

2RP-3876
REMEDIATION PLAN
Nash Draw Tank Battery #9
Eddy County, New Mexico

LAI Project No. 16-0108-03

November 2, 2016

Prepared for:

XTO Energy, Inc.
500 W. Illinois Ave., Suite 100
Midland, Texas 79707

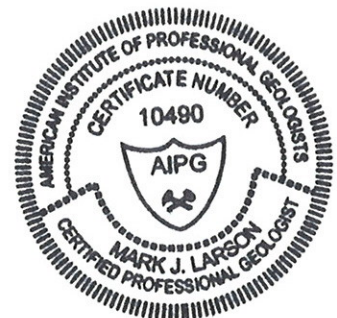
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1.0 INTRODUCTION

This document is prepared by Larson & Associates, Inc. (LAI) on behalf of XTO Energy, Inc. (XTO) for submittal to the New Mexico Oil Conservation Division (OCD) District 2 and U.S. Bureau of Land Management (BLM) to present the investigation results and remediation plan for contamination at the Nash Draw Unit tank battery #9 (Site). XTO consolidated production from several tank batteries into a three (3) tank batteries therefore the tank battery is no longer needed and is being remediated. Equipment was removed from the Site in early 2016 to allow for the soil investigation and remediation. On September 7, 2016, XTO submitted the initial C-141 to OCD District 2 and the Site was assigned remediation permit number 2RP-3876. The Site is located in Unit B (NW/4, NE/4), Section 13, Township 23 South, Range 29 East in Eddy County, New Mexico. The geodetic position is North 33.309722° and West -103.936944°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Setting

The setting is as follows:

- Elevation is approximately 3,000 feet above mean sea level (AMSL);
- Topography slopes west toward a playa lake (Salt Lake) located about 700 feet west of the Site;
- Surface geology is comprised of unconsolidated Holocene to mid- Pleistocene-age eolian and piedmont-slope deposits that are approximately 80 feet thick according to a log from a nearby well;
- The Triassic-age Chinle formation of the Dockum group underlies the unconsolidated deposits and is comprised of interbedded sand, clay, and mudstone;
- According to New Mexico Office of the State Engineer (NMOSE) records a well is located about 1.50 miles south in Unit J, Section 24, Township 23 South, Range 29 East, with groundwater reported at about 54 feet below ground surface (bgs).

1.2 Remediation Action Levels

Remediation action levels (RRAL) were calculated for benzene, BTEX and TPH based on the following criteria established by the New Mexico Oil Conservation Division (OCD) in "Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993":

Criteria	Result	Score
Depth-to-Groundwater	50 - 99 feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	200 - 1000 Horizontal Feet	10

The following RRAL apply to the release for ranking score: 20

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 100 mg/Kg

1.3 Investigation Soil Samples

Investigation soil samples were collected on June 21, 2016. LAI personnel used a Terraprobe® direct-push rig to collect soil samples at five (5) locations (DP-03-01 through DP-03-05) between ground surface and approximately four (4) feet bgs. A background sample (DP-03-BG) was collected at about 1 foot bgs about 70 feet west of the Site. Additional samples were collected with a backhoe (September 29, 2016) and air rotary rig with jam tube sampler (October 10, 2016) to define the vertical extent of impact. The samples were tested for headspace vapors with a calibrated photoionization detector (PID) and all were less than 100 parts per million (ppm). Permian Basin Environmental Lab (PBEL) located in Midland, Texas, analyzed the samples for total petroleum hydrocarbons (TPH) including gasoline (GRO), diesel (DRO) and oil (ORO) range organics by EPA SW-846 Method 8015 and chloride by method 300. The background sample was analyzed for chloride. Table 1 presents the investigation sample laboratory analytical data summary. Figure 3 presents a Site drawing and sample locations. Appendix A presents the laboratory reports.

Referring to Table 1, the RRAL for TPH was exceeded in samples from locations DP-03-01, DP-03-02, DP-03-04 and DP-03-05. Chloride was delineated below 250 milligrams per kilogram (mg/Kg) in boring DP-03-02 at 10 feet bgs (60.2 mg/Kg). The background chloride concentration is 59.4 mg/Kg.

2.0 REMEDIATION PLAN

XTO proposes to excavate soil from the area approximately 10 x 20 feet based on field observations, around DP-03-01 to approximately 5 feet bgs. Samples will be collected from the excavation sidewalls for laboratory analysis (BTEX and TPH) to determine if concentrations are below the RRAL. Additional soil will be removed as necessary to achieve the RRAL. The excavation will be filled to surface with clean soil.

Soil will be excavated from the area approximately 20 x 40 feet based on field observations, around DP-03-02 to about 8 feet bgs. Samples will be collected from the excavation sidewalls for laboratory analysis (BTEX and TPH) to determine if concentrations are below the RRAL. Additional soil will be removed as necessary to achieve the RRAL. The excavation will be filled to surface with clean soil.

Soil will be excavated from the area approximately 20 x 20 feet based on field observations, around DP-03-04 to about 2 feet bgs. Additional soil will be removed as necessary based on visual observations for hydrocarbon staining and odor. The excavation will be filled to surface with clean soil.

Soil will be excavated from the area approximately 20 x 40 feet based on field observations, around DP-03-05 to about 4 feet bgs. Samples will be collected from the excavation sidewalls for laboratory analysis (BTEX and TPH) to determine if concentrations are below the RRAL. Additional soil will be removed as necessary to achieve the RRAL. The excavation will be filled to surface with clean soil.

Contaminated soil will be disposed at and clean soil acquired from Lea Land Landfill, LLC. The surface will be restored to BLM requirements following remediation. A final report will be submitted to OCD District 2 and BLM upon completion of remediation. Figure 4 presents the approximate locations for the remediation areas. Appendix B presents the initial C-141.

Tables

Table 1

2RP-3876

Investigation Soil Sample Analytical Data Summary

XTO Energy, Inc., Nash Draw Tank Battery 9

Unit B (NW/4, NE/4), Section 13, Township 23 South, Range 29 East

Eddy County, New Mexico

N32.309722° W-103.9366944°

Location	Depth (Feet)	Collection Date	Status	C6 - C12 (mg/Kg)	>C12 - C28 (mg/Kg)	>C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
OCD RRAL: 100								
DP-03 -BG	0 - 1	6/21/2016	In-Situ	<26.0	<26.0	<26.0	<26.0	59.4
DP-03-01	0 - 1	6/21/2016	In-Situ	390	3,670	1,130	5,190	63.9
	1 - 2	6/21/2016	In-Situ	--	--	--	--	--
	2 - 3	6/21/2016	In-Situ	876	10,200	1,440	12,516	330
	3 - 4	6/21/2016	In-Situ	1,080	10,500	1,370	12,950	104
	6	9/29/2016	In-Situ	<29.1	80.0	<29.1	80.0	--
	10	9/29/2016	In-Situ	<27.5	137	41.5	178.5	--
	14	9/29/2016	In-Situ	<27.2	68.8	<27.2	68.8	--
DP-03-02	0 - 1	6/21/2016	In-Situ	641	12,800	2,250	15,691	608
	1 - 2	6/21/2016	In-Situ	921	17,600	2,250	20,771	1,590
	2 - 3	6/21/2016	In-Situ	274	7,390	1,290	8,954	1,690
	3 - 4	6/21/2016	In-Situ	403	11,500	1,450	13,300	715
	6	9/29/2016	In-Situ	381	5,620	776	6,770	1,110
	7	9/29/2016	In-Situ	160	1,790	320	2,270	760
	10	10/19/2016	In-Situ	<26.6	<26.6	<26.6	<26.6	60.2
	15	10/19/2016	In-Situ	<26.3	<26.3	<26.3	<26.3	158
	20	10/19/2016	In-Situ	--	--	--	--	--
DP-03-03	0 - 1	6/21/2016	In-Situ	<28.1	379	107	486	53.7

Table 1

2RP-3876

Investigation Soil Sample Analytical Data Summary

XTO Energy, Inc., Nash Draw Tank Battery 9

Unit B (NW/4, NE/4), Section 13, Township 23 South, Range 29 East

Eddy County, New Mexico

N32.309722° W-103.9366944°

Location	Depth (Feet)	Collection Date	Status	C6 - C12 (mg/Kg)	>C12 - C28 (mg/Kg)	>C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
OCD RRAL: 100								
DP-03-04	1 - 2	6/21/2016	In-Situ	--	--	--	--	--
	2 - 3	6/21/2016	In-Situ	--	--	--	--	--
	0 - 1	6/21/2016	In-Situ	<139	3,750	857	4,607	1,680
DP-03-05	1 - 2	6/21/2016	In-Situ	<31.6	134	41.9	175.9	275
	2 - 3	6/21/2016	In-Situ	<26.9	27.9	<26.9	27.9	--
	0 - 1	6/21/2016	In-Situ	1,430	19,300	3,500	24,230	6,170
	1 - 2	6/21/2016	In-Situ	45.3	3,800	583	4,428.30	1,170
	2 - 3	6/21/2016	In-Situ	35.0	2,000	280	2,310	574
DP-03-06	4	9/29/2016	In-Situ	<28.7	71.7	<28.7	71.7	152
	6	9/29/2016	In-Situ	<29.1	<29.1	<29.1	<29.1	755
	9	9/29/2016	In-Situ	<27.5	66.8	<27.5	66.8	494

