20.18 10.25		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	04.20.18 10.25	U	1
Total TPH	PHC635	**22**	15	mg/kg	04.20.18 10.25		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	04.20.18 10.25	
o-Terphenyl	84-15-1	98	%	70-135	04.20.18 10.25	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	04.19.18 17.00	Basis:	Wet Weight
Seq Number:	3047326				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.19.18 23.56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.19.18 23.56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.19.18 23.56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.19.18 23.56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.19.18 23.56	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.19.18 23.56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.19.18 23.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.19.18 23.56	
1,4-Difluorobenzene	540-36-3	97	%	70-130	04.19.18 23.56	

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 582908

TRC Solutions, Inc

COG Boone 16 2H Seg 2

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3047364 — Matrix: Solid — Date Prep: 04.19.18
MB Sample Id: 7643028-1-BLK — LCS Sample Id: 7643028-1-BKS — LCSD Sample Id: 7643028-1-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	1030	103	1030	103	70-135	0	20	mg/kg	04.20.18 05:41	
Diesel Range Organics (DRO)	<15.0	1000	1070	107	1090	109	70-135	2	20	mg/kg	04.20.18 05:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		116		113		70-135	%	04.20.18 05:41
o-Terphenyl	100		116		116		70-135	%	04.20.18 05:41

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3047364 — Matrix: Soil — Date Prep: 04.19.18
Parent Sample Id: 582908-001 — MS Sample Id: 582908-001 S — MSD Sample Id: 582908-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	943	94	945	95	70-135	0	20	mg/kg	04.20.18 06:59	
Diesel Range Organics (DRO)	<15.0	1000	972	97	974	98	70-135	0	20	mg/kg	04.20.18 06:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		107		70-135	%	04.20.18 06:59
o-Terphenyl	106		107		70-135	%	04.20.18 06:59

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3047323 — Matrix: Solid — Date Prep: 04.19.18
MB Sample Id: 7643017-1-BLK — LCS Sample Id: 7643017-1-BKS — LCSD Sample Id: 7643017-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.116	116	0.114	114	70-130	2	35	mg/kg	04.19.18 11:27	
Toluene	<0.00201	0.100	0.110	110	0.109	109	70-130	1	35	mg/kg	04.19.18 11:27	
Ethylbenzene	<0.00201	0.100	0.111	111	0.110	110	70-130	1	35	mg/kg	04.19.18 11:27	
m,p-Xylenes	<0.00402	0.201	0.227	113	0.225	113	70-130	1	35	mg/kg	04.19.18 11:27	
o-Xylene	<0.00201	0.100	0.112	112	0.110	110	70-130	2	35	mg/kg	04.19.18 11:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		97		101		70-130	%	04.19.18 11:27
4-Bromofluorobenzene	76		94		101		70-130	%	04.19.18 11:27

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

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

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

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

QC Summary 582908

TRC Solutions, Inc

COG Boone 16 2H Seg 2

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3047326 — Matrix: Solid — Date Prep: 04.19.18
MB Sample Id: 7643021-1-BLK — LCS Sample Id: 7643021-1-BKS — LCSD Sample Id: 7643021-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.119	119	0.118	118	70-130	1	35	mg/kg	04.19.18 21:21	
Toluene	<0.00200	0.0998	0.113	113	0.113	113	70-130	0	35	mg/kg	04.19.18 21:21	
Ethylbenzene	<0.00200	0.0998	0.113	113	0.111	111	70-130	2	35	mg/kg	04.19.18 21:21	
m,p-Xylenes	<0.00399	0.200	0.230	115	0.228	113	70-130	1	35	mg/kg	04.19.18 21:21	
o-Xylene	<0.00200	0.0998	0.117	117	0.113	113	70-130	3	35	mg/kg	04.19.18 21:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		101		95		70-130	%	04.19.18 21:21
4-Bromofluorobenzene	84		100		97		70-130	%	04.19.18 21:21

