



Previously Remediated

NSW #1 @ 1'

N. Floor @ 3'

N. AST @ Surf.
N. AST @ 2'

W. Floor @ 30"

WSW #1 @ 1'

W. AST @ Surf.
W. AST @ 18"

E. AST @ Surf.

ESW #1 @ 1'

E. Floor @ 2'

S. AST @ Surf.
S. AST @ 3'

S. Floor @ 4'

SSW #1 @ 1'

2' bgs

3' bgs

East RP @ Surf.
RP @ 18"

Currently Excavated

	Previously Remediated
	Currently Excavated
	Affected Area
	Sample Location

Project No.	AR157446
Scale:	1"=25'
Source:	GoogleEarth
Date:	2014

Terracon
Consulting Engineers & Scientists

5827 50th St. Suite 1 Lubbock, Texas 79424
Phone (806) 300-0140 Fax (806) 797-0947

Figure 2 – Site and Sample Location Map

Lovington Station Tank
Plains SRS No. 2015-162
32.73427° N, -1013.35266 ° W
Lea County, New Mexico



Table 1
Confirmation Soil Sample Analytical Results

Sample ID	Depth	Date	Sample Type	Soil Status	TPH				Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
					C ₆ -C ₁₂ (mg/kg)	C ₁₂ -C ₂₈ (mg/kg)	C ₂₈ -C ₃₅ (mg/kg)	C ₆ -C ₃₅ (mg/kg)						
WSW #1 @ 1'	1'	8/14/15	Grab	In-Situ	<29.1	<29.1	<29.1	<29.1	<0.00116	<0.00233	<0.00116	<0.00233	<0.00233	-
W. Floor @ 30"	1.5'	8/14/15	Grab	In-Situ	<29.1	128	<29.1	128	<0.00116	<0.00233	<0.00116	<0.00233	<0.00233	6.49
W. AST @ Surf.	Surface	8/14/15	Grab	In-Situ	<28.7	<28.7	<28.7	<28.7	<0.00115	<0.00230	<0.00115	<0.00230	<0.00230	-
W. AST @ 18"	1.5'	8/14/15	Grab	In-Situ	<29.8	<29.8	<29.8	<29.8	-	-	-	-	-	-
NSW #1 @ 1'	1'	8/14/15	Grab	In-Situ	<28.4	<28.4	<28.4	<28.4	<0.00114	<0.00227	<0.00114	<0.00227	<0.00227	-
N. Floor @ 3'	3'	8/14/15	Grab	In-Situ	<27.8	48.0	<27.8	48.0	<0.00111	<0.00222	<0.00111	<0.00222	<0.00222	5.73
N. AST @ Surf.	Surface	8/14/15	Grab	In-Situ	<28.1	<28.1	<28.1	<28.1	<0.00112	<0.00225	<0.00112	<0.00225	<0.00225	-
N. AST @ 2'	2'	8/14/15	Grab	In-Situ	<29.4	41.2	<29.4	41.2	-	-	-	-	-	-
SSW #1 @ 1'	1'	8/14/15	Grab	In-Situ	<28.7	169	30.4	199	<0.00115	<0.00230	<0.00115	<0.00230	<0.00230	-
S. Floor @ 4'	4'	8/14/15	Grab	In-Situ	<25.8	52.3	<25.8	52.3	<0.00103	<0.00206	<0.00103	<0.00206	<0.00206	4.66
S. AST @ Surf.	Surface	8/14/15	Grab	In-Situ	<29.1	217	47.5	264	<0.00116	<0.00233	<0.00116	<0.00233	<0.00233	-
S. AST @ 3'	3'	8/14/15	Grab	In-Situ	<27.8	<27.8	<27.8	<27.8	-	-	-	-	-	-
ESW #1 @ 1'	1'	9/2/15	Grab	In-Situ	<29.1	188	50.6	238	<0.00116	<0.0023	<0.00116	<0.0023	<0.0023	-
E. Floor @ 2'	2'	9/2/15	Grab	In-Situ	<28.7	<28.7	<28.7	<28.7	<0.00115	<0.00230	<0.00115	<0.00230	<0.00230	11.1
E. AST @ Surf.	Surface	9/2/15	Grab	In-Situ	88.5	538	79.0	706	<0.00122	<0.00244	<0.00122	0.00601	0.00601	-
East RP @ Surf.	Surface	9/2/15	Grab	In-Situ	1,680	13,700	1,600	16,900	0.00501	0.0552	0.0562	0.3041	0.4205	-
RP @ 18"	1.5'	9/2/15	Grab	In-Situ	<30.9	<30.9	<30.9	<30.9	0.00342	0.00410	0.00198	0.0144	0.0239	-
New Mexico Oil Conservation Division Regulatory Standard								1,000	10					250*