Notes: laboratory analysis performed by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 method 8015M (TPH) and 300.0 (chloride)

Depth in feet below ground surface (bgs)

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

RRAL: Remediation action level calculated from OCD guidance document (August 13, 1993)

P: analysis pending

FIGURES

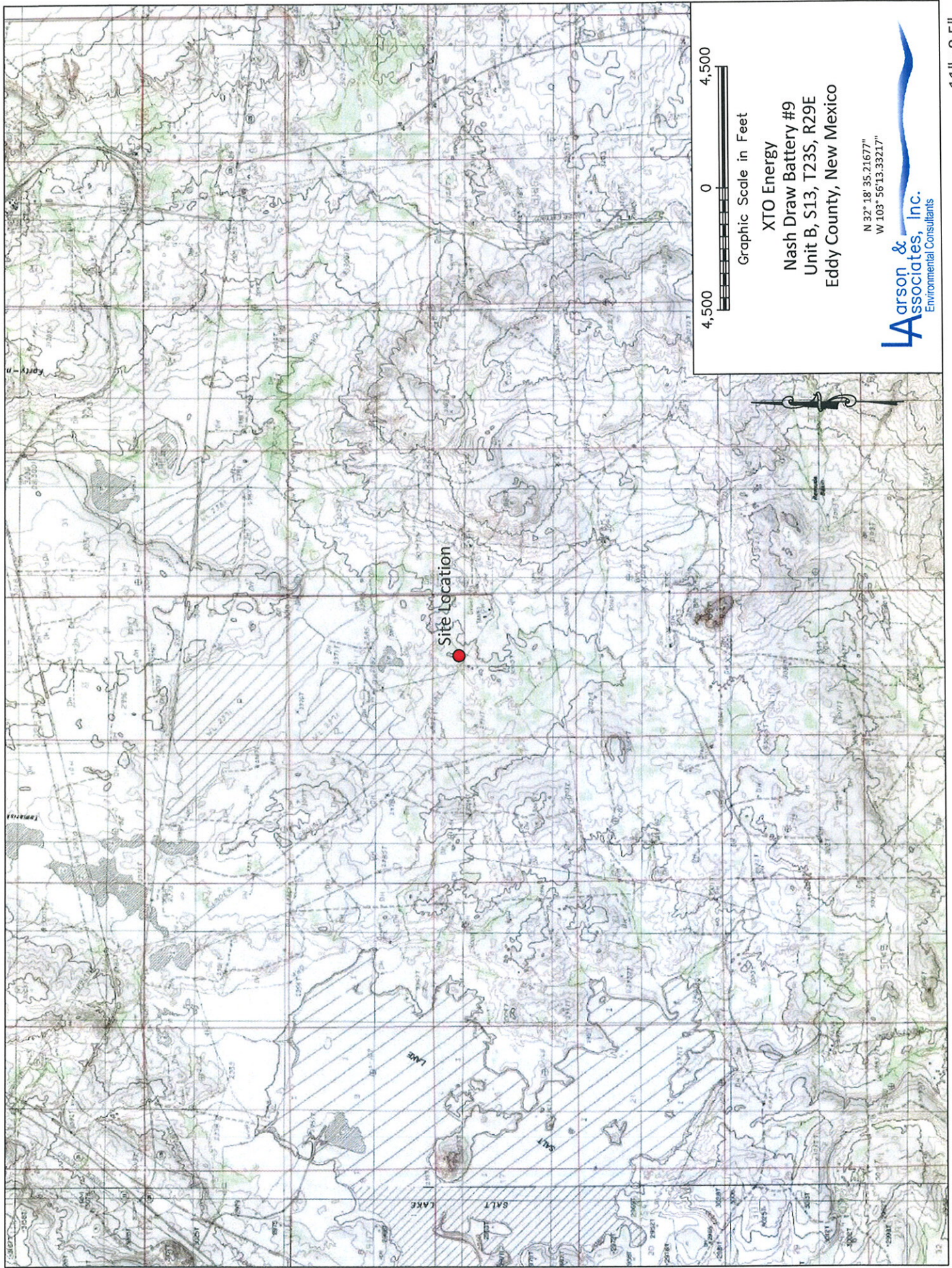
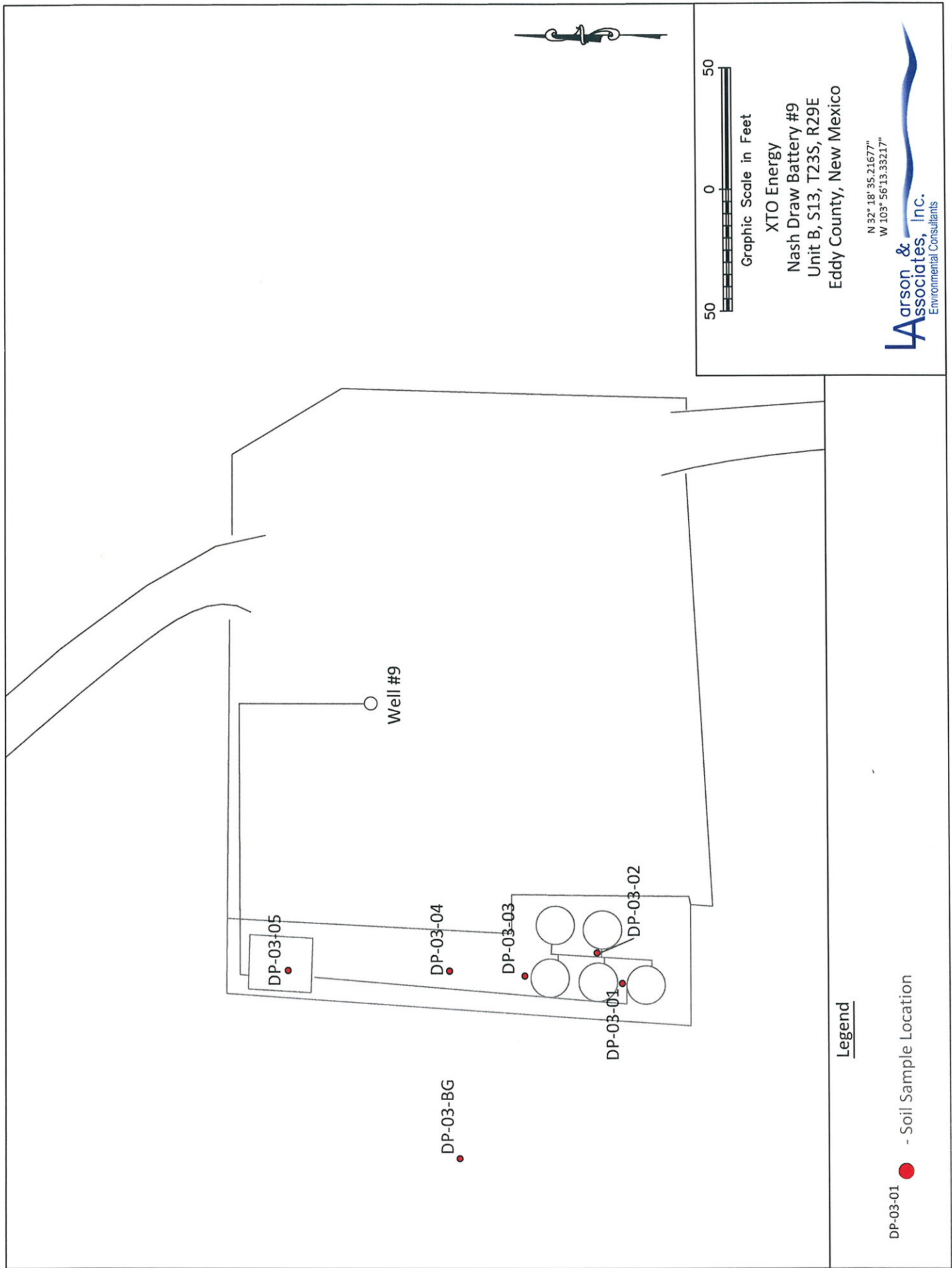