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3047323 — Matrix: Soil — Date Prep: 04.19.18
Parent Sample Id: 582861-001 — MS Sample Id: 582861-001 S — MSD Sample Id: 582861-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0898	90	0.0940	95	70-130	5	35	mg/kg	04.19.18 12:06	
Toluene	<0.00200	0.100	0.0770	77	0.0831	84	70-130	8	35	mg/kg	04.19.18 12:06	
Ethylbenzene	<0.00200	0.100	0.0665	67	0.0749	75	70-130	12	35	mg/kg	04.19.18 12:06	X
m,p-Xylenes	<0.00401	0.200	0.133	67	0.150	75	70-130	12	35	mg/kg	04.19.18 12:06	X
o-Xylene	<0.00200	0.100	0.0683	68	0.0759	76	70-130	11	35	mg/kg	04.19.18 12:06	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		103		70-130	%	04.19.18 12:06
4-Bromofluorobenzene	95		97		70-130	%	04.19.18 12:06

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3047326 — Matrix: Soil — Date Prep: 04.19.18
Parent Sample Id: 582908-007 — MS Sample Id: 582908-007 S — MSD Sample Id: 582908-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.107	107	0.117	116	70-130	9	35	mg/kg	04.19.18 22:00	
Toluene	<0.00201	0.100	0.0995	100	0.110	109	70-130	10	35	mg/kg	04.19.18 22:00	
Ethylbenzene	<0.00201	0.100	0.0961	96	0.109	108	70-130	13	35	mg/kg	04.19.18 22:00	
m,p-Xylenes	<0.00402	0.201	0.197	98	0.225	111	70-130	13	35	mg/kg	04.19.18 22:00	
o-Xylene	<0.00201	0.100	0.0987	99	0.113	112	70-130	14	35	mg/kg	04.19.18 22:00	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		99		70-130	%	04.19.18 22:00
4-Bromofluorobenzene	97		101		70-130	%	04.19.18 22:00

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

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

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

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

CHAIN OF CUSTODY

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Xenco Job # 582908

Client / Reporting Information	Project Information
Company Name / Branch: TRC Environmental Corporation	Project Name/Number: COG Boone 16 2H Seg 2
Company Address: 2057 Commerce Drive, Midland, TX 79703	Project Location: Lea Co, NM
Email: jlowry@trcsolutions.com Phone No: 432-466-4450	Invoice To: Plains C/O Camille Bryant
Project Contact: Joel Lowry	Invoice: 302711
Samplers's Name Joel Lowry	

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	FL-1@2ft	2ft	4/18/2018	14:50	s	1									X		X	
2	WSW-1@2ft	2ft	4/18/2018	15:00	s	1									X		X	
3	NSW-1@2ft	2ft	4/18/2018	15:10	s	1									X		X	
4	WSW-1@2ft	2ft	4/18/2018	15:20	s	1									X		X	
5	FL-2@1.5ft	1.5ft	4/18/2018	15:30	s	1									X		X	
6	ESW-2@1.5ft	1.5ft	4/18/2018	15:40	s	1									X		X	
7	WSW-2@1.5ft	1.5ft	4/18/2018	15:50	s	1									X		X	
8	SWS-2@0.5ft	0.5ft	4/18/2018	16:00	s	1									X		X	
9																		
10																		

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

Data Deliverable Information

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [x] 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
- [ ] 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

Notes:
jlowry@trcsolutions.com
zcondor@trcsolutions.com
sreynolds@trcsolutions.com
FED-EX / UPS: Tracking #

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

1 Relinquished by Sampler: Reynolds	Date Time: 4/19/18 1230	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2
3 Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5 Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	

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 b 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 wil be limited to the cost of samples. Any samples re be enforced unless previously negotiated under a fully executed client contract.