1. TPH = Total petroleum hydrocarbons analyzed by EPA Method SW-846 8015M.

2. BTEX = BTEX analyzed by EPA Method SW-846 8021b.

3. Chlorides = Chlorides analyzed by EPA Method E 300.

- = Soil sample not analyzed for that constituent.

< = Constituent not detected above the indicated laboratory reporting limit (RL).

* = Remediation Action Levels for chloride are not currently specified in the New Mexico Administrative Code and are set by the NMOCD on a site-specific basis.

Bold denotes concentrations that exceeds NMOCD Regulatory Standards

**PERMIAN BASIN
ENVIRONMENTAL LAB, LP
10014 SCR 1213
Midland, TX 79706**



Analytical Report

Prepared for:

Joel Lowry
Terracon Consulting, Inc.
10400 State Highway 191
Midland, TX 79707

Project: Lovington Station Tank
Project Number: AR157446
Location: New Mexico
Lab Order Number: 5I04001



NELAP/TCEQ # T104704156-13-3

Report Date: 09/18/15

Terracon Consulting, Inc.
10400 State Highway 191
Midland TX, 79707

Project: Lovington Station Tank
Project Number: AR157446
Project Manager: Joel Lowry

Fax: (432) 684-9608

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E. AST @ Surface	5104001-01	Soil	09/02/15 16:00	09-03-2015 17:55
E. Floor @ 2'	5104001-02	Soil	09/02/15 16:05	09-03-2015 17:55
ESW # 1 @ 1'	5104001-03	Soil	09/02/15 16:10	09-03-2015 17:55
RP @ 18"	5104001-04	Soil	09/02/15 16:15	09-03-2015 17:55
East RP @ Surface	5104001-05	Soil	09/02/15 16:20	09-03-2015 17:55

E. AST @ Surface
5I04001-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00122	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Toluene	ND	0.00244	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Ethylbenzene	ND	0.00122	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Xylene (p/m)	0.00601	0.00244	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Xylene (o)	ND	0.00122	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		132 %	75-125		P511502	09/09/15	09/09/15	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		108 %	75-125		P511502	09/09/15	09/09/15	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	18.0	0.1	%	1	P510801	09/08/15	09/08/15	% calculation	
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	88.5	30.5	mg/kg dry	1	P511003	09/08/15	09/08/15	TPH 8015M	
>C12-C28	538	30.5	mg/kg dry	1	P511003	09/08/15	09/08/15	TPH 8015M	
>C28-C35	79.0	30.5	mg/kg dry	1	P511003	09/08/15	09/08/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		107 %	70-130		P511003	09/08/15	09/08/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		127 %	70-130		P511003	09/08/15	09/08/15	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	706	30.5	mg/kg dry	1	[CALC]	09/08/15	09/08/15	calc	

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10400 State Highway 191
Midland TX, 79707

