APPROVED
By Olivia Yu at 11:16 am, Jun 20, 2018

NMOCD grants closure to 1RP-4964.

REMEDIATION SUMMARY AND SITE CLOSURE REQUEST

Plains Pipeline, L.P.
Mewbourne Marathon 15 PA
LEA COUNTY, NEW MEXICO
UNIT LETTER "P", SECTION 15, TOWNSHIP 20 SOUTH, RANGE 34 EAST
GPS: N 32.56721° W 103.54050°
SRS #: 2018-031
NMOCD Reference: 1RP-4964

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

June 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 Mewbourne Marathon 15 PA (SRS# 2018-031). The Release Site is located approximately sixteen (16) miles southwest of Monument in Lea County, New Mexico, in Unit Letter "P", Section 15, Township 20 South, Range 34 East. The GPS coordinates for the site are N 32.56721º and W 103.54050º. The affected property is located on private land. A Site Location Map is provided as Figure 1.

On February 1, 2018, a release was discovered on the LACT Unit at Mewbourne Oil Company's Marathon 15 PA production facility. The release was attributed to a one-half (1/2) inch (in.) valve which appeared to be tampered with and forced open, resulting in the release of approximately thirty-five (35) barrels (bbls) of crude oil. A majority of the release was confined to within the earthen containment and portions of the release affected the adjacent caliche well pad. During initial response activities, approximately two (2) bbls of crude oil were recovered and saturated soils were excavated and stockpiled on-site atop a polyurethane liner. 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 depth to groundwater information is not available in Section 15, Township 20 South, Range 33 East. 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 fifty (150) feet below ground surface (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
- BTEX - 50 mg/kg
- TPH – 5,000 mg/kg
- Chloride – 600 mg/kg

3.0 SUMMARY OF FIELD ACTIVITIES

On February 23, 2018, remediation activities resumed at the Release Site. Impacted soil within the release margins remaining in-situ was excavated and stockpiled on-site, atop an impermeable liner, pending final disposition. The floor and sidewalls of the excavation were advanced until field observations suggested hydrocarbon impacts had been mitigated. Site photographs are provided in Appendix A.

On February 27, 2018, TRC collected seventeen (17) soil samples (LU FL 1, FL 2, FL 3, FL 4, NSW 1, NSW 2, NSW 3, ESW 1, ESW 2, ESW 3, ESW 4, WSW 1, WSW 2, WSW 3, SSW 1, SSW 2 and SSW 3) from the floor and sidewalls of the excavated area and submitted them to the laboratory for analysis of BTEX and TPH concentrations using EPA Methods SW-846 8021b and 8015 M Ext., respectively. Laboratory analytical results indicated benzene concentrations ranged from less than the applicable laboratory reporting limit (RL) in soil samples FL4, NSW1, NSW2, NSW3, ESW2, ESW3, ESW4, WSW2, WSW3 and SSW3 to 0.364 mg/kg in soil sample SSW1. Analytical results indicated BTEX concentrations ranged from less than the applicable laboratory RL in soil samples FL4, ESW2 and SSW3 to 70.564 mg/kg in soil sample SSW1. TPH concentrations ranged from less than the applicable laboratory RL in soil samples FL4 and WSW2 to 11,444 mg/kg in soil sample NSW1. Laboratory analytical results indicated benzene, BTEX and TPH concentrations were below the NMOCD Recommended Remediation Action Levels in each of the submitted soil samples with the exception of the TPH concentrations in soil samples LU FL 1 (7,203 mg/kg), FL3 (7,075 mg/kg), NSW1 (11,444 mg/kg), ESW1 (5,786.5 mg/kg), WSW1 (10,324 mg/kg) and SSW1 (9,528 mg/kg) and the BTEX concentration in soil sample SSW1 (70.564 mg/kg). The excavation was advanced in the areas characterized by soil samples LU FL 1, FL3, NSW1, ESW1, WSW1 and SSW1. 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. Soil sample locations are depicted on Figure 2 – Site & Sample Location Map.

On March 20 and 21, 2018, approximately one hundred (100) cubic yards (cy) of impacted soil was transported to Lazy Ace Landfarm, LLC (NMOCD Permit No. NM-01-0041) for disposal. Copies of non-hazardous waste manifests are provided in Appendix C.

On March 22, 2018, TRC collected six (6) excavation confirmation soil samples (FL-3b @ 4', LU FL-1b @ 2', NSW1b, ESW1b, SSW1b and WSW1b) from the floor and sidewalls of the excavated area and submitted them to the laboratory for analysis of TPH. Laboratory analytical results indicated TPH concentrations were less than the applicable laboratory RL in each of the submitted soil samples with the exception of soil sample LU FL-1b @ 2' (29.4 mg/kg) and SSW 1b (707.3 mg/kg). Soil samples FL-3b @ 4' and LU FL-1b @ 2' were also analyzed for concentration of chloride, which were determined to be 36.4 mg/kg and 52.2 mg/kg, respectively. Soil sample SSW1b was also analyzed for concentrations of BTEX, which were determined to be less than the applicable laboratory RL. Laboratory analytical results indicated BTEX, TPH and/or chloride concentrations were below the NMOCD Recommended Remediation Action Levels in each of the submitted soil samples.

In addition, two (2) confirmation soil samples (FL-3 @ 6' and LU FL-1 @ 4') were collected from deeper intervals beneath the confirmation floor samples in an effort to further characterize soil beneath the affected area. The collected soil samples were submitted to the laboratory for analysis of TPH concentration, which were determined to be less than the applicable laboratory RL.

On April 9th, 2018, TRC submitted a Remediation Workplan and Backfill Request to the NMOCD detailing remediation activities conducted to date, summarizing analytical results from confirmation soil samples, and requesting permission to backfill the excavated area. The request was subsequently approved.

Upon receiving NMOCD permission, the excavated areas were 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 one hundred eighty (180) ft. in length, fifty (50) ft. to one hundred thirty (130) ft. in width, and three (3) in. to four (4) ft. in depth.

4.0 SITE CLOSURE REQUEST

Based on laboratory analytical results and field activities conducted to date, TRC recommends Plains provide copies of this *Remediation Summary and Site Closure Request* to the NMOCD and request closure status be granted to the Mewbourne Marathon 15 PA 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

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

Copy 2: Amber Groves
Plains Marketing, L.P.
505 North Big Spring, Suite 600
Midland City, Texas 79701
cjbryant@paalp.com

Copy 3: TRC Environmental Corporation
10 Desta Drive, Suite 150E
Midland, Texas 79705
jlowry@trcsolutions.com

Figure 1

Site Location Map

Plains Pipeline, LP

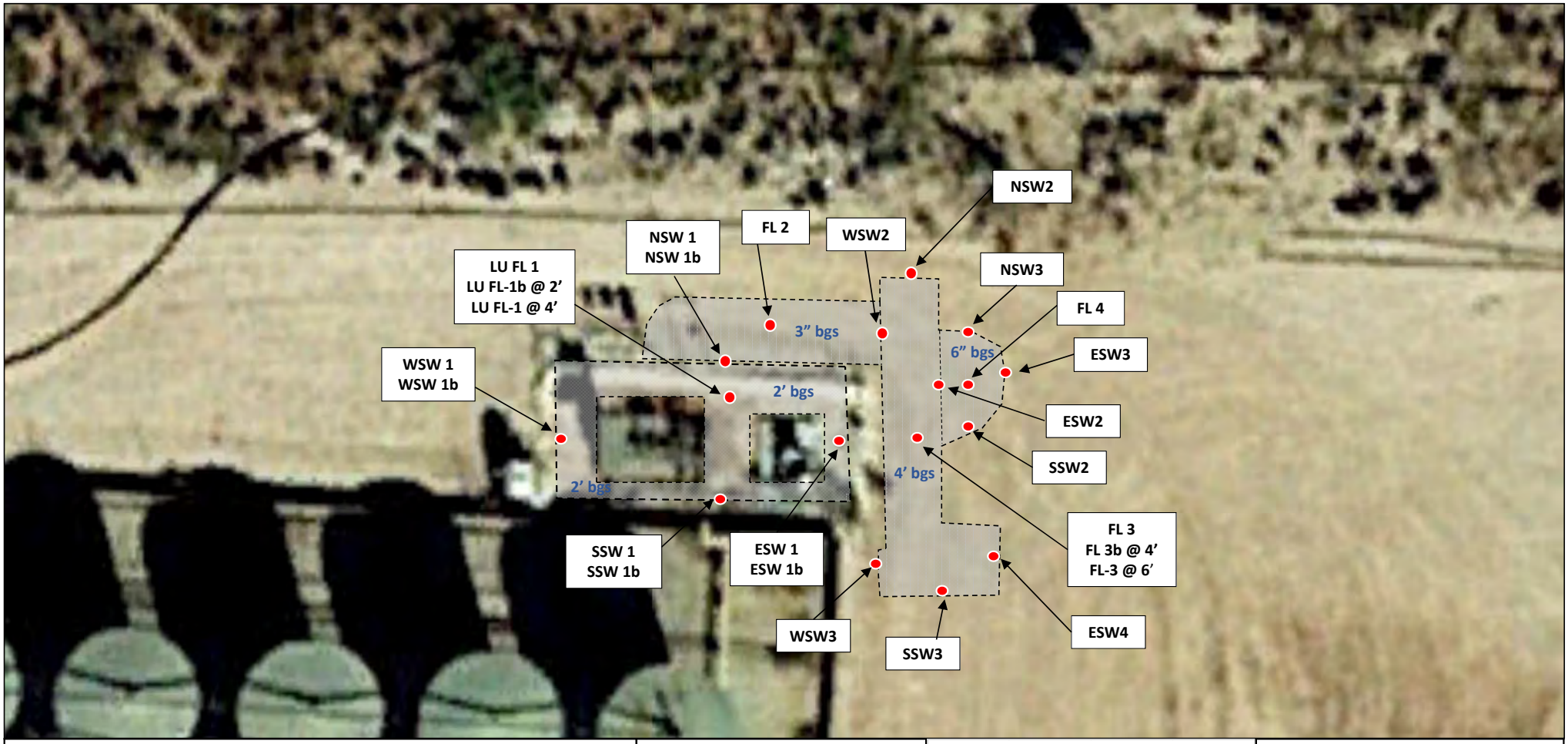
Marathon 15 PA

Lea County, New Mexico

Scale 1" = ~6,000'	
Drafted by: ZC	Checked by: JL
Draft: April 5, 2018	
Lat. N 32.56721 Long. W 103.54050	
UL "P", Sec. 15, T20S, R34E	
TRC Proj. No.: 296710	

TRC
Results you can rely on

2057 Commerce Drive
Midland, Texas 79703
432.520.7720



LEGEND:

- Confirmation Sample Location
- Excavated Area

Figure 2
Site & Sample Location Map
Plains Pipeline, LP
Marathon 15 PA
Lea County, New Mexico

Scale 1" = ~60'	
Drafted by: ZC	Checked by: JL
Draft: April 5 2018	
Lat. N 32.56721 Long. W 103.54050	
UL "P", Sec. 15, T20S, R34E	
TRC Proj. No.: 296710	

TRC
Results you can rely on
2057 Commerce Drive
Midland, Texas 79703
432.520.7720

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH, AND CHLORIDE IN SOIL
Marathon 15 PA
PLAINS PIPELINE, L.P.
LEA COUNTY, NM
NMOCD REF. No. 1RP-4964

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH	STATUS	Methods: EPA SW 846-8021B, 5030					Methods:				Method:
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	XYLENES, TOTAL (mg/Kg)	TOTAL BTEX (mg/Kg)	EPA SW 846-8015M				E300
									GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	TOTAL TPH (mg/Kg)	CHLORIDE (mg/Kg)
FL 2	2/27/2018	6"	In-Situ	0.052	0.369	0.0592	0.19	0.6776	82.9	1,590	99.4	1,772.30	-
FL 3	2/27/2018	3'	In-Situ	0.000468	0.0257	0.0666	0.3058	0.398568	373	6,230	472	**7,075**	-
FL 4	2/27/2018	6"	In-Situ	<0.000383	<0.000454	<0.000563	<0.000343	<0.000343	<7.99	<8.11	<8.11	<7.99	-
NSW1	2/27/2018	6"	In-Situ	<0.000386	0.0623	0.0766	0.293	0.4319	395	10,600	449	**11,444**	-
NSW2	2/27/2018	1.5'	In-Situ	<0.000386	0.00151	<0.000567	0.00573	0.00724	<7.97	13.8	<8.10	13.8	-
NSW3	2/27/2018	3"	In-Situ	<0.000383	0.00309	<0.000563	0.0038	0.00689	<7.99	11.7	<8.12	11.7	-
ESW1	2/27/2018	6"	In-Situ	0.0601	4.40	5.58	19.56	29.6001	1,090	4,630	66.5	**5,786.5**	-
ESW2	2/27/2018	1.5'	In-Situ	<0.000639	<0.000757	<0.000938	<0.000572	<0.000572	<7.98	90.0	<8.10	90.0	-
ESW3	2/27/2018	3"	In-Situ	<0.000388	0.00159	0.0034	0.02132	0.02631	15.5	245	13.0	273.5	-
ESW4	2/27/2018	1.5'	In-Situ	<0.000383	0.00549	0.0182	0.2633	0.28699	20.4	422	14.1	456.5	-
WSW1	2/27/2018	6"	In-Situ	0.109	5.3500	6.18	23.85	35.489	1780	8,200	344	**10,324**	-
WSW2	2/27/2018	1.5	In-Situ	<0.000384	0.0029	0.00402	0.0305	0.03745	<7.99	<8.11	<8.11	<7.99	-
WSW3	2/27/2018	1.5	In-Situ	<0.000384	0.0023	0.000589	0.00189	0.004739	<7.98	257	11.6	268.6	-
SSW1	2/27/2018	6"	In-Situ	0.364	12.4	13.1	44.7	**70.564**	1,660	7,590	278	**9,528**	-
SSW2	2/27/2018	3"	In-Situ	0.000625	0.1300	0.114	0.494	0.738625	185	1,900	46.7	2,131.7	-
SSW3	2/27/2018	6"	In-Situ	<0.000383	<0.000453	<0.000561	<0.000342	<0.000342	8.33	<8.13	<8.13	8.33	-
LU FL 1	2/27/2018	8"	In-Situ	0.145	3.36	3.01	10.87	17.385	649	6,150	404	**7,203**	-
FL-3b @ 4'	3/22/2018	4'	In-Situ	-	-	-	-	-	<3.87	<25.0	<25.0	<25.0	36.4
LU FL-1b @ 2'	3/22/2018	2'	In-Situ	-	-	-	-	-	<3.90	29.4	<25.0	29.4	52.2
NSW 1b	3/22/2018	1'	In-Situ	-	-	-	-	-	<3.82	<25.0	<25.0	<25.0	-
ESW 1b	3/22/2018	1'	In-Situ	-	-	-	-	-	<3.94	<25.2	<25.2	<25.2	-
SSW 1b	3/22/2018	1'	In-Situ	<0.000383	<0.000454	<0.000563	<0.000343	<0.000343	7.30	631	69.0	707.3	-
WSW 1b	3/22/2018	1'	In-Situ	-	-	-	-	-	<7.99	<25.3	<25.3	<25.3	-
FL-3 @ 6'	3/22/2018	6'	In-Situ	-	-	-	-	-	<3.57	<25.0	<25.0	<25.0	-
LU FL-1 @ 4'	3/22/2018	4'	In-Situ	-	-	-	-	-	<3.97	<24.9	<24.9	<24.9	-
NMOCD Regulatory Guideline				**10**	**-**	**-**	**-**	**50**	**-**	**-**	**-**	**5,000**	**600**

Figure 1 - View of surface staining from the initial release, facing Southwest.