Temp: 8.0 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 8.2

Final 1.001

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 04/19/2018 09:00:00 AM

Work Order #: 582908

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)?	8.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6*Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 04/19/2018

Checklist reviewed by: Kelsey Brooks Date: 04/20/2018

Analytical Report 584083

for

TRC Solutions, Inc

Project Manager: Joel Lowry

Boone 16 Tank Battery Seg.2

04-MAY-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

Table of Contents

04-MAY-18

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

Reference: XENCO Report No(s): **584083**
Boone 16 Tank Battery Seg.2
Project Address: Eddy, Co. NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 584083. 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. 584083 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 584083

TRC Solutions, Inc, Midland, TX

Boone 16 Tank Battery Seg.2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
OS #7 @ 0-6"	S	04-26-18 12:40	0 - 6 In	584083-001
OS #2 @ 3-6"	S	04-26-18 12:40	3 - 6 In	584083-002

CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: Boone 16 Tank Battery Seg.2

Project ID:
Work Order Number(s): *584083*

Report Date: *04-MAY-18*
Date Received: *04/27/2018*

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

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3048434 DRO-ORO By SW8015B
Surrogate Tricosane, Surrogate n-Triacontane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 584083-002.

Batch: LBA-3048456 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3048459 TPH GRO by EPA 8015 Mod.
Surrogate a,a,a-Trifluorotoluene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7643682-1-BLK.

Certificate of Analytical Results
584083

TRC Solutions, Inc, Midland, TX
Boone 16 Tank Battery Seg.2

Sample Id: **OS #7 @ 0-6"** Matrix: Soil Sample Depth: 0 - 6 In

Lab Sample Id: 584083-001 Date Collected: 04.26.18 12.40 Date Received: 04.27.18 15.37

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3048434 Date Prep: 04.30.18 12.30

Prep seq: 7643670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.46	24.9	7.46	mg/kg	04.30.18 22:42	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.46	24.9	7.46	mg/kg	04.30.18 22:42	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	125	65 - 144	%		
n-Triacontane	112	46 - 152	%		

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3048459 Date Prep: 04.30.18 13.00

Prep seq: 7643682

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.261	3.85	0.261	mg/kg	04.30.18 20:06	U	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	108	76 - 123	%		
a,a,a-Trifluorotoluene	97	69 - 120	%		

Certificate of Analytical Results
584083

TRC Solutions, Inc, Midland, TX
Boone 16 Tank Battery Seg.2

Sample Id:	**OS #7 @ 0-6"**	Matrix:	Soil	Sample Depth:	0 - 6 In
Lab Sample Id:	584083-001	Date Collected:	04.26.18 12.40	Date Received:	04.27.18 15.37
Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3048456	Date Prep:	04.30.18 13.00		
		Prep seq:	7643680		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00871	0.0193	0.00871	mg/kg	04.30.18 20:06	U	19
Toluene	108-88-3	<0.00451	0.0193	0.00451	mg/kg	04.30.18 20:06	U	19
Ethylbenzene	100-41-4	<0.00593	0.0193	0.00593	mg/kg	04.30.18 20:06	U	19
m_p-Xylenes	179601-23-1	<0.00657	0.0385	0.00657	mg/kg	04.30.18 20:06	U	19
o-Xylene	95-47-6	<0.00657	0.0193	0.00657	mg/kg	04.30.18 20:06	U	19
Xylenes, Total	1330-20-7	<0.00657		0.00657	mg/kg	04.30.18 20:06	U	
Total BTEX		<0.00451		0.00451	mg/kg	04.30.18 20:06	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	119	68 - 120	%		
a,a,a-Trifluorotoluene	108	71 - 121	%		

Certificate of Analytical Results
584083

TRC Solutions, Inc, Midland, TX
Boone 16 Tank Battery Seg.2

Sample Id: **OS #2 @ 3-6"** Matrix: Soil Sample Depth: 3 - 6 In

Lab Sample Id: 584083-002 Date Collected: 04.26.18 12.40 Date Received: 04.27.18 15.37

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3048434 Date Prep: 04.30.18 12.30

Prep seq: 7643670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**1020**	24.8	7.43	mg/kg	04.30.18 23:18		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**188**	24.8	7.43	mg/kg	04.30.18 23:18		1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	723	65 - 144	%		**
n-Triacontane	448	46 - 152	%		**

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3048459 Date Prep: 04.30.18 13.00

Prep seq: 7643682

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.248	3.66	0.248	mg/kg	04.30.18 22:50	U	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	104	76 - 123	%		
a,a,a-Trifluorotoluene	101	69 - 120	%		