Figure 1 - Topographic Map



Figure 2 - Aerial Map



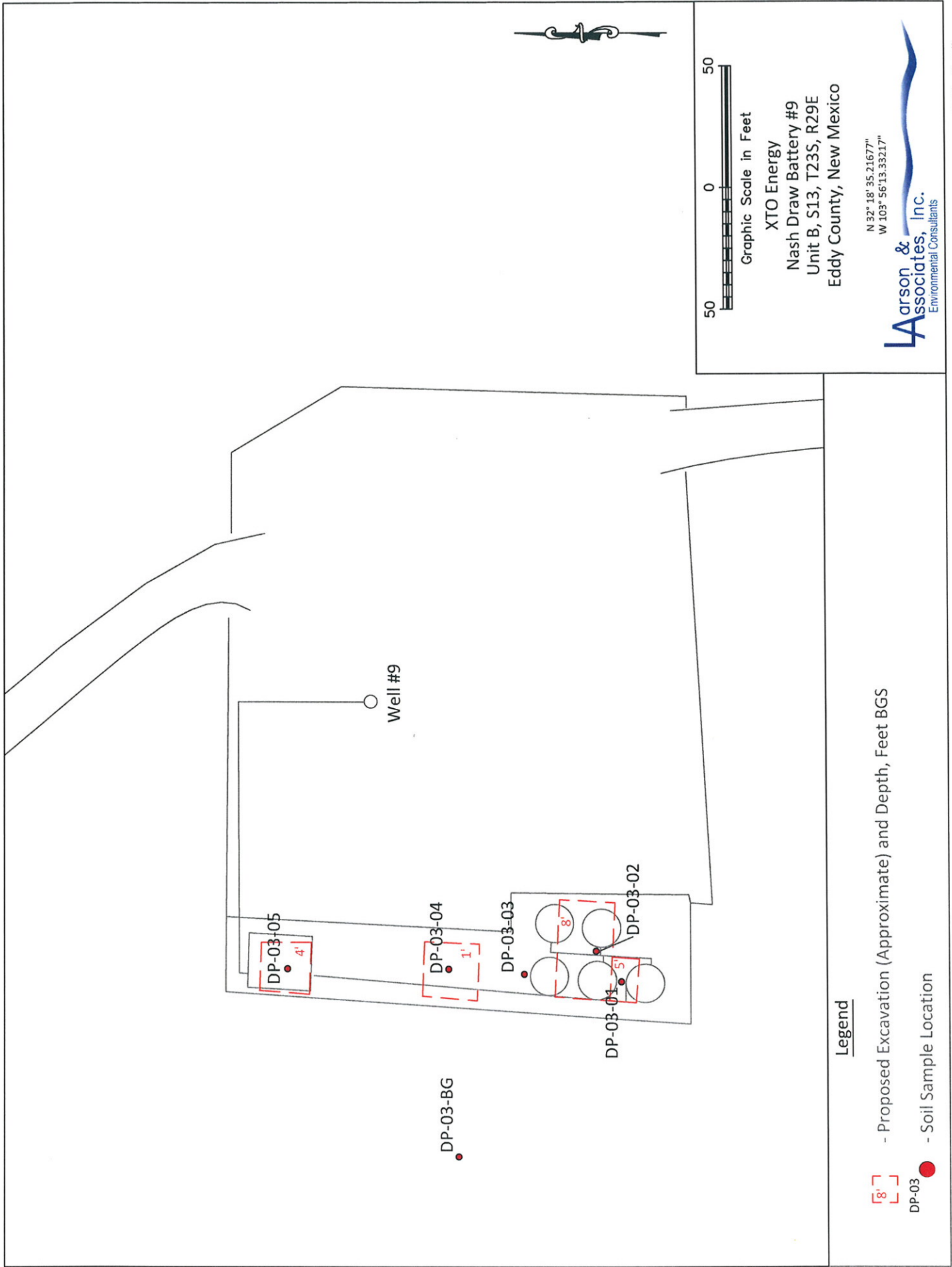


Figure 4 - Site Map Showing Soil Sample Locations and Proposed Excavation Area and Depth

APPENDIX A

Laboratory Reports

**PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701**



Analytical Report

Prepared for:

Mark Larson
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: XTO Nash Draw Site 3

Project Number: 16-0108-03

Location: New Mexico

Lab Order Number: 6F26004



NELAP/TCEQ # T104704156-13-3

Report Date: 07/20/16

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO Nash Draw Site 3
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DP-03-05 (0-1)	6F26004-01	Soil	06/21/16 09:20	06-24-2016 16:30
DP-03-05 (1-2)	6F26004-02	Soil	06/21/16 09:20	06-24-2016 16:30
DP-03-05 (2-3)	6F26004-03	Soil	06/21/16 09:20	06-24-2016 16:30
DP-03-04 (0-1)	6F26004-04	Soil	06/21/16 09:35	06-24-2016 16:30
DP-03-04 (1-2)	6F26004-05	Soil	06/21/16 09:35	06-24-2016 16:30
DP-03-04 (2-3)	6F26004-06	Soil	06/21/16 09:35	06-24-2016 16:30
DP-03-03 (0-1)	6F26004-07	Soil	06/21/16 09:45	06-24-2016 16:30
DP-03-02 (0-1)	6F26004-10	Soil	06/21/16 10:00	06-24-2016 16:30
DP-03-02 (1-2)	6F26004-11	Soil	06/21/16 10:00	06-24-2016 16:30
DP-03-02 (2-3)	6F26004-12	Soil	06/21/16 10:00	06-24-2016 16:30
DP-03-02 (3-4)	6F26004-13	Soil	06/21/16 10:00	06-24-2016 16:30
DP-03-01 (0-1)	6F26004-14	Soil	06/21/16 10:05	06-24-2016 16:30
DP-03-01 (2-3)	6F26004-16	Soil	06/21/16 10:05	06-24-2016 16:30
DP-03-01 (3-4)	6F26004-17	Soil	06/21/16 10:05	06-24-2016 16:30
DP-03-BG (0-1)	6F26004-18	Soil	06/21/16 10:15	06-24-2016 16:30

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Project Number: 16-0108-03
Project Manager: Mark Larson

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DP-03-05 (0-1)
6F26004-01 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	6170	27.5	mg/kg dry	25	P6F2802	06/27/16	06/28/16	EPA 300.0	
% Moisture	9.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	1430	275	mg/kg dry	10	P6F2906	06/26/16	06/27/16	TPH 8015M	
>C12-C28	19300	275	mg/kg dry	10	P6F2906	06/26/16	06/27/16	TPH 8015M	
>C28-C35	3500	275	mg/kg dry	10	P6F2906	06/26/16	06/27/16	TPH 8015M	
Surrogate: 1-Chlorooctane		121 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M	
Surrogate: o-Terphenyl		125 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	24200	275	mg/kg dry	10	[CALC]	06/26/16	06/27/16	calc	

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DP-03-05 (1-2)

6F26004-02 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	1170	5.43	mg/kg dry	5	P6G0711	07/06/16	07/07/16	EPA 300.0	
% Moisture	8.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	45.3	27.2	mg/kg dry	1	P6G0705	07/01/16	07/01/16	TPH 8015M	
>C12-C28	3800	27.2	mg/kg dry	1	P6G0705	07/01/16	07/01/16	TPH 8015M	
>C28-C35	583	27.2	mg/kg dry	1	P6G0705	07/01/16	07/01/16	TPH 8015M	
Surrogate: 1-Chlorooctane		91.1 %	70-130		P6G0705	07/01/16	07/01/16	TPH 8015M	
Surrogate: o-Terphenyl		98.8 %	70-130		P6G0705	07/01/16	07/01/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	4430	27.2	mg/kg dry	1	[CALC]	07/01/16	07/01/16	calc	

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DP-03-05 (2-3)

6F26004-03 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	574	26.9	mg/kg dry	25	P6G1407	07/15/16	07/15/16	EPA 300.0	
% Moisture	7.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	35.0	26.9	mg/kg dry	1	P6G0705	07/01/16	07/01/16	TPH 8015M	
>C12-C28	2000	26.9	mg/kg dry	1	P6G0705	07/01/16	07/01/16	TPH 8015M	
>C28-C35	280	26.9	mg/kg dry	1	P6G0705	07/01/16	07/01/16	TPH 8015M	
Surrogate: 1-Chlorooctane		94.5 %	70-130		P6G0705	07/01/16	07/01/16	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-130		P6G0705	07/01/16	07/01/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	2310	26.9	mg/kg dry	1	[CALC]	07/01/16	07/01/16	calc	

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DP-03-04 (0-1)

6F26004-04 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	1680	5.56	mg/kg dry	5	P6F2802	06/27/16	06/28/16	EPA 300.0	
% Moisture	10.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	139	mg/kg dry	5	P6F2906	06/26/16	06/27/16	TPH 8015M	
>C12-C28	3750	139	mg/kg dry	5	P6F2906	06/26/16	06/27/16	TPH 8015M	
>C28-C35	857	139	mg/kg dry	5	P6F2906	06/26/16	06/27/16	TPH 8015M	
Surrogate: 1-Chlorooctane		96.0 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M	
Surrogate: o-Terphenyl		122 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	4610	139	mg/kg dry	5	[CALC]	06/26/16	06/27/16	calc	

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DP-03-04 (1-2)

6F26004-05 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	275	1.27	mg/kg dry	1	P6G0711	07/06/16	07/07/16	EPA 300.0	
% Moisture	21.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	31.6	mg/kg dry	1	P6G0602	07/01/16	07/02/16	TPH 8015M	
>C12-C28	134	31.6	mg/kg dry	1	P6G0602	07/01/16	07/02/16	TPH 8015M	
>C28-C35	41.9	31.6	mg/kg dry	1	P6G0602	07/01/16	07/02/16	TPH 8015M	
Surrogate: 1-Chlorooctane		109 %	70-130		P6G0602	07/01/16	07/02/16	TPH 8015M	
Surrogate: o-Terphenyl		134 %	70-130		P6G0602	07/01/16	07/02/16	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	175	31.6	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc	

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DP-03-04 (2-3)

6F26004-06 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

% Moisture	7.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.9	mg/kg dry	1	P6G0602	07/01/16	07/02/16	TPH 8015M
>C12-C28	27.9	26.9	mg/kg dry	1	P6G0602	07/01/16	07/02/16	TPH 8015M
>C28-C35	ND	26.9	mg/kg dry	1	P6G0602	07/01/16	07/02/16	TPH 8015M
Surrogate: 1-Chlorooctane		111 %	70-130		P6G0602	07/01/16	07/02/16	TPH 8015M
Surrogate: o-Terphenyl		127 %	70-130		P6G0602	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	27.9	26.9	mg/kg dry	1	{CALC}	07/01/16	07/02/16	calc