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Project Manager: Joel Lowry

Fax: (432) 684-9608

E. Floor @ 2'
5104001-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00115	mg/kg dry	1	P511102	09/08/15	09/08/15	EPA 8021B	
Toluene	ND	0.00230	mg/kg dry	1	P511102	09/08/15	09/08/15	EPA 8021B	
Ethylbenzene	ND	0.00115	mg/kg dry	1	P511102	09/08/15	09/08/15	EPA 8021B	
Xylene (p/m)	ND	0.00230	mg/kg dry	1	P511102	09/08/15	09/08/15	EPA 8021B	
Xylene (o)	ND	0.00115	mg/kg dry	1	P511102	09/08/15	09/08/15	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-125		P511102	09/08/15	09/08/15	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		123 %	75-125		P511102	09/08/15	09/08/15	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

Chloride	11.1	1.15	mg/kg dry	1	P511705	09/15/15	09/17/15	EPA 300.0	
% Moisture	13.0	0.1	%	1	P510801	09/08/15	09/08/15	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.7	mg/kg dry	1	P511003	09/08/15	09/08/15	TPH 8015M	
>C12-C28	ND	28.7	mg/kg dry	1	P511003	09/08/15	09/08/15	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P511003	09/08/15	09/08/15	TPH 8015M	
Surrogate: 1-Chlorooctane		102 %	70-130		P511003	09/08/15	09/08/15	TPH 8015M	
Surrogate: o-Terphenyl		126 %	70-130		P511003	09/08/15	09/08/15	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.7	mg/kg dry	1	[CALC]	09/08/15	09/08/15	calc	

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 10400 State Highway 191
 Midland TX, 79707

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ESW # 1 @ 1'
5104001-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00116	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Toluene	ND	0.00233	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Ethylbenzene	ND	0.00116	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Xylene (p/m)	ND	0.00233	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Xylene (o)	ND	0.00116	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		114 %	75-125		P511502	09/09/15	09/09/15	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		123 %	75-125		P511502	09/09/15	09/09/15	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	14.0	0.1	%	1	P510801	09/08/15	09/08/15	% calculation	
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	29.1	mg/kg dry	1	P511004	09/08/15	09/10/15	TPH 8015M	
>C12-C28	188	29.1	mg/kg dry	1	P511004	09/08/15	09/10/15	TPH 8015M	
>C28-C35	50.6	29.1	mg/kg dry	1	P511004	09/08/15	09/10/15	TPH 8015M	
Surrogate: 1-Chlorooctane		113 %	70-130		P511004	09/08/15	09/10/15	TPH 8015M	
Surrogate: o-Terphenyl		143 %	70-130		P511004	09/08/15	09/10/15	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	238	29.1	mg/kg dry	1	[CALC]	09/08/15	09/10/15	calc	

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RP @ 18"
5104001-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	0.00342	0.00123	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Toluene	0.00410	0.00247	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Ethylbenzene	0.00198	0.00123	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Xylene (p/m)	0.0144	0.00247	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Xylene (o)	ND	0.00123	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		97.1 %	75-125		P511502	09/09/15	09/09/15	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		121 %	75-125		P511502	09/09/15	09/09/15	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	19.0	0.1	%	1	P510801	09/08/15	09/08/15	% calculation	
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	30.9	mg/kg dry	1	P511004	09/08/15	09/09/15	TPH 8015M	
>C12-C28	ND	30.9	mg/kg dry	1	P511004	09/08/15	09/09/15	TPH 8015M	
>C28-C35	ND	30.9	mg/kg dry	1	P511004	09/08/15	09/09/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		100 %	70-130		P511004	09/08/15	09/09/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		135 %	70-130		P511004	09/08/15	09/09/15	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	30.9	mg/kg dry	1	[CALC]	09/08/15	09/09/15	calc	