Certificate of Analytical Results
584083

TRC Solutions, Inc, Midland, TX
Boone 16 Tank Battery Seg.2

Sample Id: **7643670-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7643670-1-BLK Date Collected: Date Received:

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

Analyst: PGM % Moist: Tech: PGM

Seq Number: 3048434 Date Prep: 04.30.18 12.30

Prep seq: 7643670

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.48	25.0	7.48	mg/kg	04.30.18 13:38	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.48	25.0	7.48	mg/kg	04.30.18 13:38	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	105	65 - 144	%		
n-Triacontane	93	46 - 152	%		

Sample Id: **7643680-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7643680-1-BLK Date Collected: Date Received:

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

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3048456 Date Prep: 04.30.18 13.00

Prep seq: 7643680

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00904	0.0200	0.00904	mg/kg	04.30.18 18:45	U	20
Toluene	108-88-3	<0.00468	0.0200	0.00468	mg/kg	04.30.18 18:45	U	20
Ethylbenzene	100-41-4	<0.00616	0.0200	0.00616	mg/kg	04.30.18 18:45	U	20
m_p-Xylenes	179601-23-1	<0.00682	0.0400	0.00682	mg/kg	04.30.18 18:45	U	20
o-Xylene	95-47-6	<0.00682	0.0200	0.00682	mg/kg	04.30.18 18:45	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	102	68 - 120	%		
a,a,a-Trifluorotoluene	103	71 - 121	%		

Certificate of Analytical Results
584083

TRC Solutions, Inc, Midland, TX
Boone 16 Tank Battery Seg.2

Sample Id:	**7643682-1-BLK**	Matrix:	Solid	Sample Depth:	
Lab Sample Id:	7643682-1-BLK	Date Collected:		Date Received:	
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3048459	Date Prep:	04.30.18 13.00		
		Prep seq:	7643682		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.271	4.00	0.271	mg/kg	04.30.18 18:45	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	94	76 - 123	%		
a,a,a-Trifluorotoluene	132	69 - 120	%		**

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: Boone 16 Tank Battery Seg.2

Work Orders : 584083,

Project ID:

Lab Batch #: 3048456 **Sample:** 7643680-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/18 16:01

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.104	0.100	104	68-120	
a,a,a-Trifluorotoluene	1.75	2.00	88	71-121	

Lab Batch #: 3048456 **Sample:** 7643680-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/18 16:28

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.103	0.100	103	68-120	
a,a,a-Trifluorotoluene	1.84	2.00	92	71-121	

Lab Batch #: 3048456 **Sample:** 7643680-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/18 18:45

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.102	0.100	102	68-120	
a,a,a-Trifluorotoluene	2.06	2.00	103	71-121	

Lab Batch #: 3048456 **Sample:** 584083-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/18 20:33

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.110	0.100	110	68-120	
a,a,a-Trifluorotoluene	1.84	1.85	99	71-121	

Lab Batch #: 3048456 **Sample:** 584083-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/18 21:01

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.109	0.100	109	68-120	
a,a,a-Trifluorotoluene	1.89	1.91	99	71-121	

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

Form 2 - Surrogate Recoveries

Project Name: Boone 16 Tank Battery Seg.2

Work Orders : 584083,

Project ID:

Lab Batch #: 3048434 **Sample:** 7643670-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/18 13:38

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	10.5	10.0	105	65-144	
n-Triacontane	9.27	10.0	93	46-152	

Lab Batch #: 3048434 **Sample:** 7643670-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/18 14:15

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.4	10.0	114	65-144	
n-Triacontane	10.3	10.0	103	46-152	

Lab Batch #: 3048434 **Sample:** 7643670-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/18 16:27

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	11.4	10.0	114	65-144	
n-Triacontane	10.3	10.0	103	46-152	

Lab Batch #: 3048434 **Sample:** 583811-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/18 17:43

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	12.0	9.99	120	65-144	
n-Triacontane	10.6	9.99	106	46-152	

Lab Batch #: 3048434 **Sample:** 583811-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/18 18:21