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

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

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

Figure 5 - View of affected area after remediation activities, facing Southeast.

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

Analytical Report 578048

for

TRC Solutions, Inc

Project Manager: Joel Lowry

Mewbourne Marathon 15 PA

12-MAR-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)

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12-MAR-18

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

Reference: XENCO Report No(s): **578048**
Mewbourne Marathon 15 PA
Project Address: Lea County NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 578048. 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. 578048 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 578048

TRC Solutions, Inc, Midland, TX

Mewbourne Marathon 15 PA

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL 2	S	02-27-18 09:00	6 In	578048-001
FL 3	S	02-27-18 09:05	3 In	578048-002
FL 4	S	02-27-18 09:10	6 In	578048-003
NSW 1	S	02-27-18 09:15	6 In	578048-004
NSW 2	S	02-27-18 09:20	1.5 ft	578048-005
NSW 3	S	02-27-18 09:25	3 In	578048-006
ESW 1	S	02-27-18 09:30	6 In	578048-007
ESW 2	S	02-27-18 09:35	1.5 ft	578048-008
ESW 3	S	02-27-18 09:40	3 In	578048-009
ESW 4	S	02-27-18 09:45	1.5 ft	578048-010
WSW 1	S	02-27-18 09:50	6 In	578048-011
WSW 2	S	02-27-18 09:55	1.5 ft	578048-012
WSW 3	S	02-27-18 10:00	1.5 ft	578048-013
SSW 1	S	02-27-18 10:05	6 In	578048-014
SSW 2	S	02-27-18 10:15	3 In	578048-015
SSW 3	S	02-27-18 10:20	1.5 ft	578048-016

CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: Mewbourne Marathon 15 PA

Project ID:
Work Order Number(s): *578048*

Report Date: *12-MAR-18*
Date Received: *03/02/2018*

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-3043008 BTEX by EPA 8021
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3043201 BTEX by EPA 8021
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3043349 BTEX by EPA 8021
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 578048-010.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3043351 BTEX by EPA 8021
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results
578048

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **FL 2** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 578048-001 Date Collected: 02.27.18 09.00 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**82.9**	15.0	7.98	mg/kg	03.08.18 16:52		1
Diesel Range Organics (DRO)	C10C28DRO	**1590**	15.0	8.10	mg/kg	03.08.18 16:52		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**99.4**	15.0	8.10	mg/kg	03.08.18 16:52		1
Total TPH	PHC635	**1772.3**		7.98	mg/kg	03.08.18 16:52		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	104	70 - 135	%		
o-Terphenyl	122	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043008 Date Prep: 03.06.18 17.00

Prep seq: 7640330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.0520**	0.00201	0.000386	mg/kg	03.07.18 15:34		1
Toluene	108-88-3	**0.369**	0.00201	0.000457	mg/kg	03.07.18 15:34		1
Ethylbenzene	100-41-4	**0.0592**	0.00201	0.000567	mg/kg	03.07.18 15:34		1
m_p-Xylenes	179601-23-1	**0.142**	0.00402	0.00102	mg/kg	03.07.18 15:34		1
o-Xylene	95-47-6	**0.0554**	0.00201	0.000346	mg/kg	03.07.18 15:34		1
Xylenes, Total	1330-20-7	**0.1974**		0.000346	mg/kg	03.07.18 15:34		
Total BTEX		**0.6776**		0.000346	mg/kg	03.07.18 15:34		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	90	70 - 130	%		
4-Bromofluorobenzene	125	70 - 130	%		

Certificate of Analytical Results
578048

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **FL 3** Matrix: Soil Sample Depth: 3 In

Lab Sample Id: 578048-002 Date Collected: 02.27.18 09.05 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**373**	74.8	39.9	mg/kg	03.08.18 17:18		5
Diesel Range Organics (DRO)	C10C28DRO	**6230**	74.8	40.5	mg/kg	03.08.18 17:18		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**472**	74.8	40.5	mg/kg	03.08.18 17:18		5
Total TPH	PHC635	**7075**		39.9	mg/kg	03.08.18 17:18		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	118	70 - 135	%		
o-Terphenyl	111	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043008 Date Prep: 03.06.18 17.00

Prep seq: 7640330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.000468**	0.00199	0.000383	mg/kg	03.07.18 16:13	J	1
Toluene	108-88-3	**0.0257**	0.00199	0.000454	mg/kg	03.07.18 16:13		1
Ethylbenzene	100-41-4	**0.0666**	0.00199	0.000563	mg/kg	03.07.18 16:13		1
m_p-Xylenes	179601-23-1	**0.209**	0.00398	0.00101	mg/kg	03.07.18 16:13		1
o-Xylene	95-47-6	**0.0968**	0.00199	0.000343	mg/kg	03.07.18 16:13		1
Xylenes, Total	1330-20-7	**0.3058**		0.000343	mg/kg	03.07.18 16:13		
Total BTEX		**0.398568**		0.000343	mg/kg	03.07.18 16:13		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	72	70 - 130	%		
4-Bromofluorobenzene	129	70 - 130	%		

Certificate of Analytical Results
578048

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **FL 4** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 578048-003 Date Collected: 02.27.18 09.10 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	03.08.18 17:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.11	15.0	8.11	mg/kg	03.08.18 17:45	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.11	15.0	8.11	mg/kg	03.08.18 17:45	U	1
Total TPH	PHC635	<7.99		7.99	mg/kg	03.08.18 17:45	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	103	70 - 135	%		
o-Terphenyl	96	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043201 Date Prep: 03.08.18 16.45

Prep seq: 7640464

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	03.12.18 09:20	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	03.12.18 09:20	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	03.12.18 09:20	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	03.12.18 09:20	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	03.12.18 09:20	U	1
Xylenes, Total	1330-20-7	<0.000343		0.000343	mg/kg	03.12.18 09:20	U	
Total BTEX		<0.000343		0.000343	mg/kg	03.12.18 09:20	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	83	70 - 130	%		
4-Bromofluorobenzene	113	70 - 130	%		

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TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **NSW 1** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 578048-004 Date Collected: 02.27.18 09.15 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**395**	74.7	39.9	mg/kg	03.08.18 19:02		5
Diesel Range Organics (DRO)	C10C28DRO	**10600**	74.7	40.5	mg/kg	03.08.18 19:02		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**449**	74.7	40.5	mg/kg	03.08.18 19:02		5
Total TPH	PHC635	**11444**		39.9	mg/kg	03.08.18 19:02		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	126	70 - 135	%		
o-Terphenyl	105	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043008 Date Prep: 03.06.18 17.00

Prep seq: 7640330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	03.07.18 15:53	U	1
Toluene	108-88-3	**0.0623**	0.00201	0.000457	mg/kg	03.07.18 15:53		1
Ethylbenzene	100-41-4	**0.0766**	0.00201	0.000567	mg/kg	03.07.18 15:53		1
m_p-Xylenes	179601-23-1	**0.189**	0.00402	0.00102	mg/kg	03.07.18 15:53		1
o-Xylene	95-47-6	**0.104**	0.00201	0.000346	mg/kg	03.07.18 15:53		1
Xylenes, Total	1330-20-7	**0.293**		0.000346	mg/kg	03.07.18 15:53		
Total BTEX		**0.4319**		0.000346	mg/kg	03.07.18 15:53		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	87	70 - 130	%		

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TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **NSW 2** Matrix: Soil Sample Depth: 1.5 ft

Lab Sample Id: 578048-005 Date Collected: 02.27.18 09.20 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.97	14.9	7.97	mg/kg	03.08.18 19:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	**13.8**	14.9	8.10	mg/kg	03.08.18 19:29	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.10	14.9	8.10	mg/kg	03.08.18 19:29	U	1
Total TPH	PHC635	**13.8**		7.97	mg/kg	03.08.18 19:29	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	103	70 - 135	%		
o-Terphenyl	97	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043201 Date Prep: 03.08.18 16.45

Prep seq: 7640464

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	03.09.18 10:55	U	1
Toluene	108-88-3	**0.00151**	0.00201	0.000457	mg/kg	03.09.18 10:55	J	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	03.09.18 10:55	U	1
m_p-Xylenes	179601-23-1	**0.00333**	0.00402	0.00102	mg/kg	03.09.18 10:55	J	1
o-Xylene	95-47-6	**0.00240**	0.00201	0.000346	mg/kg	03.09.18 10:55		1
Xylenes, Total	1330-20-7	**0.00573**		0.000346	mg/kg	03.09.18 10:55		
Total BTEX		**0.00724**		0.000346	mg/kg	03.09.18 10:55		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	75	70 - 130	%		
4-Bromofluorobenzene	109	70 - 130	%		

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TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **NSW 3** Matrix: Soil Sample Depth: 3 In

Lab Sample Id: 578048-006 Date Collected: 02.27.18 09.25 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	03.08.18 19:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	**11.7**	15.0	8.12	mg/kg	03.08.18 19:54	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.12	15.0	8.12	mg/kg	03.08.18 19:54	U	1
Total TPH	PHC635	**11.7**		7.99	mg/kg	03.08.18 19:54	J	

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

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043201 Date Prep: 03.08.18 16.45

Prep seq: 7640464

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	03.09.18 10:55	U	1
Toluene	108-88-3	**0.00309**	0.00199	0.000454	mg/kg	03.09.18 10:55		1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	03.09.18 10:55	U	1
m_p-Xylenes	179601-23-1	**0.00249**	0.00398	0.00101	mg/kg	03.09.18 10:55	J	1
o-Xylene	95-47-6	**0.00131**	0.00199	0.000343	mg/kg	03.09.18 10:55	J	1
Xylenes, Total	1330-20-7	**0.0038**		0.000343	mg/kg	03.09.18 10:55		
Total BTEX		**0.00689**		0.000343	mg/kg	03.09.18 10:55		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	89	70 - 130	%		
4-Bromofluorobenzene	126	70 - 130	%		

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TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **ESW 1** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 578048-007 Date Collected: 02.27.18 09.30 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**1090**	15.0	7.99	mg/kg	03.08.18 20:20		1
Diesel Range Organics (DRO)	C10C28DRO	**4630**	15.0	8.11	mg/kg	03.08.18 20:20		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**66.5**	15.0	8.11	mg/kg	03.08.18 20:20		1
Total TPH	PHC635	**5786.5**		7.99	mg/kg	03.08.18 20:20		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	126	70 - 135	%		
o-Terphenyl	76	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043349 Date Prep: 03.09.18 12.00

Prep seq: 7640517

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.0601**	0.0994	0.0191	mg/kg	03.09.18 19:55	J	50
Toluene	108-88-3	**4.40**	0.0994	0.0226	mg/kg	03.09.18 19:55		50
Ethylbenzene	100-41-4	**5.58**	0.0994	0.0281	mg/kg	03.09.18 19:55		50
m_p-Xylenes	179601-23-1	**14.1**	0.199	0.0504	mg/kg	03.09.18 19:55		50
o-Xylene	95-47-6	**5.46**	0.0994	0.0171	mg/kg	03.09.18 19:55		50
Xylenes, Total	1330-20-7	**19.56**		0.0171	mg/kg	03.09.18 19:55		
Total BTEX		**29.6001**		0.0171	mg/kg	03.09.18 19:55		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	83	70 - 130	%		
4-Bromofluorobenzene	105	70 - 130	%		

Certificate of Analytical Results
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TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **ESW 2** Matrix: Soil Sample Depth: 1.5 ft

Lab Sample Id: 578048-008 Date Collected: 02.27.18 09.35 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.98	15.0	7.98	mg/kg	03.08.18 20:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	**90.0**	15.0	8.10	mg/kg	03.08.18 20:46		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.10	15.0	8.10	mg/kg	03.08.18 20:46	U	1
Total TPH	PHC635	**90**		7.98	mg/kg	03.08.18 20:46		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	111	70 - 135	%		
o-Terphenyl	114	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043349 Date Prep: 03.09.18 12.00