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DP-03-03 (0-1)

6F26004-07 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	53.7	11.2	mg/kg dry	10	P6F2802	06/27/16	06/28/16	EPA 300.0
% Moisture	11.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.1	mg/kg dry	1	P6F2906	06/26/16	06/27/16	TPH 8015M
>C12-C28	379	28.1	mg/kg dry	1	P6F2906	06/26/16	06/27/16	TPH 8015M
>C28-C35	107	28.1	mg/kg dry	1	P6F2906	06/26/16	06/27/16	TPH 8015M
Surrogate: 1-Chlorooctane		98.4 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M
Surrogate: o-Terphenyl		116 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	486	28.1	mg/kg dry	1	[CALC]	06/26/16	06/27/16	calc

Larson & Associates, Inc.
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Midland TX, 79710

Project: XTO Nash Draw Site 3
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-02 (0-1)

6F26004-10 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	608	5.43	mg/kg dry	5	P6F2802	06/27/16	06/28/16	EPA 300.0	
% Moisture	8.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	641	136	mg/kg dry	5	P6F2906	06/26/16	06/27/16	TPH 8015M	
>C12-C28	12800	136	mg/kg dry	5	P6F2906	06/26/16	06/27/16	TPH 8015M	
>C28-C35	2250	136	mg/kg dry	5	P6F2906	06/26/16	06/27/16	TPH 8015M	
Surrogate: 1-Chlorooctane		94.0 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M	
Surrogate: o-Terphenyl		107 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	15700	136	mg/kg dry	5	[CALC]	06/26/16	06/27/16	calc	

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

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Fax: (432) 687-0456

DP-03-02 (1-2)

6F26004-11 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	1590	5.68	mg/kg dry	5	P6G1407	07/15/16	07/15/16	EPA 300.0
% Moisture	12.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	921	142	mg/kg dry	5	P6G0707	07/01/16	07/02/16	TPH 8015M
>C12-C28	17600	142	mg/kg dry	5	P6G0707	07/01/16	07/02/16	TPH 8015M
>C28-C35	2250	142	mg/kg dry	5	P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: 1-Chlorooctane		113 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: o-Terphenyl		116 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	20700	142	mg/kg dry	5	[CALC]	07/01/16	07/02/16	calc

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DP-03-02 (2-3)
6F26004-12 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	1690	5.75	mg/kg dry	5	P6G1407	07/15/16	07/15/16	EPA 300.0	
% Moisture	13.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	274	144	mg/kg dry	5	P6G0707	07/01/16	07/02/16	TPH 8015M	
>C12-C28	7390	144	mg/kg dry	5	P6G0707	07/01/16	07/02/16	TPH 8015M	
>C28-C35	1290	144	mg/kg dry	5	P6G0707	07/01/16	07/02/16	TPH 8015M	
Surrogate: 1-Chlorooctane		126 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M	
Surrogate: o-Terphenyl		138 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	8960	144	mg/kg dry	5	[CALC]	07/01/16	07/02/16	calc	

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DP-03-02 (3-4)

6F26004-13 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	715	1.12	mg/kg dry	1	P6G1407	07/15/16	07/15/16	EPA 300.0	
% Moisture	11.0	0.1	%	1	P6G1401	07/14/16	07/14/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	403	140	mg/kg dry	5	P6G1803	07/15/16	07/16/16	TPH 8015M	O-04
>C12-C28	11500	140	mg/kg dry	5	P6G1803	07/15/16	07/16/16	TPH 8015M	O-04
>C28-C35	1450	140	mg/kg dry	5	P6G1803	07/15/16	07/16/16	TPH 8015M	O-04
Surrogate: 1-Chlorooctane		139 %	70-130		P6G1803	07/15/16	07/16/16	TPH 8015M	O-04, S-06
Surrogate: o-Terphenyl		151 %	70-130		P6G1803	07/15/16	07/16/16	TPH 8015M	O-04, S-06
Total Petroleum Hydrocarbon C6-C35	13300	140	mg/kg dry	5	[CALC]	07/15/16	07/16/16	calc	

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DP-03-01 (0-1)
6F26004-14 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	63.9	10.5	mg/kg dry	10	P6F2802	06/27/16	06/28/16	EPA 300.0	
% Moisture	5.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	390	26.3	mg/kg dry	1	P6F2906	06/26/16	06/28/16	TPH 8015M	
>C12-C28	3670	26.3	mg/kg dry	1	P6F2906	06/26/16	06/28/16	TPH 8015M	
>C28-C35	1130	26.3	mg/kg dry	1	P6F2906	06/26/16	06/28/16	TPH 8015M	
Surrogate: 1-Chlorooctane		109 %	70-130		P6F2906	06/26/16	06/28/16	TPH 8015M	
Surrogate: o-Terphenyl		127 %	70-130		P6F2906	06/26/16	06/28/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	5180	26.3	mg/kg dry	1	[CALC]	06/26/16	06/28/16	calc	

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Project: XTO Nash Draw Site 3
Project Number: 16-0108-03
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Fax: (432) 687-0456

DP-03-01 (2-3)
6F26004-16 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	330	28.7	mg/kg dry	25	P6F2802	06/27/16	06/28/16	EPA 300.0	
% Moisture	13.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	876	144	mg/kg dry	5	P6F2906	06/26/16	06/27/16	TPH 8015M	
>C12-C28	10200	144	mg/kg dry	5	P6F2906	06/26/16	06/27/16	TPH 8015M	
>C28-C35	1440	144	mg/kg dry	5	P6F2906	06/26/16	06/27/16	TPH 8015M	
Surrogate: 1-Chlorooctane		89.1 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M	
Surrogate: o-Terphenyl		104 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	12500	144	mg/kg dry	5	[CALC]	06/26/16	06/27/16	calc	

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Project: XTO Nash Draw Site 3
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Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-01 (3-4)

6F26004-17 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	104	1.11	mg/kg dry	1	P6G1407	07/15/16	07/15/16	EPA 300.0	
% Moisture	10.0	0.1	%	1	P6G0808	07/07/16	07/07/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	1080	139	mg/kg dry	5	P6G0704	07/01/16	07/03/16	TPH 8015M	
>C12-C28	10500	139	mg/kg dry	5	P6G0704	07/01/16	07/03/16	TPH 8015M	
>C28-C35	1370	139	mg/kg dry	5	P6G0704	07/01/16	07/03/16	TPH 8015M	
Surrogate: 1-Chlorooctane		109 %	70-130		P6G0704	07/01/16	07/03/16	TPH 8015M	
Surrogate: o-Terphenyl		124 %	70-130		P6G0704	07/01/16	07/03/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	12900	139	mg/kg dry	5	[CALC]	07/01/16	07/03/16	calc	

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Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-BG (0-1)

6F26004-18 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	59.4	5.21	mg/kg dry	5	P6F2802	06/27/16	06/28/16	EPA 300.0	
% Moisture	4.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P6F2906	06/26/16	06/27/16	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P6F2906	06/26/16	06/27/16	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P6F2906	06/26/16	06/27/16	TPH 8015M	
Surrogate: 1-Chlorooctane		87.9 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-130		P6F2906	06/26/16	06/27/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	06/26/16	06/27/16	calc	

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Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

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
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Batch P6F2802 - * DEFAULT PREP *****

Blank (P6F2802-BLK1)

Prepared & Analyzed: 06/27/16

Chloride ND 1.00 mg/kg wet

LCS (P6F2802-BS1)

Prepared & Analyzed: 06/27/16

Chloride 175 1.00 mg/kg wet 200 87.6 80-120

LCS Dup (P6F2802-BSD1)

Prepared & Analyzed: 06/27/16

Chloride 173 1.00 mg/kg wet 200 86.6 80-120 1.13 20

Duplicate (P6F2802-DUP1)

Source: 6F26002-01

Prepared & Analyzed: 06/27/16

Chloride 162 1.03 mg/kg dry 165 1.53 20

Duplicate (P6F2802-DUP2)

Source: 6F26003-08

Prepared & Analyzed: 06/27/16

Chloride 70.9 10.6 mg/kg dry 68.9 2.74 20

Matrix Spike (P6F2802-MS1)

Source: 6F26004-18

Prepared: 06/27/16 Analyzed: 06/28/16

Chloride 204 5.21 mg/kg dry 208 59.4 69.5 80-120 QM-07

Batch P6F2901 - * DEFAULT PREP *****

Blank (P6F2901-BLK1)

Prepared & Analyzed: 06/29/16

% Moisture ND 0.1 %

Duplicate (P6F2901-DUP1)

Source: 6F26010-37

Prepared & Analyzed: 06/29/16

% Moisture 3.0 0.1 % 3.0 0.00 20

Duplicate (P6F2901-DUP2)

Source: 6F26008-08

Prepared & Analyzed: 06/29/16

% Moisture 11.0 0.1 % 12.0 8.70 20

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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
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Batch P6F2901 - * DEFAULT PREP *****

Duplicate (P6F2901-DUP3)

Source: 6F26008-12

Prepared & Analyzed: 06/29/16

% Moisture	7.0	0.1	%		7.0			0.00	20	
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Batch P6G0501 - * DEFAULT PREP *****

Blank (P6G0501-BLK1)

Prepared & Analyzed: 07/05/16

% Moisture	ND	0.1	%							
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Duplicate (P6G0501-DUP1)