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	13.3	9.98	133	65-144	
n-Triacontane	11.7	9.98	117	46-152	

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

Form 2 - Surrogate Recoveries

Project Name: Boone 16 Tank Battery Seg.2

Work Orders : 584083,

Project ID:

Lab Batch #: 3048459 **Sample:** 7643682-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/18 16:56

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	0.0993	0.100	99	76-123	
a,a,a-Trifluorotoluene	2.10	2.00	105	69-120	

Lab Batch #: 3048459 **Sample:** 7643682-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/18 17:23

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	0.100	0.100	100	76-123	
a,a,a-Trifluorotoluene	1.62	2.00	81	69-120	

Lab Batch #: 3048459 **Sample:** 7643682-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/30/18 18:45

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0944	0.100	94	76-123	
a,a,a-Trifluorotoluene	2.63	2.00	132	69-120	**

Lab Batch #: 3048459 **Sample:** 584083-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/18 21:28

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.107	0.100	107	76-123	
a,a,a-Trifluorotoluene	1.64	1.92	85	69-120	

Lab Batch #: 3048459 **Sample:** 584083-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/30/18 21:55

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	0.108	0.100	108	76-123	
a,a,a-Trifluorotoluene	1.48	1.81	82	69-120	

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

BS / BSD Recoveries

Project Name: Boone 16 Tank Battery Seg.2

Work Order #: 584083 **Project ID:**

Analyst: MIT **Date Prepared:** 04/30/2018 **Date Analyzed:** 04/30/2018

Lab Batch ID: 3048456 **Sample:** 7643680-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00904	2.00	2.00	100	2.00	2.01	101	0	55-120	20	
Toluene	<0.00468	2.00	2.03	102	2.00	2.01	101	1	77-120	20	
Ethylbenzene	<0.00616	2.00	2.04	102	2.00	2.01	101	1	77-120	20	
m_p-Xylenes	<0.00682	4.00	4.09	102	4.00	4.04	101	1	78-120	20	
o-Xylene	<0.00682	2.00	2.07	104	2.00	2.04	102	1	78-120	20	

Analyst: PGM **Date Prepared:** 04/30/2018 **Date Analyzed:** 04/30/2018

Lab Batch ID: 3048434 **Sample:** 7643670-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Diesel Range Organics (DRO)	<7.48	100	93.1	93	100	94.1	94	1	63-139	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: Boone 16 Tank Battery Seg.2

Work Order #: 584083 **Project ID:**

Analyst: MIT **Date Prepared:** 04/30/2018 **Date Analyzed:** 04/30/2018

Lab Batch ID: 3048459 **Sample:** 7643682-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<0.271	20.0	20.4	102	20.0	20.7	104	1	35-129	20	

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

Form 3 - MS / MSD Recoveries

Project Name: Boone 16 Tank Battery Seg.2

Work Order # : 584083 **Project ID:**

Lab Batch ID: 3048456 **QC- Sample ID:** 584083-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/30/2018 **Date Prepared:** 04/30/2018 **Analyst:** MIT

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00837	1.85	1.76	95	1.91	1.80	94	2	54-120	25	
Toluene	<0.00433	1.85	1.84	99	1.91	1.86	97	1	57-120	25	
Ethylbenzene	<0.00570	1.85	1.91	103	1.91	1.94	102	2	58-131	25	
m_p-Xylenes	<0.00631	3.70	3.79	102	3.82	3.87	101	2	62-124	25	
o-Xylene	<0.00631	1.85	1.91	103	1.91	1.94	102	2	62-124	25	

Lab Batch ID: 3048434 **QC- Sample ID:** 583811-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/30/2018 **Date Prepared:** 04/30/2018 **Analyst:** PGM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Diesel Range Organics (DRO)	<7.47	99.9	75.8	76	99.8	85.6	86	12	63-139	20	

Lab Batch ID: 3048459 **QC- Sample ID:** 584083-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/30/2018 **Date Prepared:** 04/30/2018 **Analyst:** MIT

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<0.260	19.2	15.5	81	18.1	15.0	83	3	35-129	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.