Prep seq: 7640517

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000639	0.00332	0.000639	mg/kg	03.09.18 19:36	U	2
Toluene	108-88-3	<0.000757	0.00332	0.000757	mg/kg	03.09.18 19:36	U	2
Ethylbenzene	100-41-4	<0.000938	0.00332	0.000938	mg/kg	03.09.18 19:36	U	2
m_p-Xylenes	179601-23-1	<0.00168	0.00664	0.00168	mg/kg	03.09.18 19:36	U	2
o-Xylene	95-47-6	<0.000572	0.00332	0.000572	mg/kg	03.09.18 19:36	U	2
Xylenes, Total	1330-20-7	<0.000572		0.000572	mg/kg	03.09.18 19:36	U	
Total BTEX		<0.000572		0.000572	mg/kg	03.09.18 19:36	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	86	70 - 130	%		
4-Bromofluorobenzene	98	70 - 130	%		

Certificate of Analytical Results
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TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **ESW 3** Matrix: Soil Sample Depth: 3 In

Lab Sample Id: 578048-009 Date Collected: 02.27.18 09.40 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**15.5**	15.0	7.99	mg/kg	03.08.18 21:12		1
Diesel Range Organics (DRO)	C10C28DRO	**245**	15.0	8.12	mg/kg	03.08.18 21:12		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**13.0**	15.0	8.12	mg/kg	03.08.18 21:12	J	1
Total TPH	PHC635	**273.5**		7.99	mg/kg	03.08.18 21:12		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	97	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043349 Date Prep: 03.09.18 12.00

Prep seq: 7640517

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	03.09.18 13:32	U	1
Toluene	108-88-3	**0.00159**	0.00202	0.000459	mg/kg	03.09.18 13:32	J	1
Ethylbenzene	100-41-4	**0.00340**	0.00202	0.000569	mg/kg	03.09.18 13:32		1
m_p-Xylenes	179601-23-1	**0.0140**	0.00403	0.00102	mg/kg	03.09.18 13:32		1
o-Xylene	95-47-6	**0.00732**	0.00202	0.000347	mg/kg	03.09.18 13:32		1
Xylenes, Total	1330-20-7	**0.02132**		0.000347	mg/kg	03.09.18 13:32		
Total BTEX		**0.02631**		0.000347	mg/kg	03.09.18 13:32		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	79	70 - 130	%		
4-Bromofluorobenzene	109	70 - 130	%		

Certificate of Analytical Results
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TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **ESW 4** Matrix: Soil Sample Depth: 1.5 ft

Lab Sample Id: 578048-010 Date Collected: 02.27.18 09.45 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**20.4**	15.0	7.99	mg/kg	03.08.18 21:37		1
Diesel Range Organics (DRO)	C10C28DRO	**422**	15.0	8.12	mg/kg	03.08.18 21:37		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**14.1**	15.0	8.12	mg/kg	03.08.18 21:37	J	1
Total TPH	PHC635	**456.5**		7.99	mg/kg	03.08.18 21:37		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	98	70 - 135	%		
o-Terphenyl	95	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043349 Date Prep: 03.09.18 12.00

Prep seq: 7640517

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	03.09.18 14:30	U	1
Toluene	108-88-3	**0.00549**	0.00199	0.000454	mg/kg	03.09.18 14:30		1
Ethylbenzene	100-41-4	**0.0182**	0.00199	0.000563	mg/kg	03.09.18 14:30		1
m_p-Xylenes	179601-23-1	**0.182**	0.00398	0.00101	mg/kg	03.09.18 14:30		1
o-Xylene	95-47-6	**0.0813**	0.00199	0.000343	mg/kg	03.09.18 14:30		1
Xylenes, Total	1330-20-7	**0.2633**		0.000343	mg/kg	03.09.18 14:30		
Total BTEX		**0.28699**		0.000343	mg/kg	03.09.18 14:30		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	73	70 - 130	%		
4-Bromofluorobenzene	133	70 - 130	%		**

Certificate of Analytical Results
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TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **WSW 1** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 578048-011 Date Collected: 02.27.18 09.50 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**1780**	74.7	39.9	mg/kg	03.08.18 22:56		5
Diesel Range Organics (DRO)	C10C28DRO	**8200**	74.7	40.5	mg/kg	03.08.18 22:56		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**344**	74.7	40.5	mg/kg	03.08.18 22:56		5
Total TPH	PHC635	**10324**		39.9	mg/kg	03.08.18 22:56		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	119	70 - 135	%		
o-Terphenyl	126	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043351 Date Prep: 03.09.18 16.45

Prep seq: 7640522

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.109**	0.0998	0.0192	mg/kg	03.10.18 08:23		50
Toluene	108-88-3	**5.35**	0.0998	0.0227	mg/kg	03.10.18 08:23		50
Ethylbenzene	100-41-4	**6.18**	0.0998	0.0282	mg/kg	03.10.18 08:23		50
m_p-Xylenes	179601-23-1	**17.1**	0.200	0.0506	mg/kg	03.10.18 08:23		50
o-Xylene	95-47-6	**6.75**	0.0998	0.0172	mg/kg	03.10.18 08:23		50
Xylenes, Total	1330-20-7	**23.85**		0.0172	mg/kg	03.10.18 08:23		
Total BTEX		**35.489**		0.0172	mg/kg	03.10.18 08:23		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	86	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		

Certificate of Analytical Results
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TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **WSW 2** Matrix: Soil Sample Depth: 1.5 ft

Lab Sample Id: 578048-012 Date Collected: 02.27.18 09.55 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	03.08.18 23:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.11	15.0	8.11	mg/kg	03.08.18 23:21	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.11	15.0	8.11	mg/kg	03.08.18 23:21	U	1
Total TPH	PHC635	<7.99		7.99	mg/kg	03.08.18 23:21	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	101	70 - 135	%		
o-Terphenyl	95	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043349 Date Prep: 03.09.18 12.00

Prep seq: 7640517

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	03.09.18 15:09	U	1
Toluene	108-88-3	**0.00293**	0.00200	0.000455	mg/kg	03.09.18 15:09		1
Ethylbenzene	100-41-4	**0.00402**	0.00200	0.000564	mg/kg	03.09.18 15:09		1
m_p-Xylenes	179601-23-1	**0.0199**	0.00399	0.00101	mg/kg	03.09.18 15:09		1
o-Xylene	95-47-6	**0.0106**	0.00200	0.000344	mg/kg	03.09.18 15:09		1
Xylenes, Total	1330-20-7	**0.0305**		0.000344	mg/kg	03.09.18 15:09		
Total BTEX		**0.03745**		0.000344	mg/kg	03.09.18 15:09		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	73	70 - 130	%		
4-Bromofluorobenzene	124	70 - 130	%		

Certificate of Analytical Results
578048

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **WSW 3** Matrix: Soil Sample Depth: 1.5 ft

Lab Sample Id: 578048-013 Date Collected: 02.27.18 10.00 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.98	15.0	7.98	mg/kg	03.08.18 23:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	**257**	15.0	8.10	mg/kg	03.08.18 23:48		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**11.6**	15.0	8.10	mg/kg	03.08.18 23:48	J	1
Total TPH	PHC635	**268.6**		7.98	mg/kg	03.08.18 23:48		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	102	70 - 135	%		
o-Terphenyl	100	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043201 Date Prep: 03.08.18 16.45

Prep seq: 7640464

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	03.09.18 10:55	U	1
Toluene	108-88-3	**0.00226**	0.00200	0.000455	mg/kg	03.09.18 10:55		1
Ethylbenzene	100-41-4	**0.000589**	0.00200	0.000564	mg/kg	03.09.18 10:55	J	1
m_p-Xylenes	179601-23-1	**0.00189**	0.00399	0.00101	mg/kg	03.09.18 10:55	J	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	03.09.18 10:55	U	1
Xylenes, Total	1330-20-7	**0.00189**		0.000344	mg/kg	03.09.18 10:55	J	
Total BTEX		**0.004739**		0.000344	mg/kg	03.09.18 10:55		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	81	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		

Certificate of Analytical Results
578048

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **SSW 1** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 578048-014 Date Collected: 02.27.18 10.05 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**1660**	74.8	39.9	mg/kg	03.09.18 00:14		5
Diesel Range Organics (DRO)	C10C28DRO	**7590**	74.8	40.5	mg/kg	03.09.18 00:14		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**278**	74.8	40.5	mg/kg	03.09.18 00:14		5
Total TPH	PHC635	**9528**		39.9	mg/kg	03.09.18 00:14		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	126	70 - 135	%		
o-Terphenyl	119	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043349 Date Prep: 03.09.18 12.00

Prep seq: 7640517

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.364**	0.199	0.0383	mg/kg	03.09.18 20:14		100
Toluene	108-88-3	**12.4**	0.199	0.0454	mg/kg	03.09.18 20:14		100
Ethylbenzene	100-41-4	**13.1**	0.199	0.0563	mg/kg	03.09.18 20:14		100
m_p-Xylenes	179601-23-1	**31.8**	0.398	0.101	mg/kg	03.09.18 20:14		100
o-Xylene	95-47-6	**12.9**	0.199	0.0343	mg/kg	03.09.18 20:14		100
Xylenes, Total	1330-20-7	**44.7**		0.0343	mg/kg	03.09.18 20:14		
Total BTEX		**70.564**		0.0343	mg/kg	03.09.18 20:14		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	83	70 - 130	%		
4-Bromofluorobenzene	114	70 - 130	%		

Certificate of Analytical Results
578048

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **SSW 2** Matrix: Soil Sample Depth: 3 In

Lab Sample Id: 578048-015 Date Collected: 02.27.18 10.15 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**185**	15.0	7.99	mg/kg	03.09.18 00:39		1
Diesel Range Organics (DRO)	C10C28DRO	**1900**	15.0	8.11	mg/kg	03.09.18 00:39		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**46.7**	15.0	8.11	mg/kg	03.09.18 00:39		1
Total TPH	PHC635	**2131.7**		7.99	mg/kg	03.09.18 00:39		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	106	70 - 135	%		
o-Terphenyl	128	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043201 Date Prep: 03.08.18 16.45

Prep seq: 7640464

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.000625**	0.00198	0.000382	mg/kg	03.09.18 10:55	J	1
Toluene	108-88-3	**0.130**	0.00198	0.000452	mg/kg	03.09.18 10:55		1
Ethylbenzene	100-41-4	**0.114**	0.00198	0.000560	mg/kg	03.09.18 10:55		1
m_p-Xylenes	179601-23-1	**0.323**	0.00397	0.00101	mg/kg	03.09.18 10:55		1
o-Xylene	95-47-6	**0.171**	0.00198	0.000342	mg/kg	03.09.18 10:55		1
Xylenes, Total	1330-20-7	**0.494**		0.000342	mg/kg	03.09.18 10:55		
Total BTEX		**0.738625**		0.000342	mg/kg	03.09.18 10:55		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	70	70 - 130	%		
4-Bromofluorobenzene	129	70 - 130	%		

Certificate of Analytical Results
578048

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **SSW 3** Matrix: Soil Sample Depth: 1.5 ft

Lab Sample Id: 578048-016 Date Collected: 02.27.18 10.20 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**8.33**	15.0	8.00	mg/kg	03.09.18 01:06	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	03.09.18 01:06	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	03.09.18 01:06	U	1
Total TPH	PHC635	**8.33**		8	mg/kg	03.09.18 01:06	J	

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

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043008 Date Prep: 03.06.18 17.00

Prep seq: 7640330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	03.07.18 09:27	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	03.07.18 09:27	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	03.07.18 09:27	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	03.07.18 09:27	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	03.07.18 09:27	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	03.07.18 09:27	U	
Total BTEX		<0.000342		0.000342	mg/kg	03.07.18 09:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	84	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		

Certificate of Analytical Results
578048

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **7640330-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7640330-1-BLK Date Collected: Date Received:

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043008 Date Prep: 03.06.18 17.00

Prep seq: 7640330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	03.07.18 09:08	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	03.07.18 09:08	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	03.07.18 09:08	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	03.07.18 09:08	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	03.07.18 09:08	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	82	70 - 130	%		
4-Bromofluorobenzene	96	70 - 130	%		

Sample Id: **7640464-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7640464-1-BLK Date Collected: Date Received:

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043201 Date Prep: 03.08.18 16.45

Prep seq: 7640464

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	03.09.18 10:55	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	03.09.18 10:55	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	03.09.18 10:55	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	03.09.18 10:55	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	03.09.18 10:55	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	85	70 - 130	%		
4-Bromofluorobenzene	118	70 - 130	%		

Certificate of Analytical Results
578048

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **7640491-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7640491-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043255 Date Prep: 03.09.18 14.08

Prep seq: 7640491

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	03.08.18 15:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	03.08.18 15:33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	03.08.18 15:33	U	1
Total TPH	PHC635	<8		8	mg/kg	03.08.18 15:33	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	97	70 - 135	%		
o-Terphenyl	99	70 - 135	%		

Sample Id: **7640517-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7640517-1-BLK Date Collected: Date Received:

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043349 Date Prep: 03.09.18 12.00

Prep seq: 7640517

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	03.09.18 13:13	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	03.09.18 13:13	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	03.09.18 13:13	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	03.09.18 13:13	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	03.09.18 13:13	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	77	70 - 130	%		
4-Bromofluorobenzene	106	70 - 130	%		

Certificate of Analytical Results
578048

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **7640522-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7640522-1-BLK Date Collected: Date Received:

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043351 Date Prep: 03.09.18 16.45