Source: 6F26006-06

Prepared & Analyzed: 07/05/16

% Moisture	13.0	0.1	%		13.0			0.00	20	
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Duplicate (P6G0501-DUP2)

Source: 6F26009-23

Prepared & Analyzed: 07/05/16

% Moisture	14.0	0.1	%		17.0			19.4	20	
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Duplicate (P6G0501-DUP3)

Source: 6G01003-01

Prepared & Analyzed: 07/05/16

% Moisture	6.0	0.1	%		5.0			18.2	20	
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Duplicate (P6G0501-DUP4)

Source: 6G01008-02

Prepared & Analyzed: 07/05/16

% Moisture	13.0	0.1	%		12.0			8.00	20	
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Batch P6G0711 - * DEFAULT PREP *****

Blank (P6G0711-BLK1)

Prepared: 07/06/16 Analyzed: 07/07/16

Chloride	ND	1.00	mg/kg wet							
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LCS (P6G0711-BS1)

Prepared: 07/06/16 Analyzed: 07/07/16

Chloride	179	1.00	mg/kg wet	200		89.4	80-120			
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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
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Batch P6G0711 - * DEFAULT PREP *****

LCS Dup (P6G0711-BSD1)

Prepared: 07/06/16 Analyzed: 07/07/16

Chloride	177	1.00	mg/kg wet	200		88.4	80-120	1.13	20	
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Duplicate (P6G0711-DUP1)

Source: 6F30003-04

Prepared: 07/06/16 Analyzed: 07/07/16

Chloride	3080	27.5	mg/kg dry		3010			2.22	20	
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Duplicate (P6G0711-DUP2)

Source: 6F30003-14

Prepared: 07/06/16 Analyzed: 07/07/16

Chloride	20.8	1.16	mg/kg dry		22.7			8.66	20	
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Batch P6G0808 - * DEFAULT PREP *****

Blank (P6G0808-BLK1)

Prepared & Analyzed: 07/07/16

% Moisture	ND	0.1	%							
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Duplicate (P6G0808-DUP1)

Source: 6F26009-27

Prepared & Analyzed: 07/07/16

% Moisture	15.0	0.1	%		17.0			12.5	20	
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Batch P6G1401 - * DEFAULT PREP *****

Blank (P6G1401-BLK1)

Prepared & Analyzed: 07/14/16

% Moisture	ND	0.1	%							
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Duplicate (P6G1401-DUP1)

Source: 6G13010-02

Prepared & Analyzed: 07/14/16

% Moisture	8.0	0.1	%		9.0			11.8	20	
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Duplicate (P6G1401-DUP2)

Source: 6G13015-01

Prepared & Analyzed: 07/14/16

% Moisture	2.0	0.1	%		2.0			0.00	20	
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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
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Batch P6G1407 - * DEFAULT PREP *****

Blank (P6G1407-BLK1)

Prepared & Analyzed: 07/15/16

Chloride ND 1.00 mg/kg wet

LCS (P6G1407-BS1)

Prepared & Analyzed: 07/15/16

Chloride 173 1.00 mg/kg wet 200 86.6 80-120

LCS Dup (P6G1407-BSD1)

Prepared & Analyzed: 07/15/16

Chloride 175 1.00 mg/kg wet 200 87.7 80-120 1.26 20

Duplicate (P6G1407-DUP1)

Source: 6F26007-04

Prepared & Analyzed: 07/15/16

Chloride 3840 58.8 mg/kg dry 3790 1.06 20

Duplicate (P6G1407-DUP2)

Source: 6G05005-65

Prepared & Analyzed: 07/15/16

Chloride 4690 26.9 mg/kg dry 4590 2.14 20

Matrix Spike (P6G1407-MS1)

Source: 6F26007-04

Prepared & Analyzed: 07/15/16

Chloride 13000 58.8 mg/kg dry 9410 3790 98.0 80-120

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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 P6F2906 - TX 1005

Blank (P6F2906-BLK1)

Prepared & Analyzed: 06/26/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	85.5		"	100		85.5	70-130			
Surrogate: o-Terphenyl	45.4		"	50.0		90.8	70-130			

LCS (P6F2906-BS1)

Prepared & Analyzed: 06/26/16

C6-C12	933	25.0	mg/kg wet	1000		93.3	75-125			
>C12-C28	1050	25.0	"	1000		105	75-125			
Surrogate: 1-Chlorooctane	106		"	100		106	70-130			
Surrogate: o-Terphenyl	54.7		"	50.0		109	70-130			

LCS Dup (P6F2906-BSD1)

Prepared & Analyzed: 06/26/16

C6-C12	969	25.0	mg/kg wet	1000		96.9	75-125	3.77	20	
>C12-C28	1120	25.0	"	1000		112	75-125	6.43	20	
Surrogate: 1-Chlorooctane	122		"	100		122	70-130			
Surrogate: o-Terphenyl	52.0		"	50.0		104	70-130			

Matrix Spike (P6F2906-MS1)

Source: 6F26004-18

Prepared: 06/26/16 Analyzed: 06/27/16

C6-C12	957	26.0	mg/kg dry	1040	ND	91.9	75-125			
>C12-C28	1190	26.0	"	1040	25.6	111	75-125			
Surrogate: 1-Chlorooctane	123		"	104		118	70-130			
Surrogate: o-Terphenyl	67.4		"	52.1		129	70-130			

Matrix Spike Dup (P6F2906-MSD1)

Source: 6F26004-18

Prepared: 06/26/16 Analyzed: 06/27/16

C6-C12	965	26.0	mg/kg dry	1040	ND	92.6	75-125	0.817	20	
>C12-C28	1180	26.0	"	1040	25.6	111	75-125	0.157	20	
Surrogate: 1-Chlorooctane	126		"	104		121	70-130			
Surrogate: o-Terphenyl	67.4		"	52.1		129	70-130			

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO Nash Draw Site 3
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

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 P6G0602 - TX 1005

Blank (P6G0602-BLK1)

Prepared & Analyzed: 07/01/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	86.4		"	100		86.4	70-130			
Surrogate: o-Terphenyl	48.3		"	50.0		96.6	70-130			

LCS (P6G0602-BS1)

Prepared & Analyzed: 07/01/16

C6-C12	817	25.0	mg/kg wet	1000		81.7	75-125			
>C12-C28	986	25.0	"	1000		98.6	75-125			
Surrogate: 1-Chlorooctane	104		"	100		104	70-130			
Surrogate: o-Terphenyl	46.5		"	50.0		93.1	70-130			

LCS Dup (P6G0602-BSD1)

Prepared & Analyzed: 07/01/16

C6-C12	923	25.0	mg/kg wet	1000		92.3	75-125	12.2	20	
>C12-C28	1100	25.0	"	1000		110	75-125	10.7	20	
Surrogate: 1-Chlorooctane	120		"	100		120	70-130			
Surrogate: o-Terphenyl	57.3		"	50.0		115	70-130			

Batch P6G0704 - TX 1005

Blank (P6G0704-BLK1)

Prepared: 07/01/16 Analyzed: 07/02/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	87.6		"	100		87.6	70-130			
Surrogate: o-Terphenyl	49.1		"	50.0		98.2	70-130			

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO Nash Draw Site 3
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

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 P6G0704 - TX 1005

LCS (P6G0704-BS1)

Prepared: 07/01/16 Analyzed: 07/02/16

C6-C12	957	25.0	mg/kg wet	1000		95.7	75-125			
>C12-C28	1150	25.0	"	1000		115	75-125			
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	53.4		"	50.0		107	70-130			

LCS Dup (P6G0704-BS1)

Prepared: 07/01/16 Analyzed: 07/02/16

C6-C12	963	25.0	mg/kg wet	1000		96.3	75-125	0.642	20	
>C12-C28	1160	25.0	"	1000		116	75-125	0.479	20	
Surrogate: 1-Chlorooctane	116		"	100		116	70-130			
Surrogate: o-Terphenyl	53.5		"	50.0		107	70-130			

Matrix Spike (P6G0704-MS1)

Source: 6F26009-25

Prepared: 07/01/16 Analyzed: 07/05/16

C6-C12	1080	28.4	mg/kg dry	1140	36.2	91.5	75-125			
>C12-C28	1780	28.4	"	1140	408	121	75-125			
Surrogate: 1-Chlorooctane	157		"	136		115	70-130			
Surrogate: o-Terphenyl	80.9		"	68.2		119	70-130			

Matrix Spike Dup (P6G0704-MSD1)

Source: 6F26009-25

Prepared: 07/01/16 Analyzed: 07/05/16

C6-C12	1030	28.4	mg/kg dry	1140	36.2	87.8	75-125	4.14	20	
>C12-C28	1680	28.4	"	1140	408	112	75-125	7.73	20	
Surrogate: 1-Chlorooctane	153		"	114		135	70-130			S-GC
Surrogate: o-Terphenyl	74.0		"	56.8		130	70-130			

Batch P6G0705 - TX 1005

Blank (P6G0705-BLK1)

Prepared & Analyzed: 07/01/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	101		"	100		101	70-130			
Surrogate: o-Terphenyl	52.7		"	50.0		105	70-130			

Permian Basin Environmental Lab, L.P.