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San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
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584083

Xenco Job # 584083

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 10 Dest Drive Suite 150E, 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: Boone 16 Tank Battery Seg. 2
Project Location: Eddy Co, NM
Invoice To: Plains Pipeline CO Amber Groves
Invoice:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	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	Field Comments
1	OS #7 @ 0-6"	6"	4/26/2018	1240	S	1									X		X	1
2	OS #2 @ 3-6"	6"	4/26/2018	1250	S	1									X			2
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

Notes:

jlowry@trcsolutions.com
algroves@paalp.com sreynolds@trcsolutions.com
zconder@trcsolution.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		4/27/18 10:30	1	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			5			3.5 2.5 +1.0

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.

Final 1.000

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 04/27/2018 03:37:00 PM

Work Order #: 584083

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brenda Ward Date: 04/27/2018
Brenda Ward

Checklist reviewed by: Kelsey Brooks Date: 05/02/2018
Kelsey Brooks

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-138
Revised August 1, 2011

*Surface Waste Management Facility Operator and Generator shall maintain and make this Documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. **Generator Name and Address:**
Plains Pipeline, LP
577 US Hwy 385N
Seminole, Texas 79360

2. **Originating Site:**
COG Boone 16 2H (Plains SRS #2018-060)

3. **Location of Material (Street Address, City, State or ULSTR):**
ULT "O", Section 16, Township 21 S, Range 33 East, Lea County, New Mexico

4. **Source and Description of Waste:**
Waste was generated due to a crude oil release.

Estimated Volume 114 yd³ / bbls Known Volume (to be entered by the operator at the end of the haul) 114 yd³ / bbls

5. **GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS**

I, Camille Bryant, representative or authorized agent for Plains Pipeline, LP do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. *Operator Use Only: Waste Acceptance Frequency* ☐ *Monthly* ☐ *Weekly* ☐ *Per Load*

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Camille Bryant, representative for Plains Marketing, LP do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. **Transporter:**
Manuel Mata Trucking, LLC

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Lazy Ace Landfarm, LLC Permit No NM-1-041

Address of Facility: PO Box 160, Eunice, NM 88231

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant X Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☐ **APPROVED** ☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: D.C. Berry TITLE: owner DATE: 4-28-18

SIGNATURE: D.C. Berry TELEPHONE NO.: 575 393-6964

Surface Waste Management Facility Authorized Agent

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 Plains Pipeline	Contact Amber Groves
Address 1911 Connie Rd, Carlsbad NM 88220	Telephone No. (575)200-5517
Facility Name COG Boone 16 2H to Segment 2	Facility Type Tank Battery

Surface Owner Merchant Livestock	Mineral Owner State	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	16	21S	33E					Lea

Latitude 32.4724 **Longitude** -103.5752 NAD83

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 7 bbls	Volume Recovered 4 bbls
Source of Release ½ inch Nipple	Date and Hour of Occurrence 4/5/2018 @ 4:04 PM	Date and Hour of Discovery 4/5/2018 @ 4:30 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Voicemail to Olivia Yu	
By Whom? Amber Groves	Date and Hour 4/6/2018 @ 9:16 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED
By Olivia Yu at 8:00 am, Apr 09, 2018

Describe Cause of Problem and Remedial Action Taken.*
½" nipple broke upstream of the ½" valve on the chemical injection point.

Describe Area Affected and Cleanup Action Taken.*
Impacted area includes the pad and overspray in the pasture. All areas will be remediated as per current NMOCD guidelines.

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

Signature: Amber Groves	OIL CONSERVATION DIVISION
Printed Name: Amber Groves	Approved by Environmental Specialist: JJ
Title: Remediation Coordinator	Approval Date: 4/9/2018 Expiration Date:
E-mail Address: algroves@paalp.com	Conditions of Approval: see attached directive Attached ☑
Date: 4/6/2018 Phone: 575-200-5517	

* Attach Additional Sheets If Necessary

1RP-5014 nOY1809929352
fOY1804335139 pOY1809929634

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _4/5/2018_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-5014__ 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 _5/9/2018_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

● Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_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