Prep seq: 7640522

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	03.10.18 02:38	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	03.10.18 02:38	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	03.10.18 02:38	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	03.10.18 02:38	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	03.10.18 02:38	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	83	70 - 130	%		
4-Bromofluorobenzene	99	70 - 130	%		

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Orders : 578048,

Project ID:

Lab Batch #: 3043008 **Sample:** 7640330-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/07/18 07:32

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	70-130	
4-Bromofluorobenzene	0.0323	0.0300	108	70-130	

Lab Batch #: 3043008 **Sample:** 7640330-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/07/18 07:51

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0246	0.0300	82	70-130	
4-Bromofluorobenzene	0.0326	0.0300	109	70-130	

Lab Batch #: 3043008 **Sample:** 578048-016 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/07/18 08:10

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	70-130	
4-Bromofluorobenzene	0.0344	0.0300	115	70-130	

Lab Batch #: 3043008 **Sample:** 578048-016 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/07/18 08:29

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	70-130	
4-Bromofluorobenzene	0.0369	0.0300	123	70-130	

Lab Batch #: 3043008 **Sample:** 7640330-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/07/18 09:08

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	70-130	
4-Bromofluorobenzene	0.0289	0.0300	96	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Orders : 578048,

Project ID:

Lab Batch #: 3043201 **Sample:** 578604-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/09/18 10:55

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0235	0.0300	78	70-130	
4-Bromofluorobenzene	0.0372	0.0300	124	70-130	

Lab Batch #: 3043201 **Sample:** 578604-005 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/09/18 10:55

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0210	0.0300	70	70-130	
4-Bromofluorobenzene	0.0372	0.0300	124	70-130	

Lab Batch #: 3043201 **Sample:** 7640464-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/09/18 10:55

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0390	0.0300	130	70-130	

Lab Batch #: 3043201 **Sample:** 7640464-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/09/18 10:55

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	70-130	
4-Bromofluorobenzene	0.0354	0.0300	118	70-130	

Lab Batch #: 3043201 **Sample:** 7640464-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/09/18 10:55

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	70-130	
4-Bromofluorobenzene	0.0365	0.0300	122	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Orders : 578048,

Project ID:

Lab Batch #: 3043349 **Sample:** 7640517-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/09/18 11:36

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0237	0.0300	79	70-130	
4-Bromofluorobenzene	0.0363	0.0300	121	70-130	

Lab Batch #: 3043349 **Sample:** 7640517-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/09/18 11:55

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0247	0.0300	82	70-130	
4-Bromofluorobenzene	0.0360	0.0300	120	70-130	

Lab Batch #: 3043349 **Sample:** 578048-009 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/09/18 12:15

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0236	0.0300	79	70-130	
4-Bromofluorobenzene	0.0333	0.0300	111	70-130	

Lab Batch #: 3043349 **Sample:** 578048-009 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/09/18 12:34

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	70-130	
4-Bromofluorobenzene	0.0387	0.0300	129	70-130	

Lab Batch #: 3043349 **Sample:** 7640517-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/09/18 13:13

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0232	0.0300	77	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Orders : 578048,

Project ID:

Lab Batch #: 3043351 **Sample:** 7640522-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/10/18 00:44

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	70-130	
4-Bromofluorobenzene	0.0330	0.0300	110	70-130	

Lab Batch #: 3043351 **Sample:** 7640522-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/10/18 01:03

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	70-130	
4-Bromofluorobenzene	0.0309	0.0300	103	70-130	

Lab Batch #: 3043351 **Sample:** 578118-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/10/18 01:22

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	70-130	
4-Bromofluorobenzene	0.0315	0.0300	105	70-130	

Lab Batch #: 3043351 **Sample:** 578118-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/10/18 01:41

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	70-130	
4-Bromofluorobenzene	0.0350	0.0300	117	70-130	

Lab Batch #: 3043351 **Sample:** 7640522-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/10/18 02:38

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	70-130	
4-Bromofluorobenzene	0.0297	0.0300	99	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Orders : 578048,

Project ID:

Lab Batch #: 3043255 **Sample:** 7640491-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/08/18 15:33

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.9	100	97	70-135	
o-Terphenyl	49.5	50.0	99	70-135	

Lab Batch #: 3043255 **Sample:** 7640491-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/08/18 15:59

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	52.4	50.0	105	70-135	

Lab Batch #: 3043255 **Sample:** 7640491-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/08/18 16:26

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	56.3	50.0	113	70-135	

Lab Batch #: 3043255 **Sample:** 578048-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/08/18 18:10

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	48.4	50.0	97	70-135	

Lab Batch #: 3043255 **Sample:** 578048-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/08/18 18:36

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.8	112	70-135	
o-Terphenyl	51.8	49.9	104	70-135	

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

BS / BSD Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Order #: 578048 **Project ID:**

Analyst: ALJ **Date Prepared:** 03/06/2018 **Date Analyzed:** 03/07/2018

Lab Batch ID: 3043008 **Sample:** 7640330-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000386	0.100	0.0741	74	0.101	0.0718	71	3	70-130	35	
Toluene	<0.000457	0.100	0.0793	79	0.101	0.0780	77	2	70-130	35	
Ethylbenzene	<0.000567	0.100	0.0901	90	0.101	0.0880	87	2	70-130	35	
m_p-Xylenes	<0.00102	0.201	0.178	89	0.201	0.175	87	2	70-130	35	
o-Xylene	<0.000346	0.100	0.0907	91	0.101	0.0893	88	2	70-130	35	

Analyst: ALJ **Date Prepared:** 03/08/2018 **Date Analyzed:** 03/09/2018

Lab Batch ID: 3043201 **Sample:** 7640464-1-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	<0.000387	0.101	0.0883	87	0.101	0.0848	84	4	70-130	35	
Toluene	<0.000458	0.101	0.0900	89	0.101	0.0930	92	3	70-130	35	
Ethylbenzene	<0.000568	0.101	0.0937	93	0.101	0.0974	96	4	70-130	35	
m_p-Xylenes	<0.00102	0.201	0.182	91	0.202	0.189	94	4	70-130	35	
o-Xylene	<0.000346	0.101	0.0921	91	0.101	0.0957	95	4	70-130	35	

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

BS / BSD Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Order #: 578048 **Project ID:**

Analyst: ALJ **Date Prepared:** 03/09/2018 **Date Analyzed:** 03/09/2018

Lab Batch ID: 3043349 **Sample:** 7640517-1-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	<0.000384	0.0998	0.0845	85	0.100	0.0860	86	2	70-130	35	
Toluene	<0.000455	0.0998	0.0895	90	0.100	0.0924	92	3	70-130	35	
Ethylbenzene	<0.000564	0.0998	0.103	103	0.100	0.104	104	1	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.204	102	0.200	0.206	103	1	70-130	35	
o-Xylene	<0.000344	0.0998	0.0994	100	0.100	0.119	119	18	70-130	35	

Analyst: ALJ **Date Prepared:** 03/09/2018 **Date Analyzed:** 03/10/2018

Lab Batch ID: 3043351 **Sample:** 7640522-1-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	<0.000384	0.0998	0.0842	84	0.100	0.0895	90	6	70-130	35	
Toluene	<0.000455	0.0998	0.0894	90	0.100	0.0952	95	6	70-130	35	
Ethylbenzene	<0.000564	0.0998	0.101	101	0.100	0.107	107	6	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.199	100	0.200	0.213	107	7	70-130	35	
o-Xylene	<0.000344	0.0998	0.0980	98	0.100	0.104	104	6	70-130	35	

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

BS / BSD Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Order #: 578048 **Project ID:**

Analyst: ARM **Date Prepared:** 03/09/2018 **Date Analyzed:** 03/08/2018

Lab Batch ID: 3043255 **Sample:** 7640491-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	951	95	1000	1010	101	6	70-135	35	
Diesel Range Organics (DRO)	<8.13	1000	988	99	1000	1060	106	7	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Order # : 578048 **Project ID:**

Lab Batch ID: 3043008 **QC- Sample ID:** 578048-016 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/07/2018 **Date Prepared:** 03/06/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000386	0.100	0.0734	73	0.101	0.0744	74	1	70-130	35	
Toluene	<0.000457	0.100	0.0776	78	0.101	0.0795	79	2	70-130	35	
Ethylbenzene	<0.000567	0.100	0.0891	89	0.101	0.0908	90	2	70-130	35	
m_p-Xylenes	<0.00102	0.201	0.177	88	0.202	0.181	90	2	70-130	35	
o-Xylene	<0.000346	0.100	0.0882	88	0.101	0.0899	89	2	70-130	35	

Lab Batch ID: 3043201 **QC- Sample ID:** 578604-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/09/2018 **Date Prepared:** 03/08/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000383	0.0996	0.0818	82	0.100	0.0884	88	8	70-130	35	
Toluene	<0.000454	0.0996	0.0659	66	0.100	0.0780	78	17	70-130	35	X
Ethylbenzene	<0.000563	0.0996	0.0601	60	0.100	0.0745	75	21	70-130	35	X
m_p-Xylenes	<0.00101	0.199	0.112	56	0.200	0.143	72	24	70-130	35	X
o-Xylene	<0.000343	0.0996	0.0556	56	0.100	0.0717	72	25	70-130	35	X

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Order # : 578048 **Project ID:**

Lab Batch ID: 3043349 **QC- Sample ID:** 578048-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/09/2018 **Date Prepared:** 03/09/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000383	0.0994	0.0811	82	0.0998	0.0792	79	2	70-130	35	
Toluene	0.00159	0.0994	0.0823	81	0.0998	0.0804	79	2	70-130	35	
Ethylbenzene	0.00340	0.0994	0.0839	81	0.0998	0.0853	82	2	70-130	35	
m_p-Xylenes	0.0140	0.199	0.169	78	0.200	0.174	80	3	70-130	35	
o-Xylene	0.00732	0.0994	0.0866	80	0.0998	0.0904	83	4	70-130	35	

Lab Batch ID: 3043351 **QC- Sample ID:** 578118-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/10/2018 **Date Prepared:** 03/09/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000388	0.101	0.0556	55	0.100	0.0586	59	5	70-130	35	X
Toluene	<0.000459	0.101	0.0555	55	0.100	0.0617	62	11	70-130	35	X
Ethylbenzene	<0.000569	0.101	0.0557	55	0.100	0.0675	68	19	70-130	35	X
m_p-Xylenes	<0.00102	0.202	0.108	53	0.200	0.134	67	21	70-130	35	X
o-Xylene	<0.000347	0.101	0.0543	54	0.100	0.0672	67	21	70-130	35	X

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Order # : 578048 **Project ID:**

Lab Batch ID: 3043255 **QC- Sample ID:** 578048-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/08/2018 **Date Prepared:** 03/09/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	980	98	998	1040	104	6	70-135	35	
Diesel Range Organics (DRO)	<8.13	1000	1080	108	998	1140	114	5	70-135	35	

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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Xenco Job # 578048

Client / Reporting Information

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

Project Information

Project Name/Number: Mewbourne Marathon 15 PA
Project Location: Lea County, NM
Invoice To: PAALP C/O Camille Bryant
Invoice:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	FL 2	6"	2/27/2018	9:00	S	1									X		X		
2	FL 3	3"	2/27/2018	9:05	S	1									X		X		
3	FL 4	6"	2/27/2018	9:10	S	1									X		X		
4	NSW 1	6"	2/27/2018	9:15	S	1									X		X		
5	NSW 2	1.5'	2/27/2018	9:20	S	1									X		X		
6	NSW 3	3"	2/27/2018	9:25	S	1									X		X		
7	ESW 1	6"	2/27/2018	9:30	S	1									X		X		
8	ESW 2	1.5'	2/27/2018	9:35	S	1									X		X		
9	ESW 3	3"	2/27/2018	9:40	S	1									X		X		
10	ESW 4	1.5'	2/27/2018	9:45	S	1									X		X		
11	WSW 1	6"	2/27/2018	9:50	S	1									X		X		
12	WSW 2	1.5'	2/27/2018	9:55	S	1									X		X		
13	WSW 3	1.5'	2/27/2018	10:00	S	1									X		X		
14	SSW 1	6"	2/27/2018	10:05	S	1									X		X		
15	SSW 2	3"	2/27/2018	10:15	S	1									X		X		
16	SSW 3	1.5'	2/27/2018	10:20	S	1									X		X		

Temp: 2.3 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.1

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

Notes:

jlowry@trcsolutions.com zconder@trcsolutions.com
CJBryant@paalp.com algroves@paalp.com
kblackburn@trcsolutions.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		3/1 1:30	1	2		2
3	Relinquished by:	Date Time: 3/1 2:B	Received By: 3	Relinquished By: 4	Date Time: 3-1-18	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. 1.5 / Thermo. Corr. Factor

3/2 11:15

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

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 03/02/2018 11:15:00 AM

Work Order #: 578048

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

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.1	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**No**	TPH received in bulk jars
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**No**	
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 03/02/2018

Checklist reviewed by: Kelsey Brooks Date: 03/05/2018

Analytical Report 578050

for

TRC Solutions, Inc

Project Manager: Joel Lowry

Mewbourne Marathon 15 PA

12-MAR-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

Table of Contents

12-MAR-18

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

Reference: XENCO Report No(s): **578050**
Mewbourne Marathon 15 PA
Project Address: Lea County NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 578050. 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. 578050 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 578050

TRC Solutions, Inc, Midland, TX

Mewbourne Marathon 15 PA

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
LU FL 1	S	02-27-18 09:00	8 In	578050-001

CASE NARRATIVE

Client Name: TRC Solutions, Inc

Project Name: Mewbourne Marathon 15 PA

Project ID:
Work Order Number(s): *578050*

Report Date: *12-MAR-18*
Date Received: *03/02/2018*

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-3043351 BTEX by EPA 8021

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

Certificate of Analytical Results
578050

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **LU FL 1** Matrix: Soil Sample Depth: 8 In