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Page 24 of 30

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO Nash Draw Site 3
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

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 P6G0705 - TX 1005

LCS (P6G0705-BS1)

Prepared & Analyzed: 07/01/16

C6-C12	834	25.0	mg/kg wet	1000		83.4	75-125			
>C12-C28	965	25.0	"	1000		96.5	75-125			
Surrogate: 1-Chlorooctane	119		"	100		119	70-130			
Surrogate: o-Terphenyl	44.6		"	50.0		89.2	70-130			

LCS Dup (P6G0705-BSD1)

Prepared & Analyzed: 07/01/16

C6-C12	890	25.0	mg/kg wet	1000		89.0	75-125	6.60	20	
>C12-C28	1010	25.0	"	1000		101	75-125	4.68	20	
Surrogate: 1-Chlorooctane	110		"	100		110	70-130			
Surrogate: o-Terphenyl	47.4		"	50.0		94.8	70-130			

Duplicate (P6G0705-DUP1)

Source: 6F26005-03

Prepared: 07/01/16 Analyzed: 07/02/16

C6-C12	32.4	30.5	mg/kg dry		47.3			37.2	20	
>C12-C28	386	30.5	"		271			35.1	20	
Surrogate: 1-Chlorooctane	167		"	183		91.5	70-130			
Surrogate: o-Terphenyl	92.8		"	91.5		102	70-130			

Batch P6G0707 - TX 1005

Blank (P6G0707-BLK1)

Prepared: 07/01/16 Analyzed: 07/02/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	99.2		"	100		99.2	70-130			
Surrogate: o-Terphenyl	51.6		"	50.0		103	70-130			

LCS (P6G0707-BS1)

Prepared: 07/01/16 Analyzed: 07/02/16

C6-C12	920	25.0	mg/kg wet	1000		92.0	75-125			
>C12-C28	1070	25.0	"	1000		107	75-125			
Surrogate: 1-Chlorooctane	117		"	100		117	70-130			
Surrogate: o-Terphenyl	49.1		"	50.0		98.2	70-130			

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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO Nash Draw Site 3
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

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 P6G0707 - TX 1005

LCS Dup (P6G0707-BSD1)

Prepared: 07/01/16 Analyzed: 07/02/16

C6-C12	945	25.0	mg/kg wet	1000		94.5	75-125	2.61	20	
>C12-C28	1100	25.0	"	1000		110	75-125	3.25	20	
Surrogate: 1-Chlorooctane	131		"	100		131	70-130			S-GC
Surrogate: o-Terphenyl	57.8		"	50.0		116	70-130			

Batch P6G1803 - TX 1005

Blank (P6G1803-BLK1)

Prepared & Analyzed: 07/15/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	83.4		"	100		83.4	70-130			
Surrogate: o-Terphenyl	42.0		"	50.0		83.9	70-130			

LCS (P6G1803-BS1)

Prepared & Analyzed: 07/15/16

C6-C12	784	25.0	mg/kg wet	1000		78.4	75-125			
>C12-C28	909	25.0	"	1000		90.9	75-125			
Surrogate: 1-Chlorooctane	105		"	100		105	70-130			
Surrogate: o-Terphenyl	38.1		"	50.0		76.2	70-130			

LCS Dup (P6G1803-BSD1)

Prepared & Analyzed: 07/15/16

C6-C12	794	25.0	mg/kg wet	1000		79.4	75-125	1.30	20	
>C12-C28	945	25.0	"	1000		94.5	75-125	3.84	20	
Surrogate: 1-Chlorooctane	108		"	100		108	70-130			
Surrogate: o-Terphenyl	39.0		"	50.0		77.9	70-130			

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Midland TX, 79710

Project: XTO Nash Draw Site 3
Project Number: 16-0108-03
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Fax: (432) 687-0456

Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

O-04 This sample was analyzed outside the EPA recommended holding time.

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: 7/20/2016

Brent Barron, Laboratory Director/Technical Director

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

Permian Basin Environmental Lab, L.P.

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1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.

P.O. Box 50685

Midland TX, 79710

Project: XTO Nash Draw Site 3

Project Number: 16-0108-03

Project Manager: Mark Larson

Fax: (432) 687-0456

Varson & Associates, Inc.
Environmental Consultants

507 N. Marientfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 6-21-16 PAGE 1 OF 2
PO #: _____ LAB WORK ORDER #: 6F280004
PROJECT LOCATION OR NAME: YTO WASH DRUM SITE 3
LAI PROJECT #: K6-0108-03 COLLECTOR: Tw/GF

Page 29 of 30

Data Reported to:

TRRP report? ☐ Yes ☒ No		S=SOIL W=WATER A=AIR		P=PAINT SL=SLUDGE OT=OTHER	
TIME ZONE: Time Zone/State:		6F26004			
MTN / NM		Lab # Date Time			
Field Sample I.D.		Matrix			
# of Containers		PRESERVATION			
HCl		☐			
HNO ₃		☐			
H ₂ SO ₄		☐ NaOH			
ICE		☐			
UNPRESERVED		☐			
ANALYSES					
BTEX ☐ MTBE ☐ TPH 1005 ☐ TPH 1006 ☐					
TRPH 418.1 ☐					
GASOLINE MOD 8015 ☐					
DIESEL MOD 8015 ☐					
VOC 8260 ☐					
SVOC 8270 ☐ PAH 8270 ☐ 8151 HERBICIDES ☐					
8081 PESTICIDES ☐					
8082 PCBs ☐					
TCLP - METALS (ROR) ☐ TCLP VOC ☐					
TCLP - PEST ☐ HERB ☐ Semi-VOC ☐					
TOTAL METALS (ROR) ☐ OTHER LIST ☐					
LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐					
RCI ☐ TOX ☐ FLASHPOINT ☐					
TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐					
pH ☐ HEXAVALENT CHROMIUM ☐					
EXPLOSIVES ☐ PENTACHLORATE ☐					
CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐					
HCLO					
FIELD NOTES					

[illegible]

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	TURN AROUND TIME NORMAL ☐ 1 DAY ☐ 2 DAY ☐ OTHER ☒ 3 DAY	LABORATORY USE ONLY: RECEIVING TEMP: 60 THERM #: CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED ☐ CARRIER BILL # ☐ HAND DELIVERED
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)		
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)		
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)		

Data Reported to:

DATE: **6-21-16** PAGE **2** OF **2**
PO #: **6F26004** LAB WORK ORDER #:
PROJECT LOCATION OR NAME: **XTO MMSH DRUM SITE 3**
LAI PROJECT #: **16-0108-03** COLLECTOR: **Tw / Gf**

CHAIN-OF-CUSTODY

TRRP report? ☐ Yes ☒ No		S=SOIL W=WATER A=AIR		P=PAINT SL=SLUDGE OT=OTHER		TIME ZONE: Time zone/State:		6F26004	
Field Sample I.D.		Lab #		Date		Time		Matrix	
DR-03-01 (2-3)		-16		6-21-16		10:05		S	
1 (3-4)		-17		1		1		1	
DR-03-06 (0-1)		-18		10:15		1		1	
TOTAL		1		1		1		1	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
TURN AROUND TIME NORMAL ☐ 1 DAY ☐ 2 DAY ☐ OTHER ☒ 3 DAY		LABORATORY USE ONLY: RECEIVING TEMP: 6-0 THERM #: 6-0 CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED ☐ CARRIER BILL # ☐ HAND DELIVERED		ANALYSES BTEX ☐ MTBE ☐ TPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ GASOLINE MOD 8015 ☐ DIESEL MOD 8015 ☐ VOC 8260 ☐ SVOC 8270 ☐ 8081 PESTICIDES ☐ 8082 PESTICIDES ☐ TCAP - METALS (RCRA) ☐ TCAP - METALS (HERB) ☐ TCAP - PEST ☐ TCAP - PEST ☐ TOTAL METALS (RCRA) ☐ TOTAL METALS (HERB) ☐ LEAD - TOTAL ☐ LEAD - TOTAL ☐ RCI ☐ TOX ☐ TDS ☐ TSS ☐ pH ☐ HEXAVALENT CHROMIUM ☐ PHOSPHORUS ☐ CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐		FIELD NOTES			

**PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701**

PBELAB

Analytical Report

Prepared for:

Mark Larson
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: XTO Nash Draw Site #9

Project Number: 16-0108-03

Location: New Mexico

Lab Order Number: 6I30004



NELAP/TCEQ # T104704156-16-6

Report Date: 11/07/16

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DP-03-01, 6'	6I30004-01	Soil	09/29/16 09:51	09-30-2016 08:30
DP-03-01, 10'	6I30004-03	Soil	09/29/16 10:05	09-30-2016 08:30
DP-03-01, 14'	6I30004-05	Soil	09/29/16 10:25	09-30-2016 08:30
DP03-02, 6'	6I30004-06	Soil	09/29/16 10:34	09-30-2016 08:30
DP-03-02, 7'	6I30004-07	Soil	09/29/16 10:45	09-30-2016 08:30
DP-03-05, 4'	6I30004-08	Soil	09/29/16 10:55	09-30-2016 08:30
DP-03-05, 6'	6I30004-09	Soil	09/29/16 11:00	09-30-2016 08:30
DP-03-05, 9'	6I30004-11	Soil	09/29/16 11:18	09-30-2016 08:30

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-01, 6'
6I30004-01 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

% Moisture	14.0	0.1	%	1	P6J0304	10/03/16	10/03/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	29.1	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M
>C12-C28	80.0	29.1	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M
>C28-C35	ND	29.1	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M
Surrogate: 1-Chlorooctane		84.6 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M
Surrogate: o-Terphenyl		86.5 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	80.0	29.1	mg/kg dry	1	[CALC]	09/30/16	10/04/16	calc

Permian Basin Environmental Lab, L.P.