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East RP @ Surface
5104001-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	0.00501	0.00122	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Toluene	0.0552	0.00244	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Ethylbenzene	0.0562	0.00122	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Xylene (p/m)	0.225	0.00244	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
Xylene (o)	0.0791	0.00122	mg/kg dry	1	P511502	09/09/15	09/09/15	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		98.0 %		75-125	P511502	09/09/15	09/09/15	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		90.6 %		75-125	P511502	09/09/15	09/09/15	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	8.0	0.1	%	1	P510801	09/08/15	09/08/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	1680	152	mg/kg dry	5	P511004	09/08/15	09/09/15	TPH 8015M	
>C12-C28	13700	152	mg/kg dry	5	P511004	09/08/15	09/09/15	TPH 8015M	
>C28-C35	1600	152	mg/kg dry	5	P511004	09/08/15	09/09/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		99.5 %		70-130	P511004	09/08/15	09/09/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		174 %		70-130	P511004	09/08/15	09/09/15	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	16900	152	mg/kg dry	5	[CALC]	09/08/15	09/09/15	calc	

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P5I1102 - General Preparation (GC)

Blank (P5I1102-BLK1) Prepared & Analyzed: 09/08/15										
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.0520		"	0.0500		104	75-125			
Surrogate: 4-Bromofluorobenzene	0.0654		"	0.0500		131	75-125			S-GC

LCS (P5I1102-BS1) Prepared & Analyzed: 09/08/15										
Benzene	0.0721	0.00100	mg/kg wet	0.0900		80.1	70-130			
Toluene	0.0966	0.00200	"	0.0900		107	70-130			
Ethylbenzene	0.113	0.00100	"	0.0900		126	70-130			
Xylene (p/m)	0.220	0.00200	"	0.180		122	70-130			
Xylene (o)	0.108	0.00100	"	0.0900		120	70-130			
Surrogate: 1,4-Difluorobenzene	0.0581		"	0.0500		116	75-125			
Surrogate: 4-Bromofluorobenzene	0.0638		"	0.0500		128	75-125			S-GC

LCS Dup (P5I1102-BSD1) Prepared & Analyzed: 09/08/15										
Benzene	0.0726	0.00100	mg/kg wet	0.0900		80.6	70-130	0.622	20	
Toluene	0.0998	0.00200	"	0.0900		111	70-130	3.29	20	
Ethylbenzene	0.116	0.00100	"	0.0900		129	70-130	2.56	20	
Xylene (p/m)	0.221	0.00200	"	0.180		123	70-130	0.250	20	
Xylene (o)	0.111	0.00100	"	0.0900		124	70-130	3.12	20	
Surrogate: 1,4-Difluorobenzene	0.0595		"	0.0500		119	75-125			
Surrogate: 4-Bromofluorobenzene	0.0661		"	0.0500		132	75-125			S-GC

Batch P5I1502 - General Preparation (GC)

Blank (P5I1502-BLK1) Prepared & Analyzed: 09/09/15										
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.0648		"	0.0500		130	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0539		"	0.0500		108	75-125			

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Fax: (432) 684-9608

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P5I1502 - General Preparation (GC)

LCS (P5I1502-BS1)										
Prepared & Analyzed: 09/09/15										
Benzene	0.0808	0.00100	mg/kg wet	0.100		80.8	70-130			
Toluene	0.109	0.00200	"	0.100		109	70-130			
Ethylbenzene	0.110	0.00100	"	0.100		110	70-130			
Xylene (p/m)	0.232	0.00200	"	0.200		116	70-130			
Xylene (o)	0.122	0.00100	"	0.100		122	70-130			
Surrogate: 1,4-Difluorobenzene	0.0610		"	0.0500		122	75-125			
Surrogate: 4-Bromofluorobenzene	0.0701		"	0.0500		140	75-125			S-GC

LCS Dup (P5I1502-BSD1)										
Prepared & Analyzed: 09/09/15										
Benzene	0.0803	0.00100	mg/kg wet	0.100		80.3	70-130	0.670	20	
Toluene	0.110	0.00200	"	0.100		110	70-130	0.942	20	
Ethylbenzene	0.111	0.00100	"	0.100		111	70-130	1.20	20	
Xylene (p/m)	0.227	0.00200	"	0.200		113	70-130	2.46	20	
Xylene (o)	0.120	0.00100	"	0.100		120	70-130	0.984	20	
Surrogate: 4-Bromofluorobenzene	0.0712		"	0.0500		142	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0619		"	0.0500		124	75-125			