Lab Sample Id: 578050-001 Date Collected: 02.27.18 09.00 Date Received: 03.02.18 11.15

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043121 Date Prep: 03.07.18 10.00

Prep seq: 7640357

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**649**	74.8	39.9	mg/kg	03.08.18 00:16		5
Diesel Range Organics (DRO)	C10C28DRO	**6150**	74.8	40.5	mg/kg	03.08.18 00:16		5
Oil Range Hydrocarbons (ORO)	PHCG2835	**404**	74.8	40.5	mg/kg	03.08.18 00:16		5
Total TPH	PHC635	**7203**		39.9	mg/kg	03.08.18 00:16		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	115	70 - 135	%		
o-Terphenyl	89	70 - 135	%		

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043351 Date Prep: 03.09.18 16.45

Prep seq: 7640522

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.145**	0.0996	0.0192	mg/kg	03.10.18 08:56		50
Toluene	108-88-3	**3.36**	0.0996	0.0227	mg/kg	03.10.18 08:56		50
Ethylbenzene	100-41-4	**3.01**	0.0996	0.0281	mg/kg	03.10.18 08:56		50
m_p-Xylenes	179601-23-1	**7.86**	0.199	0.0505	mg/kg	03.10.18 08:56		50
o-Xylene	95-47-6	**3.01**	0.0996	0.0171	mg/kg	03.10.18 08:56		50
Xylenes, Total	1330-20-7	**10.87**		0.0171	mg/kg	03.10.18 08:56		
Total BTEX		**17.385**		0.0171	mg/kg	03.10.18 08:56		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	77	70 - 130	%		
4-Bromofluorobenzene	113	70 - 130	%		

Certificate of Analytical Results
578050

TRC Solutions, Inc, Midland, TX
Mewbourne Marathon 15 PA

Sample Id: **7640357-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7640357-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043121 Date Prep: 03.07.18 10.00

Prep seq: 7640357

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	03.07.18 14:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	03.07.18 14:05	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	03.07.18 14:05	U	1
Total TPH	PHC635	<8		8	mg/kg	03.07.18 14:05	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	104	70 - 135	%		
o-Terphenyl	107	70 - 135	%		

Sample Id: **7640522-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7640522-1-BLK Date Collected: Date Received:

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

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043351 Date Prep: 03.09.18 16.45

Prep seq: 7640522

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	03.10.18 02:38	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	03.10.18 02:38	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	03.10.18 02:38	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	03.10.18 02:38	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	03.10.18 02:38	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	83	70 - 130	%		
4-Bromofluorobenzene	99	70 - 130	%		

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Orders : 578050,

Project ID:

Lab Batch #: 3043351 **Sample:** 7640522-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/10/18 00:44

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	70-130	
4-Bromofluorobenzene	0.0330	0.0300	110	70-130	

Lab Batch #: 3043351 **Sample:** 7640522-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/10/18 01:03

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	70-130	
4-Bromofluorobenzene	0.0309	0.0300	103	70-130	

Lab Batch #: 3043351 **Sample:** 578118-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/10/18 01:22

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	70-130	
4-Bromofluorobenzene	0.0315	0.0300	105	70-130	

Lab Batch #: 3043351 **Sample:** 578118-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/10/18 01:41

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	70-130	
4-Bromofluorobenzene	0.0350	0.0300	117	70-130	

Lab Batch #: 3043351 **Sample:** 7640522-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/10/18 02:38

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	70-130	
4-Bromofluorobenzene	0.0297	0.0300	99	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Orders : 578050,

Project ID:

Lab Batch #: 3043121 **Sample:** 7640357-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/07/18 14:05

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	53.3	50.0	107	70-135	

Lab Batch #: 3043121 **Sample:** 7640357-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/07/18 14:33

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	56.5	50.0	113	70-135	

Lab Batch #: 3043121 **Sample:** 7640357-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/07/18 15:00

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	54.7	50.0	109	70-135	

Lab Batch #: 3043121 **Sample:** 577916-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/07/18 15:52

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.9	118	70-135	
o-Terphenyl	56.0	50.0	112	70-135	

Lab Batch #: 3043121 **Sample:** 577916-005 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/07/18 16:18

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.8	120	70-135	
o-Terphenyl	56.2	49.9	113	70-135	

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

BS / BSD Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Order #: 578050 **Project ID:**

Analyst: ALJ **Date Prepared:** 03/09/2018 **Date Analyzed:** 03/10/2018

Lab Batch ID: 3043351 **Sample:** 7640522-1-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	<0.000384	0.0998	0.0842	84	0.100	0.0895	90	6	70-130	35	
Toluene	<0.000455	0.0998	0.0894	90	0.100	0.0952	95	6	70-130	35	
Ethylbenzene	<0.000564	0.0998	0.101	101	0.100	0.107	107	6	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.199	100	0.200	0.213	107	7	70-130	35	
o-Xylene	<0.000344	0.0998	0.0980	98	0.100	0.104	104	6	70-130	35	

Analyst: ARM **Date Prepared:** 03/07/2018 **Date Analyzed:** 03/07/2018

Lab Batch ID: 3043121 **Sample:** 7640357-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1040	104	1000	1010	101	3	70-135	35	
Diesel Range Organics (DRO)	<8.13	1000	1090	109	1000	1030	103	6	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: Mewbourne Marathon 15 PA

Work Order # : 578050 **Project ID:**

Lab Batch ID: 3043351 **QC- Sample ID:** 578118-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/10/2018 **Date Prepared:** 03/09/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000388	0.101	0.0556	55	0.100	0.0586	59	5	70-130	35	X
Toluene	<0.000459	0.101	0.0555	55	0.100	0.0617	62	11	70-130	35	X
Ethylbenzene	<0.000569	0.101	0.0557	55	0.100	0.0675	68	19	70-130	35	X
m_p-Xylenes	<0.00102	0.202	0.108	53	0.200	0.134	67	21	70-130	35	X
o-Xylene	<0.000347	0.101	0.0543	54	0.100	0.0672	67	21	70-130	35	X

Lab Batch ID: 3043121 **QC- Sample ID:** 577916-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/07/2018 **Date Prepared:** 03/07/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	1050	105	998	1050	105	0	70-135	35	
Diesel Range Organics (DRO)	103	999	1160	106	998	1170	107	1	70-135	35	

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

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

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

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

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

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES
Setting the Standard since 1990

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

Xenco Job # 578050

Client / Reporting Information

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

Project Information

Project Name/Number: Mewbourne Marathon 15 PA
Project Location: Lea County, NM
Invoice To: PAALP C/O Camille Bryant
Invoice:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	LU FL 1	8"	2/27/2018	9:00	S	1									X		X		
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Temp: 2.3 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.1

Turnaround Time (Business days)

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

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

Data Deliverable Information

- [ ] 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

jlowry@trcsolutions.com zconder@trcsolutions.com
CJBryant@paalp.com algroves@paalp.com
kblackburn@trcsolutions.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler / Relinquished by / Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By
1		3/1 1:30	1	2		2
3		3/1 2:13	3	4	3-1-18 3:28	4 3/2 11:15
5			5	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. 1.5c / Thermo. Corr. Factor
6			6			

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.

Certificate of Analysis Summary 580241

TRC Solutions, Inc, Midland, TX

Project Name: Marathon 15 PA

Project Id:

Contact: Joel Lowry

Project Location: Lea CO, NM

Date Received in Lab: Fri Mar-23-18 12:30 pm

Report Date: 03-APR-18

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	580241-001		580241-002		580241-003		580241-004		580241-005		580241-006	
	Field Id:	FL-3b @4'		FL-3 @6'		LU FL-1b @2'		LU FL-1 @4'		NSW 1b		ESW 1b	
	Depth:	4- ft		6- ft		2- ft		4- ft		1- ft		1- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-22-18 10:45		Mar-22-18 10:50		Mar-22-18 10:35		Mar-22-18 10:40		Mar-22-18 11:00		Mar-22-18 10:59	
Chloride by EPA 300	***Extracted:***	Mar-26-18 09:30				Mar-26-18 09:30							
	Analyzed:	Mar-26-18 19:14				Mar-26-18 19:26							
	Units/RL:	mg/kg	RL			mg/kg	RL						
Chloride		36.4	25.0			52.2	25.0						
DRO-ORO By SW8015B	***Extracted:***	Mar-29-18 12:15		Mar-29-18 12:15		Mar-29-18 12:15		Mar-29-18 12:15		Mar-29-18 12:15		Mar-29-18 12:15	
	Analyzed:	Mar-29-18 15:02		Mar-29-18 16:47		Mar-29-18 17:22		Mar-29-18 17:58		Mar-29-18 18:33		Mar-29-18 19:09	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Diesel Range Organics (DRO)		<25.0	25.0	<25.0	25.0	29.4	25.0	<24.9	24.9	<25.0	25.0	<25.2	25.2
Oil Range Hydrocarbons (ORO)		<25.0	25.0	<25.0	25.0	<25.0	25.0	<24.9	24.9	<25.0	25.0	<25.2	25.2
TPH GRO by EPA 8015 Mod.	***Extracted:***	Mar-26-18 14:00		Mar-26-18 14:00		Mar-26-18 14:00		Mar-26-18 14:00		Mar-26-18 14:00		Mar-26-18 14:00	
	Analyzed:	Mar-26-18 22:27		Mar-26-18 22:55		Mar-26-18 23:21		Mar-26-18 23:48		Mar-27-18 00:16		Mar-27-18 00:43	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
TPH-GRO		<3.87	3.87	<3.57	3.57	<3.90	3.90	<3.97	3.97	<3.82	3.82	<3.94	3.94

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 580241

TRC Solutions, Inc, Midland, TX

Project Name: Marathon 15 PA

Project Id:

Contact: Joel Lowry

Project Location: Lea CO, NM

Date Received in Lab: Fri Mar-23-18 12:30 pm

Report Date: 03-APR-18

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	580241-007		580241-008									
	Field Id:	SSW 1b		WSW 1b									
	Depth:	1- ft		1- ft									
	Matrix:	SOIL		SOIL									
	Sampled:	Mar-22-18 10:55		Mar-22-18 10:57									
BTEX by EPA 8021B	***Extracted:***	Mar-26-18 14:00											
	Analyzed:	Mar-26-18 20:39											
	Units/RL:	mg/kg	RL										
Benzene		<0.0195	0.0195										
Toluene		<0.0195	0.0195										
Ethylbenzene		<0.0195	0.0195										
m_p-Xylenes		<0.0390	0.0390										
o-Xylene		<0.0195	0.0195										
Xylenes, Total		<0.0195	0.0195										
Total BTEX		<0.0195	0.0195										
DRO-ORO By SW8015B	***Extracted:***	Mar-29-18 12:15		Mar-29-18 12:15									
	Analyzed:	Mar-29-18 19:44		Mar-29-18 20:19									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Diesel Range Organics (DRO)		631	25.1	<25.3	25.3								
Oil Range Hydrocarbons (ORO)		69.0	25.1	<25.3	25.3								
TPH GRO by EPA 8015 Mod.	***Extracted:***	Mar-26-18 14:00		Mar-26-18 14:00									
	Analyzed:	Mar-26-18 20:39		Mar-27-18 01:10									
	Units/RL:	mg/kg	RL	mg/kg	RL								
TPH-GRO		7.30	3.90	<3.98	3.98								

Kelsey Brooks
Project Manager

Analytical Report 580241

for

TRC Solutions, Inc

Project Manager: Joel Lowry

Marathon 15 PA

03-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)

03-APR-18

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

Reference: XENCO Report No(s): **580241**
Marathon 15 PA
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) 580241. 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. 580241 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 580241

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-3b @4'	S	03-22-18 10:45	4 ft	580241-001
FL-3 @6'	S	03-22-18 10:50	6 ft	580241-002
LU FL-1b @2'	S	03-22-18 10:35	2 ft	580241-003
LU FL-1 @4'	S	03-22-18 10:40	4 ft	580241-004
NSW 1b	S	03-22-18 11:00	1 ft	580241-005
ESW 1b	S	03-22-18 10:59	1 ft	580241-006
SSW 1b	S	03-22-18 10:55	1 ft	580241-007
WSW 1b	S	03-22-18 10:57	1 ft	580241-008

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3044872 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3045196 DRO-ORO By SW8015B
Surrogate n-Triacontane recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 580241-001 SD,580241-004,580241-005.
Surrogate Tricosane recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 580241-004,580241-002,580241-005.