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P.O. Box 50685
Midland TX, 79710

Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-01, 10'
6130004-03 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

% Moisture	9.0	0.1	%	1	P6J0304	10/03/16	10/03/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.5	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M
>C12-C28	137	27.5	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M
>C28-C35	41.5	27.5	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M
Surrogate: 1-Chlorooctane		97.4 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M
Surrogate: o-Terphenyl		102 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	179	27.5	mg/kg dry	1	[CALC]	09/30/16	10/04/16	calc

Permian Basin Environmental Lab, L.P.

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Midland TX, 79710

Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-01, 14'
6130004-05 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

% Moisture	8.0	0.1	%	1	P6J0304	10/03/16	10/03/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M
>C12-C28	68.8	27.2	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M
>C28-C35	ND	27.2	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M
Surrogate: 1-Chlorooctane		106 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M
Surrogate: o-Terphenyl		111 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	68.8	27.2	mg/kg dry	1	[CALC]	09/30/16	10/04/16	calc

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P.O. Box 50685
Midland TX, 79710

Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

DP03-02, 6'
6I30004-06 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	1110	31.2	mg/kg dry	25	P6J0305	10/03/16	10/03/16	EPA 300.0	
% Moisture	20.0	0.1	%	1	P6J0304	10/03/16	10/03/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	381	31.2	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
>C12-C28	5620	31.2	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
>C28-C35	776	31.2	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
Surrogate: 1-Chlorooctane		113 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M	
Surrogate: o-Terphenyl		109 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	6770	31.2	mg/kg dry	1	[CALC]	09/30/16	10/04/16	calc	

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-02, 7'
6I30004-07 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	760	28.4	mg/kg dry	25	P6J0306	10/03/16	10/03/16	EPA 300.0	
% Moisture	12.0	0.1	%	1	P6J0304	10/03/16	10/03/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	160	28.4	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
>C12-C28	1790	28.4	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
>C28-C35	320	28.4	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
Surrogate: 1-Chlorooctane		112 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M	
Surrogate: o-Terphenyl		121 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	2270	28.4	mg/kg dry	1	[CALC]	09/30/16	10/04/16	calc	

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Midland TX, 79710

Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-05, 4'
6130004-08 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	152	28.7	mg/kg dry	25	P6J0306	10/03/16	10/03/16	EPA 300.0	
% Moisture	13.0	0.1	%	1	P6J0304	10/03/16	10/03/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.7	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
>C12-C28	71.7	28.7	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
Surrogate: 1-Chlorooctane		102 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M	
Surrogate: o-Terphenyl		107 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	71.7	28.7	mg/kg dry	1	[CALC]	09/30/16	10/04/16	calc	

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Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-05, 6'
6130004-09 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	755	5.81	mg/kg dry	5	P6J0306	10/03/16	10/03/16	EPA 300.0	
% Moisture	14.0	0.1	%	1	P6J0304	10/03/16	10/03/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	29.1	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
>C12-C28	ND	29.1	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
>C28-C35	ND	29.1	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
Surrogate: 1-Chlorooctane		101 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M	
Surrogate: o-Terphenyl		108 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	29.1	mg/kg dry	1	[CALC]	09/30/16	10/04/16	calc	

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Midland TX, 79710

Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-05, 9'
6130004-11 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	494	11.0	mg/kg dry	10	P6J0306	10/03/16	10/03/16	EPA 300.0	
% Moisture	9.0	0.1	%	1	P6J0304	10/03/16	10/03/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.5	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
>C12-C28	66.8	27.5	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
>C28-C35	ND	27.5	mg/kg dry	1	P6J0403	09/30/16	10/04/16	TPH 8015M	
Surrogate: 1-Chlorooctane		102 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M	
Surrogate: o-Terphenyl		108 %	70-130		P6J0403	09/30/16	10/04/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	66.8	27.5	mg/kg dry	1	[CALC]	09/30/16	10/04/16	calc	

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Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

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
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Batch P6J0304 - * DEFAULT PREP *****

Blank (P6J0304-BLK1)		Prepared & Analyzed: 10/03/16								
% Moisture	ND	0.1	%							
Duplicate (P6J0304-DUP1)		Source: 6130004-04		Prepared & Analyzed: 10/03/16						
% Moisture	12.0	0.1	%		12.0			0.00	20	
Duplicate (P6J0304-DUP2)		Source: 6130006-03		Prepared & Analyzed: 10/03/16						
% Moisture	16.0	0.1	%		17.0			6.06	20	

Batch P6J0305 - * DEFAULT PREP *****

Blank (P6J0305-BLK1)		Prepared & Analyzed: 10/03/16								
Chloride	ND	1.00	mg/kg wet							
LCS (P6J0305-BS1)		Prepared & Analyzed: 10/03/16								
Chloride	411	1.00	mg/kg wet	400		103	80-120			
LCS Dup (P6J0305-BSD1)		Prepared & Analyzed: 10/03/16								
Chloride	411	1.00	mg/kg wet	400		103	80-120	0.0341	20	
Duplicate (P6J0305-DUP1)		Source: 6J02004-01		Prepared & Analyzed: 10/03/16						
Chloride	ND	1.01	mg/kg dry		ND				20	
Duplicate (P6J0305-DUP2)		Source: 6130003-07		Prepared & Analyzed: 10/03/16						
Chloride	15000	58.1	mg/kg dry		15000			0.104	20	
Matrix Spike (P6J0305-MS1)		Source: 6J02004-01		Prepared & Analyzed: 10/03/16						
Chloride	961	1.01	mg/kg dry	1010	ND	95.1	80-120			

Permian Basin Environmental Lab, L.P.

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Page 11 of 15

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Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

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 P6J0306 - *** DEFAULT PREP ***										
Blank (P6J0306-BLK1)				Prepared & Analyzed: 10/03/16						
Chloride	ND	1.00	mg/kg wet							
LCS (P6J0306-BS1)				Prepared & Analyzed: 10/03/16						
Chloride	421	1.00	mg/kg wet	400		105	80-120			
LCS Dup (P6J0306-BSD1)				Prepared & Analyzed: 10/03/16						
Chloride	425	1.00	mg/kg wet	400		106	80-120	0.887	20	
Duplicate (P6J0306-DUP1)				Source: 6129006-28		Prepared & Analyzed: 10/03/16				
Chloride	2050	10.5	mg/kg dry		1990			2.93	20	
Duplicate (P6J0306-DUP2)				Source: 6130005-05		Prepared: 10/03/16 Analyzed: 10/04/16				
Chloride	2610	52.1	mg/kg dry		2590			1.10	20	
Matrix Spike (P6J0306-MS1)				Source: 6129006-28		Prepared & Analyzed: 10/03/16				
Chloride	2630	10.5	mg/kg dry	789	1990	80.5	80-120			

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Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
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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 P6J0403 - TX 1005

Blank (P6J0403-BLK1)

Prepared: 09/30/16 Analyzed: 10/04/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	137		"	150		91.0	70-130			
Surrogate: o-Terphenyl	71.5		"	75.0		95.4	70-130			

LCS (P6J0403-BS1)

Prepared: 09/30/16 Analyzed: 10/04/16

C6-C12	1050	25.0	mg/kg wet	1000		105	75-125			
>C12-C28	1050	25.0	"	1000		105	75-125			
Surrogate: 1-Chlorooctane	155		"	150		104	70-130			
Surrogate: o-Terphenyl	72.4		"	75.0		96.6	70-130			

LCS Dup (P6J0403-BSD1)

Prepared: 09/30/16 Analyzed: 10/04/16

C6-C12	1100	25.0	mg/kg wet	1000		110	75-125	4.31	20	
>C12-C28	1120	25.0	"	1000		112	75-125	5.67	20	
Surrogate: 1-Chlorooctane	165		"	150		110	70-130			
Surrogate: o-Terphenyl	77.0		"	75.0		103	70-130			

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Midland TX, 79710

Project: XTO Nash Draw Site #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

Notes and Definitions

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:

11/7/2016

Brent Barron, Laboratory Director/Technical Director

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

TRRP report?		S=SOIL W=WATER A=AIR		P-PAINT SL-SLUDGE OT=OTHER	
☒ Yes ☐ No					
TIME ZONE: Time zone/State:					
Field Sample ID.					
Lab #	Date	Time	Matrix	# of Containers	PRESERVATION
					HCl HNO ₃ H ₂ SO ₄ □ NaOH □ ☒ ICE UNPRESERVED
ANALYSES					
BTEX □ MTBE □ TPH 418.1 □ TPH 1008 □ TPH 1006 □ GASOLINE MOD 8015 □ DIESEL - MOD 8015 □ VOC 8260 □ SVOC 8270 □ PAH 8270 □ HOLDPAH □ 8081 PESTICIDES □ 8161 HERBICIDES □ TCDF METALS (ROR) □ TCDF VOC □ TOTAL METALS (RCRA) □ SEMI-VOC □ LEAD - TOTAL □ D.W. 200.8 □ TCDF □ ROQ □ TOX □ FLASHPOINT □ TDS □ TSS □ % MOISTURE □ PH □ HEXAVALENT CHROMIUM □ EXPLOSIVES □ PERCHLORATE □ CHLORIDE □ ANIONS □ ALKALINITY □					
FIELD NOTES					

**PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701**

PBELAB

Analytical Report

Prepared for:

Mark Larson
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: Nash Draw Battery #9

Project Number: 16-0108-03

Location: New Mexico

Lab Order Number: 6J20017



NELAP/TCEQ # T104704156-16-6

Report Date: 10/26/16

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Nash Draw Battery #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DP-03-02,10'	6J20017-01	Soil	10/19/16 12:48	10-20-2016 09:32
DP-03-02,15'	6J20017-02	Soil	10/19/16 12:51	10-20-2016 09:32

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Nash Draw Battery #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-02,10'
6J20017-01 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	60.2	10.6	mg/kg dry	10	P6J2503	10/25/16	10/26/16	EPA 300.0
% Moisture	6.0	0.1	%	1	P6J2403	10/24/16	10/24/16	% calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P6J2409	10/21/16	10/21/16	TPH 8015M
>C12-C28	ND	26.6	mg/kg dry	1	P6J2409	10/21/16	10/21/16	TPH 8015M
>C28-C35	ND	26.6	mg/kg dry	1	P6J2409	10/21/16	10/21/16	TPH 8015M
Surrogate: 1-Chlorooctane		114 %	70-130		P6J2409	10/21/16	10/21/16	TPH 8015M
Surrogate: o-Terphenyl		115 %	70-130		P6J2409	10/21/16	10/21/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	10/21/16	10/21/16	calc

Larson & Associates, Inc.
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Midland TX, 79710

Project: Nash Draw Battery #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

DP-03-02,15'
6J20017-02 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Chloride	158	1.05	mg/kg dry	1	P6J2503	10/25/16	10/26/16	EPA 300.0	
% Moisture	5.0	0.1	%	1	P6J2403	10/24/16	10/24/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.3	mg/kg dry	1	P6J2409	10/21/16	10/21/16	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P6J2409	10/21/16	10/21/16	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P6J2409	10/21/16	10/21/16	TPH 8015M	
Surrogate: 1-Chlorooctane		107 %	70-130		P6J2409	10/21/16	10/21/16	TPH 8015M	
Surrogate: o-Terphenyl		108 %	70-130		P6J2409	10/21/16	10/21/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	10/21/16	10/21/16	calc	

Larson & Associates, Inc.
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Midland TX, 79710

Project: Nash Draw Battery #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

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
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Batch P6J2403 - * DEFAULT PREP *****

Blank (P6J2403-BLK1)

Prepared & Analyzed: 10/24/16

% Moisture ND 0.1 %

Duplicate (P6J2403-DUP2)

Source: 6J20010-27

Prepared & Analyzed: 10/24/16

% Moisture 16.0 0.1 % 15.0 6.45 20

Duplicate (P6J2403-DUP3)

Source: 6J20011-27

Prepared & Analyzed: 10/24/16

% Moisture 16.0 0.1 % 16.0 0.00 20

Batch P6J2503 - * DEFAULT PREP *****

Blank (P6J2503-BLK1)

Prepared & Analyzed: 10/25/16

Chloride ND 1.00 mg/kg wet

LCS (P6J2503-BS1)

Prepared & Analyzed: 10/25/16

Chloride 368 1.00 mg/kg wet 400 91.9 80-120

LCS Dup (P6J2503-BSD1)

Prepared & Analyzed: 10/25/16

Chloride 376 1.00 mg/kg wet 400 94.0 80-120 2.21 20

Duplicate (P6J2503-DUP1)

Source: 6J20019-BF

Prepared & Analyzed: 10/25/16

Chloride 942 26.9 mg/kg dry 947 0.541 20

Duplicate (P6J2503-DUP2)

Source: 6J20019-BP

Prepared: 10/25/16 Analyzed: 10/26/16

Chloride 1030 27.5 mg/kg dry 1040 0.318 20

Matrix Spike (P6J2503-MS1)

Source: 6J20019-BF

Prepared & Analyzed: 10/25/16

Chloride 13800 26.9 mg/kg dry 10800 947 119 80-120

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Nash Draw Battery #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

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 P6J2409 - TX 1005

Blank (P6J2409-BLK1)

Prepared & Analyzed: 10/21/16

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	120		"	100		120	70-130			
Surrogate: o-Terphenyl	62.8		"	50.0		126	70-130			

LCS (P6J2409-BS1)

Prepared & Analyzed: 10/21/16

C6-C12	947	25.0	mg/kg wet	1000		94.7	75-125			
>C12-C28	968	25.0	"	1000		96.8	75-125			
Surrogate: 1-Chlorooctane	128		"	100		128	70-130			
Surrogate: o-Terphenyl	59.6		"	50.0		119	70-130			

LCS Dup (P6J2409-BSD1)

Prepared & Analyzed: 10/21/16

C6-C12	968	25.0	mg/kg wet	1000		96.8	75-125	2.29	20	
>C12-C28	972	25.0	"	1000		97.2	75-125	0.395	20	
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	58.5		"	50.0		117	70-130			

Duplicate (P6J2409-DUP1)

Source: 6J20010-11

Prepared: 10/21/16 Analyzed: 10/22/16

C6-C12	ND	29.4	mg/kg dry		ND				20	
>C12-C28	ND	29.4	"		ND				20	
Surrogate: 1-Chlorooctane	126		"	118		107	70-130			
Surrogate: o-Terphenyl	63.7		"	58.8		108	70-130			

Permian Basin Environmental Lab, L.P.

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P.O. Box 50685
Midland TX, 79710

Project: Nash Draw Battery #9
Project Number: 16-0108-03
Project Manager: Mark Larson

Fax: (432) 687-0456

Notes and Definitions

BULK Samples received in Bulk soil containers
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:

10/26/2016

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.

CHAIN-OF-CUSTODY

507 N. Marientfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 10-20-2016 PAGE 1 OF 1
PO #: LAB WORK ORDER #:
PROJECT LOCATION OR NAME: Nash Hwy Btly 's
LAI PROJECT #: 16-0109-03 COLLECTOR: Mc

Page 8 of 8

TRRP report? ☐ Yes ☒ No TIME ZONE: _____ Time zone/State: _____ Mth/Day/Year		S=SOIL P=PAINT W=WATER SL=SLUDGE A=AIR OT=OTHER	
Field Sample I.D.	Lab #	Date	Time
Matrix	# of Containers		
PRESERVATION HCl HNO ₃ H ₂ SO ₄ ☐ NaOH ☐ ICE UNPRESERVED			
ANALYSES BTEX ☐ MTBE ☐ TPH 1005 ☐ TPH 1006 ☐ GASOLINE MOD 8015 ☐ DIESEL - MOD 8015 ☐ SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ TCLP - METALS (ROR) ☐ TCLP VOC ☐ TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ TOTAL METALS (ROR) ☐ OTHER LIST ☐ LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ RCL ☐ TOX ☐ FLASHPOINT ☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ pH ☐ HEXAVALENT CHROMIUM ☐ EXPLOSIVES ☐ PENTACHLORATE ☐ CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐			
FIELD NOTES			
TURN AROUND TIME NORMAL ☒ 1 DAY ☐ 2 DAY ☐ OTHER ☐			
LABORATORY USE ONLY: RECEIVING TEMP: <u>3.0</u> THERM #: _____ CUSTODY SEALS - ☐ BROKEN ☒ CONTACT ☐ NOT USED ☒ CARRIER BILL # _____ ☒ HAND DELIVERED			

APPENDIX B

Initial C-141

NM OIL CONSERVATION

ARTESIA DISTRICT

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

SEP 07 2016

Form C-141
Revised August 8, 2011

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

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

RECEIVED

Release Notification and Corrective Action

DAB1625332986

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: XTO Energy, Inc.	Contact: Dudley McMinn
Address: 500 W. Illinois Ave., Suite 100, Midland, TX 70701	Telephone No.: (432) 682-8873
Facility Name: Nash Draw Unit Battery #9	Facility Type: Tank Battery (Equipment Removed)
Surface Owner: Federal	Mineral Owner: Federal
API No. 30-015-26991	

LOCATION OF RELEASE

Unit Letter B	Section 13	Township 23S	Range 29E	Feet from the 860	North/South Line North	Feet from the 2210	East/West Line East	County: Eddy
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Latitude 32.309722 Longitude -103.936944

NATURE OF RELEASE

Type of Release: Crude Oil/Produced Water	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Spills	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 07-20-2016
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* Hydrocarbons and chloride in soil due to historic use of tank battery reported in soil samples by laboratory following removal of tanks and equipment. Will remediate to OCD and BLM requirements.		
Describe Area Affected and Cleanup Action Taken.* Affected soil to be excavated, treated onsite treatment or disposed offsite at OCD approved facility. Refer to attached analytical data summary.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC 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 NMOC 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, NMOC 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: <u>[Signature]</u>	OIL CONSERVATION DIVISION	
Printed Name: Luke Williams	Approved by Environmental Specialist: <u>[Signature]</u>	
Title: EH&S Coordinator	Approval Date: <u>9/8/16</u>	Expiration Date: <u>N/A</u>
E-mail Address: Luke.Williams@xtoenergy.com	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines ☐	
Date: 09-07-2016 Phone: (432) 683-8873	SUBMIT REMEDIATION PROPOSAL NO	

* Attach Additional Sheets If Necessary

LATER THAN: 10/11/16 2RD-3876