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5I0801 - % Solids										
Blank (P5I0801-BLK1) Prepared & Analyzed: 09/08/15										
% Moisture	ND	0.1	%							
Duplicate (P5I0801-DUP1) Source: 5I03011-01 Prepared & Analyzed: 09/08/15										
% Moisture	ND	0.1	%		0.0				20	
Duplicate (P5I0801-DUP2) Source: 5I04001-01 Prepared & Analyzed: 09/08/15										
% Moisture	17.0	0.1	%		18.0			5.71	20	
Batch P5I1705 - *** DEFAULT PREP ***										
Blank (P5I1705-BLK1) Prepared: 09/15/15 Analyzed: 09/17/15										
Chloride	ND	1.00	mg/kg wet							
LCS (P5I1705-BS1) Prepared: 09/15/15 Analyzed: 09/17/15										
Chloride	98.5	1.00	mg/kg wet	100		98.5	80-120			
LCS Dup (P5I1705-BSD1) Prepared: 09/15/15 Analyzed: 09/17/15										
Chloride	99.3	1.00	mg/kg wet	100		99.3	80-120	0.809	20	
Duplicate (P5I1705-DUP1) Source: 5I09001-41 Prepared: 09/15/15 Analyzed: 09/17/15										
Chloride	1.80	1.08	mg/kg dry		1.52			16.9	20	
Duplicate (P5I1705-DUP2) Source: 5I11001-05 Prepared: 09/15/15 Analyzed: 09/17/15										
Chloride	ND	1.09	mg/kg dry		ND				20	
Matrix Spike (P5I1705-MS2) Source: 5I09001-41 Prepared: 09/15/15 Analyzed: 09/17/15										
Chloride	112	1.08	mg/kg dry	134	1.52	81.9	80-120			

Terracon Consulting, Inc.
10400 State Highway 191
Midland TX, 79707

Project: Lovington Station Tank
Project Number: AR157446
Project Manager: Joel Lowry

Fax: (432) 684-9608

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P5I1003 - TX 1005

Blank (P5I1003-BLK1)

Prepared & Analyzed: 09/08/15

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	116		"	100		116	70-130			
Surrogate: o-Terphenyl	72.6		"	50.0		145	70-130			S-GC

LCS (P5I1003-BS1)

Prepared & Analyzed: 09/08/15

C6-C12	952	25.0	mg/kg wet	1000		95.2	75-125			
>C12-C28	968	25.0	"	1000		96.8	75-125			
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	67.3		"	50.0		135	70-130			S-GC

LCS Dup (P5I1003-BSD1)

Prepared & Analyzed: 09/08/15

C6-C12	924	25.0	mg/kg wet	1000		92.4	75-125	2.98	20	
>C12-C28	955	25.0	"	1000		95.5	75-125	1.31	20	
Surrogate: 1-Chlorooctane	108		"	100		108	70-130			
Surrogate: o-Terphenyl	72.2		"	50.0		144	70-130			S-GC

Matrix Spike (P5I1003-MS1)

Source: 5I03012-01

Prepared & Analyzed: 09/08/15

C6-C12	970	28.7	mg/kg dry	1150	ND	84.4	75-125			
>C12-C28	1070	28.7	"	1150	34.3	90.4	75-125			
Surrogate: 1-Chlorooctane	118		"	115		103	70-130			
Surrogate: o-Terphenyl	73.7		"	57.5		128	70-130			

Matrix Spike Dup (P5I1003-MSD1)

Source: 5I03012-01

Prepared & Analyzed: 09/08/15

C6-C12	953	28.7	mg/kg dry	1150	ND	82.9	75-125	1.70	20	
>C12-C28	1030	28.7	"	1150	34.3	87.1	75-125	3.78	20	
Surrogate: 1-Chlorooctane	118		"	115		103	70-130			
Surrogate: o-Terphenyl	71.8		"	57.5		125	70-130			