Certificate of Analytical Results 580241

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id:	**FL-3b @4'**	Matrix:	Soil	Date Received:	03.23.18 12.30
Lab Sample Id:	580241-001	Date Collected:	03.22.18 10.45	Sample Depth:	4 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	03.26.18 09.30	Basis:	Wet Weight
Seq Number:	3044820				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**36.4**	25.0	mg/kg	03.26.18 19.14		1

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	PGM			% Moisture:	
Analyst:	PGM	Date Prep:	03.29.18 12.15	Basis:	Wet Weight
Seq Number:	3045196				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	03.29.18 15.02	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	03.29.18 15.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	68	%	65-144	03.29.18 15.02	
n-Triacontane	638-68-6	48	%	46-152	03.29.18 15.02	

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.26.18 14.00	Basis:	Wet Weight
Seq Number:	3044868				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.87	3.87	mg/kg	03.26.18 22.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	76-123	03.26.18 22.27	
a,a,a-Trifluorotoluene	98-08-8	94	%	69-120	03.26.18 22.27	

Certificate of Analytical Results 580241

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id:	**FL-3 @6'**	Matrix:	Soil	Date Received:	03.23.18 12.30
Lab Sample Id:	580241-002	Date Collected:	03.22.18 10.50	Sample Depth:	6 ft

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	PGM			% Moisture:	
Analyst:	PGM	Date Prep:	03.29.18 12.15	Basis:	Wet Weight
Seq Number:	3045196				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	03.29.18 16.47	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	03.29.18 16.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	60	%	65-144	03.29.18 16.47	**
n-Triacontane	638-68-6	48	%	46-152	03.29.18 16.47	

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.26.18 14.00	Basis:	Wet Weight
Seq Number:	3044868				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.57	3.57	mg/kg	03.26.18 22.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	76-123	03.26.18 22.55	
a,a,a-Trifluorotoluene	98-08-8	94	%	69-120	03.26.18 22.55	

Certificate of Analytical Results 580241

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id:	**LU FL-1b @2'**	Matrix:	Soil	Date Received:	03.23.18 12.30
Lab Sample Id:	580241-003	Date Collected:	03.22.18 10.35	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	RNL			% Moisture:	
Analyst:	RNL	Date Prep:	03.26.18 09.30	Basis:	Wet Weight
Seq Number:	3044820				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**52.2**	25.0	mg/kg	03.26.18 19.26		1

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	PGM			% Moisture:	
Analyst:	PGM	Date Prep:	03.29.18 12.15	Basis:	Wet Weight
Seq Number:	3045196				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**29.4**	25.0	mg/kg	03.29.18 17.22		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	03.29.18 17.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	101	%	65-144	03.29.18 17.22	
n-Triacontane	638-68-6	66	%	46-152	03.29.18 17.22	

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.26.18 14.00	Basis:	Wet Weight
Seq Number:	3044868				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.90	3.90	mg/kg	03.26.18 23.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	76-123	03.26.18 23.21	
a,a,a-Trifluorotoluene	98-08-8	93	%	69-120	03.26.18 23.21	

Certificate of Analytical Results 580241

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id:	**LU FL-1 @4'**	Matrix:	Soil	Date Received:	03.23.18 12.30
Lab Sample Id:	580241-004	Date Collected:	03.22.18 10.40	Sample Depth:	4 ft

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	PGM			% Moisture:	
Analyst:	PGM	Date Prep:	03.29.18 12.15	Basis:	Wet Weight
Seq Number:	3045196				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	03.29.18 17.58	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<24.9	24.9	mg/kg	03.29.18 17.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	60	%	65-144	03.29.18 17.58	**
n-Triacontane	638-68-6	44	%	46-152	03.29.18 17.58	**

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.26.18 14.00	Basis:	Wet Weight
Seq Number:	3044868				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.97	3.97	mg/kg	03.26.18 23.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	76-123	03.26.18 23.48	
a,a,a-Trifluorotoluene	98-08-8	94	%	69-120	03.26.18 23.48	

Certificate of Analytical Results 580241

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id:	**NSW 1b**	Matrix:	Soil	Date Received:	03.23.18 12.30
Lab Sample Id:	580241-005	Date Collected:	03.22.18 11.00	Sample Depth:	1 ft

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	PGM			% Moisture:	
Analyst:	PGM	Date Prep:	03.29.18 12.15	Basis:	Wet Weight
Seq Number:	3045196				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	03.29.18 18.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	03.29.18 18.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	59	%	65-144	03.29.18 18.33	**
n-Triacontane	638-68-6	45	%	46-152	03.29.18 18.33	**

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.26.18 14.00	Basis:	Wet Weight
Seq Number:	3044868				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.82	3.82	mg/kg	03.27.18 00.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	76-123	03.27.18 00.16	
a,a,a-Trifluorotoluene	98-08-8	95	%	69-120	03.27.18 00.16	

Certificate of Analytical Results 580241

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id:	**ESW 1b**	Matrix:	Soil	Date Received:	03.23.18 12.30
Lab Sample Id:	580241-006	Date Collected:	03.22.18 10.59	Sample Depth:	1 ft

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	PGM			% Moisture:	
Analyst:	PGM	Date Prep:	03.29.18 12.15	Basis:	Wet Weight
Seq Number:	3045196				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.2	25.2	mg/kg	03.29.18 19.09	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.2	25.2	mg/kg	03.29.18 19.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	79	%	65-144	03.29.18 19.09	
n-Triacontane	638-68-6	56	%	46-152	03.29.18 19.09	

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.26.18 14.00	Basis:	Wet Weight
Seq Number:	3044868				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.94	3.94	mg/kg	03.27.18 00.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	76-123	03.27.18 00.43	
a,a,a-Trifluorotoluene	98-08-8	93	%	69-120	03.27.18 00.43	

Certificate of Analytical Results 580241

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id:	**SSW 1b**	Matrix:	Soil	Date Received:	03.23.18 12.30
Lab Sample Id:	580241-007	Date Collected:	03.22.18 10.55	Sample Depth:	1 ft

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	PGM			% Moisture:	
Analyst:	PGM	Date Prep:	03.29.18 12.15	Basis:	Wet Weight
Seq Number:	3045196				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**631**	25.1	mg/kg	03.29.18 19.44		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**69.0**	25.1	mg/kg	03.29.18 19.44		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	314	%	65-144	03.29.18 19.44	**
n-Triacontane	638-68-6	138	%	46-152	03.29.18 19.44	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.26.18 14.00	Basis:	Wet Weight
Seq Number:	3044872				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0195	0.0195	mg/kg	03.26.18 20.39	U	1
Toluene	108-88-3	<0.0195	0.0195	mg/kg	03.26.18 20.39	U	1
Ethylbenzene	100-41-4	<0.0195	0.0195	mg/kg	03.26.18 20.39	U	1
m_p-Xylenes	179601-23-1	<0.0390	0.0390	mg/kg	03.26.18 20.39	U	1
o-Xylene	95-47-6	<0.0195	0.0195	mg/kg	03.26.18 20.39	U	1
Xylenes, Total	1330-20-7	<0.0195	0.0195	mg/kg	03.26.18 20.39	U	1
Total BTEX		<0.0195	0.0195	mg/kg	03.26.18 20.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	68-120	03.26.18 20.39	
a,a,a-Trifluorotoluene	98-08-8	92	%	71-121	03.26.18 20.39	

Certificate of Analytical Results 580241

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id:	**SSW 1b**	Matrix:	Soil	Date Received:	03.23.18 12.30
Lab Sample Id:	580241-007	Date Collected:	03.22.18 10.55	Sample Depth:	1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.26.18 14.00	Basis:	Wet Weight
Seq Number:	3044868				

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	**7.30**	3.90		mg/kg	03.26.18 20.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	76-123	03.26.18 20.39	
a,a,a-Trifluorotoluene	98-08-8	98	%	69-120	03.26.18 20.39	

Certificate of Analytical Results 580241

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id:	**WSW 1b**	Matrix:	Soil	Date Received:	03.23.18 12.30
Lab Sample Id:	580241-008	Date Collected:	03.22.18 10.57	Sample Depth:	1 ft

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	PGM			% Moisture:	
Analyst:	PGM	Date Prep:	03.29.18 12.15	Basis:	Wet Weight
Seq Number:	3045196				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.3	25.3	mg/kg	03.29.18 20.19	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.3	25.3	mg/kg	03.29.18 20.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	100	%	65-144	03.29.18 20.19	
n-Triacontane	638-68-6	71	%	46-152	03.29.18 20.19	

Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.26.18 14.00	Basis:	Wet Weight
Seq Number:	3044868				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.98	3.98	mg/kg	03.27.18 01.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	76-123	03.27.18 01.10	
a,a,a-Trifluorotoluene	98-08-8	96	%	69-120	03.27.18 01.10	

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 580241

TRC Solutions, Inc

Marathon 15 PA

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3044820 Matrix: Solid Date Prep: 03.26.18
MB Sample Id: 7641494-1-BLK LCS Sample Id: 7641494-1-BKS LCSD Sample Id: 7641494-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	269	108	267	107	90-110	1	20	mg/kg	03.26.18 14:41	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3044820 Matrix: Soil Date Prep: 03.26.18
Parent Sample Id: 580037-001 MS Sample Id: 580037-001 S MSD Sample Id: 580037-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5390	250	6150	304	6350	384	80-120	3	20	mg/kg	03.26.18 15:55	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3044820 Matrix: Soil Date Prep: 03.26.18
Parent Sample Id: 580038-001 MS Sample Id: 580038-001 S MSD Sample Id: 580038-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1080	250	1440	144	1470	156	80-120	2	20	mg/kg	03.26.18 18:12	X

Analytical Method: **DRO-ORO By SW8015B** Prep Method: SW8015P
Seq Number: 3045196 Matrix: Solid Date Prep: 03.29.18
MB Sample Id: 7641685-1-BLK LCS Sample Id: 7641685-1-BKS LCSD Sample Id: 7641685-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	<25.0	100	99.3	99	96.8	97	63-139	3	20	mg/kg	03.29.18 13:52	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Tricosane	141		149	**	137		65-144	%	03.29.18 13:52
n-Triacontane	100		90		94		46-152	%	03.29.18 13:52

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

Final 1.000

QC Summary 580241

TRC Solutions, Inc

Marathon 15 PA

Analytical Method: **DRO-ORO By SW8015B** Prep Method: SW8015P
Seq Number: 3045196 Matrix: Soil Date Prep: 03.29.18
Parent Sample Id: 580241-001 MS Sample Id: 580241-001 S MSD Sample Id: 580241-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	<24.8	99.2	97.9	99	105	106	63-139	7	20	mg/kg	03.29.18 15:37	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Tricosane	72		71		65-144	%	03.29.18 15:37
n-Triacontane	56		44	**	46-152	%	03.29.18 15:37

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3044872 Matrix: Solid Date Prep: 03.26.18
MB Sample Id: 7641458-1-BLK LCS Sample Id: 7641458-1-BKS LCSD Sample Id: 7641458-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0200	2.00	1.84	92	1.72	86	55-120	7	20	mg/kg	03.26.18 17:30	
Toluene	<0.0200	2.00	1.72	86	1.77	89	77-120	3	20	mg/kg	03.26.18 17:30	
Ethylbenzene	<0.0200	2.00	1.67	84	1.78	89	77-120	6	20	mg/kg	03.26.18 17:30	
m_p-Xylenes	<0.0400	4.00	3.37	84	3.58	90	78-120	6	20	mg/kg	03.26.18 17:30	
o-Xylene	<0.0200	2.00	1.70	85	1.78	89	78-120	5	20	mg/kg	03.26.18 17:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	85		81		86		68-120	%	03.26.18 17:30
a,a,a-Trifluorotoluene	85		85		74		71-121	%	03.26.18 17:30

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3044872 Matrix: Soil Date Prep: 03.26.18
Parent Sample Id: 580241-007 MS Sample Id: 580241-007 S MSD Sample Id: 580241-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0191	1.91	1.59	83	1.60	86	54-120	1	25	mg/kg	03.26.18 21:06	
Toluene	<0.0191	1.91	1.67	87	1.69	90	57-120	1	25	mg/kg	03.26.18 21:06	
Ethylbenzene	<0.0191	1.91	1.77	93	1.83	98	58-131	3	25	mg/kg	03.26.18 21:06	
m_p-Xylenes	<0.0382	3.82	3.60	94	3.64	98	62-124	1	25	mg/kg	03.26.18 21:06	
o-Xylene	<0.0191	1.91	1.93	101	1.73	93	62-124	11	25	mg/kg	03.26.18 21:06	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	99		102		68-120	%	03.26.18 21:06
a,a,a-Trifluorotoluene	81		83		71-121	%	03.26.18 21:06

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 580241

TRC Solutions, Inc

Marathon 15 PA

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B

Seq Number: 3044868 Matrix: Solid Date Prep: 03.26.18

MB Sample Id: 7641460-1-BLK LCS Sample Id: 7641460-1-BKS LCSD Sample Id: 7641460-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<4.00	20.0	19.2	96	19.3	97	35-129	1	20	mg/kg	03.26.18 18:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	91		98		93		76-123	%	03.26.18 18:24
a,a,a-Trifluorotoluene	112		93		75		69-120	%	03.26.18 18:24

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B

Seq Number: 3044868 Matrix: Soil Date Prep: 03.26.18

Parent Sample Id: 580200-001 MS Sample Id: 580200-001 S MSD Sample Id: 580200-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<3.60	18.0	17.5	97	16.1	91	35-129	8	20	mg/kg	03.27.18 03:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	111		108		76-123	%	03.27.18 03:52
a,a,a-Trifluorotoluene	76		76		69-120	%	03.27.18 03:52

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

Xenco Job# 580241

Client / Reporting Information

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

Project Information

Project Name/Number: Marathon 15 PA
Project Location: Lea Co, NM
Invoice To: Plains Pipeline C/O Camille Bryant
Invoice: SRS 2018-013

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH 8015 M Ext	BTEX 8021	Chloride	Field Comments
1	FL-3b @ 4'	4'	3/22/2018	1045	S	1									X		X	
2	FL-3 @ 6'	6'	3/22/2018	1050	S	1									X			
3	LU FL-1b @ 2'	2'	3/22/2018	1035	S	1									X		X	
4	LU FL-1 @ 4'	4'	3/22/2018	1040	S	1									X			
5	NSW1b	1'	3/22/2018	1100	S	1									X			
6	ESW1b	1'	3/22/2018	1059	S	1									X			
7	SSW1b	1'	3/22/2018	1055	S	1									X	X		
8	WSW1b	1'	3/22/2018	1057	S	1									X			
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:

cjbryant@paalp.com jlowry@trcsolutions.com zconder@trcsolutions.com
algroves@paalp.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Joel Lowry	3/23 10:16	1	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time: 3/23 12:30	Received By: 5 Brandi Robinson	Custody Seal #	Preserved where applicable	On Ice ✓

Cooler Temp. 1R3 4.3/4.3 Thermo. Corr. Factor 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.

CARRY IN

Certificate of Analysis Summary 576745

TRC Solutions, Inc, Midland, TX

Project Name: Marathon 15 PA

Project Id:

Contact: Joel Lowry

Project Location: Lea Co,NM

Date Received in Lab: Fri Feb-16-18 11:30 am

Report Date: 28-FEB-18

Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	576745-001						
	Field Id:	WC-1						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Feb-08-18 11:30						
TCLP BTEX by SW 8260B SUB: TX104704215-18-24	***Extracted:***	Feb-22-18 14:00						
	Analyzed:	Feb-22-18 16:43						
	Units/RL:	mg/L	RL					
Benzene		<0.00500	0.00500					
Toluene		0.0152	0.00500					
Ethylbenzene		0.0199	0.00500					
m,p-Xylenes		0.0631	0.0100					
o-Xylene		0.0404	0.00500					
TCLP Mercury by SW-846 1311/7470A SUB: TX104704215-18-24	***Extracted:***	Feb-23-18 08:50						
	Analyzed:	Feb-23-18 14:08						
	Units/RL:	mg/L	RL					
Mercury		<0.000200	0.000200					
TCLP Metals by SW 1311/6010B SUB: TX104704215-18-24	***Extracted:***	Feb-23-18 10:00						
	Analyzed:	Feb-23-18 17:19						
	Units/RL:	mg/L	RL					
Arsenic		<0.0500	0.0500					
Barium		1.09	0.0500					
Cadmium		<0.0250	0.0250					
Chromium		<0.0500	0.0500					
Lead		<0.0500	0.0500					
Selenium		<0.100	0.100					
Silver		<0.100	0.100					

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 576745

TRC Solutions, Inc, Midland, TX

Project Name: Marathon 15 PA

Project Id:

Contact: Joel Lowry

Project Location: Lea Co,NM

Date Received in Lab: Fri Feb-16-18 11:30 am

Report Date: 28-FEB-18

Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	576745-001						
	Field Id:	WC-1						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Feb-08-18 11:30						
Chloride by EPA 300	***Extracted:***	Feb-22-18 14:20						
	Analyzed:	Feb-22-18 18:42						
	Units/RL:	mg/kg	RL					
Chloride		419	4.98					
Paint Filter Liquids Test by SW-9095	***Extracted:***							
	Analyzed:	Feb-27-18 15:39						
	Units/RL:	PA/100mL	RL					
Paint Filter		Pass	1.0					

Kelsey Brooks
Project Manager

Analytical Report 576745

for

TRC Solutions, Inc

Project Manager: Joel Lowry

Marathon 15 PA

28-FEB-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

28-FEB-18

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

Reference: XENCO Report No(s): **576745**
Marathon 15 PA
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) 576745. 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. 576745 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 576745

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
WC-1	S	02-08-18 11:30		576745-001

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 576745

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id:	**WC-1**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576745-001	Date Collected:	02.08.18 11.30		

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 14.20	Basis:	Wet Weight
Seq Number:	3041899				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**419**	4.98	mg/kg	02.22.18 18.42		1

Analytical Method:	Paint Filter Liquids Test by SW-9095		
Tech:	JUM	% Moisture:	
Analyst:	WRU	Basis:	Wet Weight
Seq Number:	3042401		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass	1.0	PA/100mL	02.27.18 15.39	U	1

Certificate of Analytical Results 576745

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id:	**WC-1**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576745-001	Date Collected:	02.08.18 11.30		

Analytical Method:	TCLP Mercury by SW-846 1311/7470A			Prep Method:	SW7470P
Tech:	AHI			% Moisture:	
Analyst:	ELW	Date Prep:	02.23.18 08.50		
Seq Number:	3041956			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	<0.000200	0.000200	mg/L	02.23.18 14.08	U	1

Analytical Method:	TCLP Metals by SW 1311/6010B			Prep Method:	SW3010A
Tech:	MLI			% Moisture:	
Analyst:	DEP	Date Prep:	02.23.18 10.00		
Seq Number:	3042081			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	<0.0500	0.0500	mg/L	02.23.18 17.19	U	1
Barium	7440-39-3	**1.09**	0.0500	mg/L	02.23.18 17.19		1
Cadmium	7440-43-9	<0.0250	0.0250	mg/L	02.23.18 17.19	U	1
Chromium	7440-47-3	<0.0500	0.0500	mg/L	02.23.18 17.19	U	1
Lead	7439-92-1	<0.0500	0.0500	mg/L	02.23.18 17.19	U	1
Selenium	7782-49-2	<0.100	0.100	mg/L	02.23.18 17.19	U	1
Silver	7440-22-4	<0.100	0.100	mg/L	02.23.18 17.19	U	1

Analytical Method:	TCLP BTEX by SW 8260B			Prep Method:	SW5030B
Tech:	JTR			% Moisture:	
Analyst:	JTR	Date Prep:	02.22.18 14.00		
Seq Number:	3041856			SUB:	TX104704215-18-24

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00500	0.00500	mg/L	02.22.18 16.43	U	5
Toluene	108-88-3	**0.0152**	0.00500	mg/L	02.22.18 16.43		5
Ethylbenzene	100-41-4	**0.0199**	0.00500	mg/L	02.22.18 16.43		5
m,p-Xylenes	179601-23-1	**0.0631**	0.0100	mg/L	02.22.18 16.43		5
o-Xylene	95-47-6	**0.0404**	0.00500	mg/L	02.22.18 16.43		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	106	%	75-131	02.22.18 16.43	
1,2-Dichloroethane-D4	17060-07-0	106	%	63-144	02.22.18 16.43	
Toluene-D8	2037-26-5	100	%	80-117	02.22.18 16.43	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

QC Summary 576745

TRC Solutions, Inc

Marathon 15 PA

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041899 Matrix: Solid Date Prep: 02.22.18
MB Sample Id: 7639621-1-BLK LCS Sample Id: 7639621-1-BKS LCSD Sample Id: 7639621-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	256	102	258	103	90-110	1	20	mg/kg	02.22.18 16:31	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041899 Matrix: Soil Date Prep: 02.22.18
Parent Sample Id: 576570-001 MS Sample Id: 576570-001 S MSD Sample Id: 576570-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	276	248	529	102	558	114	90-110	5	20	mg/kg	02.22.18 18:11	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041899 Matrix: Soil Date Prep: 02.22.18
Parent Sample Id: 577098-001 MS Sample Id: 577098-001 S MSD Sample Id: 577098-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	31.3	251	293	104	294	105	90-110	0	20	mg/kg	02.22.18 16:47	

Analytical Method: **TCLP Mercury by SW-846 1311/7470A** Prep Method: SW7470P
Seq Number: 3041956 Matrix: Water Date Prep: 02.23.18
MB Sample Id: 7639653-1-BLK LCS Sample Id: 7639653-1-BKS LCSD Sample Id: 7639653-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.000200	0.00200	0.00187	94	0.00186	93	80-120	1	20	mg/L	02.23.18 13:54	

Analytical Method: **TCLP Mercury by SW-846 1311/7470A** Prep Method: SW7470P
Seq Number: 3041956 Matrix: Water Date Prep: 02.23.18
Parent Sample Id: 576806-001 MS Sample Id: 576806-001 S MSD Sample Id: 576806-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.000200	0.00200	0.00175	88	0.00177	89	75-125	1	20	mg/L	02.23.18 14:04	

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 576745

TRC Solutions, Inc

Marathon 15 PA

Analytical Method: **TCLP Metals by SW 1311/6010B** Prep Method: SW3010A

Seq Number: 3042081 Matrix: Water Date Prep: 02.23.18

MB Sample Id: 7639667-1-BLK LCS Sample Id: 7639667-1-BKS LCSD Sample Id: 7639667-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.0100	1.00	0.983	98	0.986	99	75-125	0	20	mg/L	02.23.18 17:10	
Barium	<0.0100	1.00	1.01	101	1.01	101	75-125	0	20	mg/L	02.23.18 17:10	
Cadmium	<0.00500	1.00	0.990	99	0.989	99	75-125	0	20	mg/L	02.23.18 17:10	
Chromium	<0.0100	1.00	1.05	105	1.05	105	75-125	0	20	mg/L	02.23.18 17:10	
Lead	<0.0100	1.00	1.05	105	1.04	104	75-125	1	20	mg/L	02.23.18 17:10	
Selenium	<0.0200	1.00	1.01	101	1.01	101	75-125	0	20	mg/L	02.23.18 17:10	
Silver	<0.0200	0.500	0.513	103	0.510	102	75-125	1	20	mg/L	02.23.18 17:10	

Analytical Method: **TCLP Metals by SW 1311/6010B** Prep Method: SW3010A

Seq Number: 3042081 Matrix: Soil Date Prep: 02.23.18

Parent Sample Id: 576745-001 MS Sample Id: 576745-001 S MSD Sample Id: 576745-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.0500	5.00	4.96	99	4.91	98	75-125	1	20	mg/L	02.23.18 17:23	
Barium	1.09	5.00	6.15	101	6.13	101	75-125	0	20	mg/L	02.23.18 17:23	
Cadmium	<0.0250	5.00	5.07	101	5.09	102	75-125	0	20	mg/L	02.23.18 17:23	
Chromium	<0.0500	5.00	5.08	102	5.09	102	75-125	0	20	mg/L	02.23.18 17:23	
Lead	<0.0500	5.00	5.17	103	5.15	103	75-125	0	20	mg/L	02.23.18 17:23	
Selenium	<0.100	5.00	5.14	103	5.11	102	75-125	1	20	mg/L	02.23.18 17:23	
Silver	<0.100	2.50	2.63	105	2.63	105	75-125	0	20	mg/L	02.23.18 17:23	

Analytical Method: **Paint Filter Liquids Test by SW-9095**

Seq Number: 3042401 Matrix: Soil

Parent Sample Id: 576745-001 MD Sample Id: 576745-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Paint Filter	Pass	Pass	0	20	PA/100mL	02.27.18 15:39	U

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

Final 1.000

QC Summary 576745

TRC Solutions, Inc

Marathon 15 PA

Analytical Method: **TCLP BTEX by SW 8260B** Prep Method: SW5030B

Seq Number: 3041856 Matrix: Water Date Prep: 02.22.18

MB Sample Id: 7639626-1-BLK LCS Sample Id: 7639626-1-BKS LCSD Sample Id: 7639626-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00500	0.500	0.489	98	0.464	93	66-142	5	20	mg/L	02.22.18 10:47	
Toluene	<0.00500	0.500	0.510	102	0.498	100	59-139	2	20	mg/L	02.22.18 10:47	
Ethylbenzene	<0.00500	0.500	0.530	106	0.494	99	75-125	7	20	mg/L	02.22.18 10:47	
m,p-Xylenes	<0.0100	1.00	1.12	112	1.05	105	75-125	6	20	mg/L	02.22.18 10:47	
o-Xylene	<0.00500	0.500	0.591	118	0.535	107	75-125	10	20	mg/L	02.22.18 10:47	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	101		93		92		75-131	%	02.22.18 10:47
1,2-Dichloroethane-D4	105		97		100		63-144	%	02.22.18 10:47
Toluene-D8	100		99		100		80-117	%	02.22.18 10:47

Analytical Method: **TCLP BTEX by SW 8260B** Prep Method: SW5030B

Seq Number: 3041856 Matrix: Soil Date Prep: 02.22.18

Parent Sample Id: 576849-001 MS Sample Id: 576849-001 S MSD Sample Id: 576849-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0100	1.00	1.01	101	0.975	98	66-142	4	20	mg/L	02.22.18 14:03	
Toluene	0.0633	1.00	1.13	107	1.08	102	59-139	5	20	mg/L	02.22.18 14:03	
Ethylbenzene	0.0167	1.00	1.06	104	1.02	100	75-125	4	20	mg/L	02.22.18 14:03	
m,p-Xylenes	0.0698	2.00	2.23	108	2.19	106	75-125	2	20	mg/L	02.22.18 14:03	
o-Xylene	0.0340	1.00	1.15	112	1.13	110	75-125	2	20	mg/L	02.22.18 14:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	92		94		75-131	%	02.22.18 14:03
1,2-Dichloroethane-D4	106		103		63-144	%	02.22.18 14:03
Toluene-D8	104		103		80-117	%	02.22.18 14:03

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

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)
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Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote #

Xenco Job # 576745

Client / Reporting Information

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

Project Information

Project Name/Number: Marathon 15 PA
Project Location: Lea County New Me:
Invoice To: Plains c/o Camille Bryant
Invoice:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	RCI	TCLP Benzyne	TCLP RCRA 8 Metals	NORM	CLORIDE	PAINT FILTER	Field Comments
1	WC-1	NA	2/8/2018	11:30	S	3										X	X	X	X	X	
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Temp: 2.1 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 1.9

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

Note

email: RHaskell@concho.com Jlowry@trcsolutions.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	[signature]	2/14/18 3:55	Brittany Cox	2	2/14/18 5:00	2/16 11:30
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice: X

Cooler Temp. 02 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.