Terracon Consulting, Inc.
10400 State Highway 191
Midland TX, 79707

Project: Lovington Station Tank
Project Number: AR157446
Project Manager: Joel Lowry

Fax: (432) 684-9608

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5I1004 - TX 1005										
Blank (P5I1004-BLK1)										
Prepared & Analyzed: 09/08/15										
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	124		"	100		124	70-130			
Surrogate: o-Terphenyl	78.8		"	50.0		158	70-130			S-GC
LCS (P5I1004-BS1)										
Prepared & Analyzed: 09/08/15										
C6-C12	911	25.0	mg/kg wet	1000		91.1	75-125			
>C12-C28	1000	25.0	"	1000		100	75-125			
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	67.9		"	50.0		136	70-130			S-GC
LCS Dup (P5I1004-BSD1)										
Prepared & Analyzed: 09/08/15										
C6-C12	912	25.0	mg/kg wet	1000		91.2	75-125	0.128	20	
>C12-C28	1000	25.0	"	1000		100	75-125	0.0240	20	
Surrogate: 1-Chlorooctane	110		"	100		110	70-130			
Surrogate: o-Terphenyl	67.8		"	50.0		136	70-130			S-GC
Matrix Spike (P5I1004-MS1)										
Source: 5I08011-01 Prepared: 09/08/15 Analyzed: 09/09/15										
C6-C12	933	27.2	mg/kg dry	1090	ND	85.8	75-125			
>C12-C28	1160	27.2	"	1090	593	51.9	75-125			
Surrogate: 1-Chlorooctane	119		"	109		109	70-130			
Surrogate: o-Terphenyl	72.8		"	54.3		134	70-130			S-GC
Matrix Spike Dup (P5I1004-MSD1)										
Source: 5I08011-01 Prepared: 09/08/15 Analyzed: 09/09/15										
C6-C12	951	27.2	mg/kg dry	1090	ND	87.5	75-125	1.92	20	
>C12-C28	1180	27.2	"	1090	593	53.8	75-125	3.53	20	
Surrogate: 1-Chlorooctane	122		"	109		112	70-130			
Surrogate: o-Terphenyl	74.9		"	54.3		138	70-130			S-GC

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By:  Date: 9/18/2015

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

5I 04001

TERRACON

CHAIN OF CUSTODY RECORD

Laboratory: Permian Basin Environmental Lab
 Address: 10014 S County Road 1213, Midland, TX 79706

Office Location: Lubbock

Phone: _____

Project Manager: Joel Lowry

Contact: Joel Lowry

Sampler's Name: Joel Lowry

PO/SO #: Plains

Sampler's Signature: *Joel Lowry*

Project Number: AR 157446

Project Name: Lovington Station Tank

No. Type of Containers: _____

ANALYSIS REQUESTED

TPH 2015
 OI E360
 BTEX 8021

LAB USE ONLY
 DUE DATE:

TEMP OF COOLER WHEN RECEIVED (°C) 2.0

Page 1 of 1

5I04001
 Lab Sample ID

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No. Type of Containers
S	9/2/2015	16:00	X	X	E. AST @ Surface			1
S	9/2/2015	16:05	X	X	E. Floor @ 2'			1
S	9/2/2015	16:10	X	X	ESW #1 @ 1'			1
S	9/2/2015	16:15	X	X	RP @ 18"			1
S	9/2/2015	16:20	X	X	East RP @ Surface			1

TURNAROUND TIME: Normal 48-Hour Rush 24-Hour Rush

TRRP Laboratory Review Checklist

Yes No

Relinquished by (Signature): *Joel Lowry*

Date: 9/3/15 Time: 17:55

Received by (Signature): _____

Date: 9/3/15 Time: 17:55

NOTES: Please Email Results to erin.loyd@terracon.com or joel.lowry@terracon.com

Matrix: WW-Wastewater W-Water S-Soil L-Liquid A-Air Bag C-Charcoal tube SL-Sludge
 Container: VOA - 40 ml Vial A/S - Amber Glass 1L 250 ml - Glass wide mouth P/O - Plastic or other