Inter-Office Shipment

IOS Number **1056303**

Date/Time: 02/19/18 14:40
Lab# From: **Midland**
Lab# To: **Houston**

Created by: Connie Hernandez
Delivery Priority:
Air Bill No.: 771515868912

Please send report to: Kelsey Brooks
Address: 1211 W. Florida Ave, Midland TX 79701
Phone:
E-Mail: kelsey.brooks@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
576745-001	W	WC-1	02/08/18 11:30	SW6010BTCLP	TCLP Metals by SW 1311/6010B	**02/22/18**	08/07/18	KEB	AG AS BA CD CR PB SE	
576745-001	W	WC-1	02/08/18 11:30	SW7470A_TCLP	TCLP Mercury by SW-846 1311/7470A	**02/22/18**	03/08/18	KEB	HG	
576745-001	W	WC-1	02/08/18 11:30	SW8260BTX_TCLP	TCLP BTEX by SW 8260B	**02/22/18**	**02/22/18**	KEB	BZ BZME EBZ XYLMP X	

Inter Office Shipment or Sample Comments:

Relinquished By: Jessica Kramer
Jessica Kramer

Date Relinquished: 02/19/2018

Received By:
Jean Quila

Date Received: 02/20/2018 09:10

Cooler Temperature: 0.6

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 1056303

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : hou068

Sent By: Connie Hernandez **Date Sent:** 02/19/2018 02:40 PM

Received By: Jean Quila **Date Received:** 02/20/2018 09:10 AM

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

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 02/20/2018

Jean Quila

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 02/16/2018 11:30:00 AM

Work Order #: 576745

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

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.9	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Houston
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 02/16/2018

Checklist reviewed by: Kelsey Brooks Date: 02/19/2018

TRC Solutions, INC

ATTN: Tanor Tinley
2057 Commerce
Midland, TX 79703
432-520-7720

Sample Type:	Solid	Sample Date:	02/08/18
Sample Condition:	Intact/ Ambient deg C	Sample Time:	11:30
Lab ID#:	576745-001	Receiving Date:	02/16/18
Project Name:	Marathon 15 PA	Analysis Date:	02/21/18
Project # :		Analysis Time:	16:30
Project Location:	Lea Co, NM	Field Code:	WC-1

Analysis Description	Analysis Results pCi/G	Analysis Error +/- 2s	Analysis Results Bq/G	Analysis Error +/- 2s	Analysis Test Method	Analysis Technician
Ra-226	<1.64	N/A	<.06	N/A	EPA 901.1M	KEB
Ra-228	<.57	N/A	<.02	N/A	EPA 901.1M	KEB
Pb-210	<1.88	N/A	<.07	N/A	EPA 901.1M	KEB
Th-228	<3.54	N/A	<.13	N/A	EPA 901.1M	KEB
Bi-214	<.32	N/A	<.01	N/A	EPA 901.1M	KEB
Total Activity	0.00	N/A	0.00	N/A	EPA 901.1M	KEB

Notes:

Quality Assurance Review

Xenco Laboratories 1211 W Florida Ave, Midland TX 79701 (432)-704-5440

Analytical Report 578972

for

TRC Solutions, Inc

Project Manager: Joel Lowry

Marathon 15 PA

19-MAR-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

Table of Contents

19-MAR-18

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

Reference: XENCO Report No(s): **578972**
Marathon 15 PA
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) 578972. 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. 578972 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 578972

TRC Solutions, Inc, Midland, TX

Marathon 15 PA

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SC-1b	S	03-08-18 00:00		578972-001

CASE NARRATIVE

Client Name: TRC Solutions, Inc
Project Name: Marathon 15 PA

Project ID:
Work Order Number(s): *578972*

Report Date: *19-MAR-18*
Date Received: *03/09/2018*

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

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results
578972

TRC Solutions, Inc, Midland, TX
Marathon 15 PA

Sample Id: **SC-1b** Matrix: Soil Sample Depth:

Lab Sample Id: 578972-001 Date Collected: 03.08.18 00.00 Date Received: 03.09.18 16.40

Analytical Method: Reactive Cyanide by SW 846-Section7.3.3 Prep Method: SW9012P

Analyst: KCS % Moist: Tech: KCS

Seq Number: 3043851 Date Prep: 03.15.18 12.00

Subcontractor: SUB: TX104704215-18-24 Prep seq: 7640892

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Cyanide +	57-12-5	<0.0117	0.0250	0.0117	mg/kg	03.15.18 16:58	U	1

Analytical Method: Flash Point (CC) SW-846 1010 Prep Method:

Analyst: DHE % Moist: Tech: DHE

Seq Number: 3043979 Date Prep:

Subcontractor: SUB: TX104704215-18-24 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Flash Point		>180			Deg F	03.16.18 11:00	U	1

Analytical Method: Reactive Sulfide by SW9034 Prep Method:

Analyst: DHE % Moist: Tech: DHE

Seq Number: 3043857 Date Prep:

Subcontractor: SUB: TX104704215-18-24 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Reactive Sulfide	18496-25-8	<0.500	25.0	0.500	mg/kg	03.15.18 16:30	U	1

Analytical Method: Soil pH by SW-846 9045C Prep Method:

Analyst: MJP % Moist: Tech: MJP

Seq Number: 3043693 Date Prep:

Subcontractor: SUB: TX104704215-18-24 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
pH	12408-02-5	**8.25**			SU	03.14.18 09:00		

Certificate of Analytical Results
578972

TRC Solutions, Inc, Midland, TX
Marathon 15 PA

Sample Id: **3043857-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 3043857-1-BLK Date Collected: Date Received:

Analytical Method: Reactive Sulfide by SW9034 Prep Method:

Analyst: DHE % Moist: Tech: DHE

Seq Number: 3043857 Date Prep:

Subcontractor: SUB: TX104704215-18-24 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Reactive Sulfide	18496-25-8	<0.500	25.0	0.500	mg/kg	03.15.18 16:30	U	1

Sample Id: **7640892-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7640892-1-BLK Date Collected: Date Received:

Analytical Method: Reactive Cyanide by SW 846-Section7.3.3 Prep Method: SW9012P

Analyst: KCS % Moist: Tech: KCS

Seq Number: 3043851 Date Prep: 03.15.18 12.00

Subcontractor: SUB: TX104704215-18-24 Prep seq: 7640892

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Cyanide +	57-12-5	<0.0117	0.0250	0.0117	mg/kg	03.15.18 16:51	U	1

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

BS / BSD Recoveries

Project Name: Marathon 15 PA

Work Order #: 578972 **Project ID:**

Analyst: KCS **Date Prepared:** 03/15/2018 **Date Analyzed:** 03/15/2018

Lab Batch ID: 3043851 **Sample:** 7640892-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Reactive Cyanide by SW 846-Section7.3.3 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
Cyanide	<0.0583	20.0	2.51	13	20.0	2.53	13	1	5-40	20	

Analyst: DHE **Date Prepared:** 03/15/2018 **Date Analyzed:** 03/15/2018

Lab Batch ID: 3043857 **Sample:** 3043857-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Reactive Sulfide by SW9034 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
Reactive Sulfide	<0.500	50.0	48.0	96	50.0	48.0	96	0	30-120	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

Sample Duplicate Recovery

Project Name: Marathon 15 PA

Work Order #: 578972

Lab Batch #: 3043979 **Project ID:**
Date Analyzed: 03/16/2018 09:00 **Date Prepared:** 03/16/2018 **Analyst:** DHE
QC- Sample ID: 578783-001 D **Batch #:** 1 **Matrix:** Sludge
Reporting Units: Deg F

Flash Point (CC) SW-846 1010 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Flash Point	>180	>180	0	25	U

Lab Batch #: 3043979
Date Analyzed: 03/16/2018 15:40 **Date Prepared:** 03/16/2018 **Analyst:** DHE
QC- Sample ID: 579202-001 D **Batch #:** 1 **Matrix:** Solid
Reporting Units: Deg F

Flash Point (CC) SW-846 1010 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Flash Point	>180	>180	0	25	U

Lab Batch #: 3043851
Date Analyzed: 03/15/2018 16:56 **Date Prepared:** 03/15/2018 **Analyst:** KCS
QC- Sample ID: 578840-001 D **Batch #:** 1 **Matrix:** Solid
Reporting Units: mg/kg

Reactive Cyanide by SW 846-Section7.3.3 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Cyanide	<0.0117	<0.0117	0	20	U

Lab Batch #: 3043857
Date Analyzed: 03/15/2018 16:30 **Date Prepared:** 03/15/2018 **Analyst:** DHE
QC- Sample ID: 578840-001 D **Batch #:** 1 **Matrix:** Solid
Reporting Units: mg/kg

Reactive Sulfide by SW9034 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Reactive Sulfide	<0.500	<0.500	0	20	U

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Sample Duplicate Recovery

Project Name: Marathon 15 PA

Work Order #: 578972

Lab Batch #: 3043693 **Project ID:**

Date Analyzed: 03/14/2018 09:00 **Date Prepared:** 03/14/2018 **Analyst:** MJP

QC- Sample ID: 578859-019 D **Batch #:** 1 **Matrix:** Product

Reporting Units: SU

Soil pH by SW-846 9045C	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
pH	6.68	6.67	0	20	

Lab Batch #: 3043693

Date Analyzed: 03/14/2018 09:00 **Date Prepared:** 03/14/2018 **Analyst:** MJP

QC- Sample ID: 578706-001 D **Batch #:** 2 **Matrix:** Soil

Reporting Units: SU

Soil pH by SW-846 9045C	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
pH	8.81	8.82	0	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES
Setting the Standard since 1990

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

Xenco Job # 578972

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 10 Desta Drive Suite 150E, Midland, TX 79701
Email: jlowry@trcsolutions.com
Phone No: 432-466-4450
Project Contact: Joel Lowry
Samplers's Name Joel Lowry

Project Information

Project Name/Number: Marathon 15 PA
Project Location: Lea Co, NM
Invoice To: Plains Pipeline, LP 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	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	RCI	Field Comments
1	WC-1b	NA	3/8/2017		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
zconder@trcsolutions.com

FED-EX / UPS: Tracking #

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

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		3/9/18 4:40	1	2	3/9/18 4:40	2 3/9/18 4:40
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 be liabl 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 receive be enforced unless previously negotiated under a fully executed client contract.

Temp: .5 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: .3

Final 1.000

Inter-Office Shipment

IOS Number **1057431**

Date/Time: 03/12/18 16:22
Lab# From: **Midland**
Lab# To: **Houston**

Created by: Katie Lowe
Delivery Priority:
Air Bill No.: 780007232572

Please send report to: Kelsey Brooks
Address: 1211 W. Florida Ave, Midland TX 79701
Phone:
E-Mail: kelsey.brooks@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
578972-001	S	SC-1b	03/08/18 00:00	SW1010	Flash Point (CC) SW-846 1010	03/15/18	04/07/18	KEB	FLASHPT	
578972-001	S	SC-1b	03/08/18 00:00	SW9012_RCI	Reactive Cyanide by SW 846-Section7.3.3	03/15/18	03/22/18	KEB	CN	
578972-001	S	SC-1b	03/08/18 00:00	SW9034_RCI	Reactive Sulfide by SW9034	03/15/18	03/22/18	KEB	RS	
578972-001	S	SC-1b	03/08/18 00:00	SW9045C	Soil pH by SW-846 9045C	03/15/18	04/05/18	KEB		

Inter Office Shipment or Sample Comments:

Relinquished By 
Katie Lowe

Date Relinquished: 03/12/2018

Received By: 
Jean Quila

Date Received: 03/13/2018 09:30

Cooler Temperature: 1.3

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 1057431

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : hou068

Sent By: Katie Lowe **Date Sent:** 03/12/2018 04:22 PM

Received By: Jean Quila **Date Received:** 03/13/2018 09:30 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.3	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 *Custody Seals Signed and dated for Containers/coolers	**No**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 03/13/2018

Jean Quila

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 03/09/2018 04:40:00 PM

Work Order #: 578972

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 03/12/2018

Checklist reviewed by: Kelsey Brooks Date: 03/13/2018

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: _____

Address: _____

Phone #: _____

Originating Localtion of waste material:

Lease Name: _____

Sec._____ T_____ R_____

Transporter Information:

Name: _____

Address: _____

Phone #: _____

Driver Signature: _____

Date: _____

Non-Hazardous Hydro-Carbons:

of Yards: _____

Waste material placed in cell number: _____

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:

Danny Berry
(575) 393-6964 - Home
(575) 369-5266 - Cell

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are: generated from oil and gas exploration and production operations, exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C Regulations: and not mixed with non-exempt waste."

Facility Representative: _____ Date: _____

NOTE TO ALL DRIVERS!

TCP#8239 White- ORIGINAL • Yellow - INVOICE • PINK - DRIVER

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: _____

Address: _____

Phone #: _____

Originating Localtion of waste material:

Lease Name: _____

Sec. _____ T _____ R _____

Transporter Information:

Name: _____

Address: _____

Phone #: _____

Driver Signature: _____

Date: _____

Non-Hazardous Hydro-Carbons:

of Yards: _____

Waste material placed in cell number: _____

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:

Danny Berry
(575) 393-6964 - Home
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"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are: generated from oil and gas exploration and production operations, exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C Regulations: and not mixed with non-exempt waste."

Facility Representative: _____ Date: _____

NOTE TO ALL DRIVERS!

TCP#8239 White- ORIGINAL • Yellow - INVOICE • PINK - DRIVER

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 Mewbourne Marathon 15 PA	Facility Type Tank Battery

Surface Owner Kenneth Smith	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	15	20S	34E					Lea

Latitude 32.56721 **Longitude** -103.540506 NAD83

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 30 bbls	Volume Recovered 2 bbls
Source of Release ½ inch valve	Date and Hour of Occurrence 2/1/2018 @ 1:01 PM	Date and Hour of Discovery 2/1/2018 @ 1:01 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Voicemail to Olivia Yu	
By Whom? Amber Groves	Date and Hour 2/1/2018 @ 3:47 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
½" valve on top of a tee with a test port with 3/8" tubing running to the sump box was tampered with and forced open.

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

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

Signature: Amber Groves	OIL CONSERVATION DIVISION	
Printed Name: Amber Groves	Approved by Environmental Specialist:	
Title: Remediation Coordinator	Approval Date:	Expiration Date:
E-mail Address: algroves@paalp.com	Conditions of Approval:	Attached ☐
Date: Phone:		

* Attach Additional Sheets If Necessary