Lubbock Office ■ 5827 50th Street ■ Lubbock, Texas 79424 ■ 806-300-0140

Responsive ■ Resourceful ■ Reliable

From: [Lowry, Joel W](#)
To: [Jones, Kellie, EMNRD](#)
Cc: [Camille J Bryant](#)
Subject: Permission to Backfill -- Eastern Portion of Release Site -- Plains" Lovington Station Tank 1RP-3791-- Western Excavation
Date: Monday, September 21, 2015 9:16:43 AM
Attachments: [5104001 FINAL 09 18 15 1404.pdf](#)
[Update - Plain"s Lovington Station Tank - 1RP-3791.pdf](#)

Ms. Jones,

On behalf of Plains Pipeline, Terracon has prepared the attached *Updated Site and Sample Location Map* and *Soil Chemistry Table* for the Lovington Station Tank environmental remediation site (NMOCD Ref. No. 1RP-3791). The release site is located in UL "H", Sec. 21, Township 18 South, Range 36 East on land owned by the State of New Mexico. The GPS coordinates of the release site are 32.73427°, -103.35266°.

On August 28, 2015, upon receiving laboratory analytical results, Terracon requested NMOCD permission to backfill the Western Portion of the remediation site with non-impacted material. Upon receiving NMOCD permission, the western portion was backfilled, allowing environmental personnel to excavation affected soil on the east side of the above – ground storage tanks (ASTs).

The eastern portion of the release site has been excavated to a depth of approximately 2' to 3' bgs. Upon excavating the impacted soil from the eastern portion of the release site, confirmation soil samples were collected from the floor and sidewalls of the excavated area and submitted to the laboratory for analysis of TPH, BTEX and/or chloride. Laboratory analytical results indicate TPH concentrations ranged from less than the appropriate laboratory reporting limit for soil samples E. Floor @ 2' to 706 mg/kg for soil sample E. AST @ Surf. Benzene, toluene, ethylbenzene and total xylene (BTEX) concentrations were less than the appropriate laboratory reporting limit in each of the analyzed soil samples with the exception of soil sample E. AST @ Surf., which exhibited a total BTEX concentration of 0.00601 mg/kg; concentrations of benzene were less than the appropriate laboratory reporting limit. Soil sample E. Floor was also analyzed for concentrations of chloride, which were determined to be 11.1 mg/kg.

In addition, two (2) soil samples (East RP @ Surf. @ RP @ 18") were collected from beneath the release point on the east side of the southern AST to characterize affected soil left in-situ. Collected soil samples were submitted to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated TPH concentrations ranged from less than the laboratory reporting limit for soil sample RP @ 18" to 16,900 mg/kg for soil sample East RP @ Surf. BTEX concentrations ranged from 0.0239 mg/kg for soil sample RP @ 18" to 0.4205 mg/kg for soil sample East RP @ Surf. Excavated soil is stockpiled on-site, atop a 20-millimeter poly liner, pending final disposition.

Laboratory analytical results indicate TPH and BTEX concentrations were less than NMOCD Regulatory Remediation Action Levels in each of the submitted soil samples with the exception of soil sample East RP @ Surf., which exhibited a TPH concentration of 16,900 mg/kg. Based on the review of laboratory analytical results from confirmation soil samples, on behalf of Plains Pipeline,

Terracon requests permission to backfill the eastern portion of the remediation site with non-impacted material.

Upon backfilling the eastern portion of the remediation site, affected soil represented by soil sample East RP @ Surf. will be excavated by hand to the maximum extent practicable. Terracon maintains extensive excavation at the release point may compromise the integrity of the AST and pose a safety risk. With NMOCD permission, affected soil remaining in-situ beneath the eastern portion of the southern AST, represented by soil sample East RP @ Surf., will be remediated at time of abandonment (TOA).

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

Respectfully,

Joel W. Lowry
Project Geologist I | Environmental

Terracon

5827 50th Street, Suite 1 | Lubbock, Texas 79424
P (806) 300-0140 | C (432) 466-4450 | F (806) 797-0947
joel.lowry@terracon.com | terracon.com



From: Jones, Kellie, EMNRD [<mailto:Kellie.Jones@state.nm.us>]
Sent: Wednesday, August 26, 2015 8:20 AM
To: Lowry, Joel W
Cc: Camille J Bryant
Subject: RE: Permission to Backfill -- Plains' Lovington Station Tank 1RP-3791-- Western Excavation

Joel,

Permission to backfill the west side of the excavation.

If you have any questions, please feel free to contact me.

Kellie Jones
Environmental Specialist, District 1
Oil Conservation Division, EMNRD
575-393-6161 ext. 111
575-370-3180 (emergency-cell)
E-Mail: kellie.jones@state.nm.us

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

Please note:

-The OCD is no longer granting “risk-based,” or standard closure of events/RPs with remediation deferred to site abandonment/sale/closure. The RP will remain open until such time as historic contamination is addressed.

-Photographic documentation is stipulated for all events involving liquids.

If you have any questions or concerns, and for notification, please contact me.

From: Lowry, Joel W [<mailto:Joel.Lowry@terracon.com>]

Sent: Tuesday, August 25, 2015 9:56 AM

To: Jones, Kellie, EMNRD

Cc: Camille J Bryant

Subject: Permission to Backfill -- Plains' Lovington Station Tank 1RP-3791-- Western Excavation

Ms. Jones,

On behalf of Plains Pipeline, Terracon has prepared the attached *Site and Sample Location Map* and *Soil Chemistry Table* for the Lovington Station Tank environmental remediation site (NMOCD Ref. No. 1RP-3791). The release site is located in UL “H”, Sec. 21, Township 18 South, Range 36 East on land owned by the State of New Mexico. The GPS coordinates of the release site are 32.73427°, -103.35266°.

The western portion of the release site has been excavated to a depth of approximately 2.5’ to 4’ bgs. Upon excavating the impacted soil from the western portion of the release site, confirmation soil samples were collected from the floor and sidewalls of the excavated area and submitted to the laboratory for analysis of TPH, BTEX and/or chloride. Laboratory analytical results indicate TPH concentrations ranged from less than the appropriate laboratory reporting limit for soil samples WSW #1 @ 1’, W. AST @ Surf., W. AST @ 18”, NSW #1 @ 1’, N. AST @ Surf. and S. AST @ 3’ to 264 mg/kg for soil sample S. AST @ Surf. Benzene, toluene, ethylbenzene and total xylene (BTEX) concentrations were less than the appropriate laboratory reporting limit in each of the analyzed soil samples. Soil samples W. Floor @ 30”, N. Floor @ 3’ and S. Floor @ 4’ were also analyzed for concentrations of chloride, which were determine to be 6.49, 5.73, and 4.66 mg/kg, respectively. Excavated soil is stockpiled on-site, atop a 20-millimeter poly liner, pending final disposition.

Laboratory analytical results indicate TPH, BTEX and/or chloride concentrations are less than NMOCD Regulatory Remediation Action Levels in each of the analyzed soil samples. Based on the review of laboratory analytical results from confirmation soil samples, on behalf of Plains Pipeline, Terracon requests permission to backfill the western portion of the remediation site with non-

impacted material before excavating impacted soil from the eastern portion or the release site. Terracon maintains excavating all sides around the above ground storage tanks (ASTs) simultaneously may compromise the integrity of the tanks and pose a safety risk. If you have any questions or need any additional information, please feel free to contact myself or Camille Bryant by phone or email. Thanks.

Respectfully,

Joel W. Lowry
Project Geologist I | Environmental

Terracon

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joel.lowry@terracon.com | terracon.com



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