INFORMATION ONLY

1RP-4721
DELINEATION REPORT
EMSU Well #410 Produced Water Spill
Lea County, New Mexico

Latitude: N32° 28' 37.80"
Longitude: W103° 18' 24.39"

LAI Project No. 17-0182-01

January 2, 2018

Prepared for:
XTO Energy, Inc.
500 West Illinois Ave., Suite 100
Midland, Texas 79701

Prepared by:
Larson & Associates, Inc.
507 North Marienfeld Street, Suite 205
Midland, Texas 79701

Mark J. Larson, P.G.
Certified Professional Geologist #10490

Sarah R. Johnson
Staff Geologist

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Table of Contents

Figures

Tables

Appendices

1.0 INTRODUCTION

This delineation report is submitted to the New Mexico Oil Conservation Division (OCD) District 1 on behalf of XTO Energy, Inc. (XTO) for a produced water spill near the Eunice Monument South Unit (EMSU) Well #410 (Site) located in Unit K (NE/4, SW/4), Section 18, Township 21 South, Range 36 East, in Lea County, New Mexico. The geodetic position is latitude North 32° 28' 37.80" and longitude West 103° 18' 24.39". Figure 1 presents a location and topographic map. Figure 2 presents an aerial map.

1.1 Background

The spill occurred on June 3, 2017, after the injection line ruptured causing approximately 135.79 barrels (bbl) of produced water to be released onto an abandoned well location, lease road and into the pasture. Approximately 120 bbl were recovered. The release covered an area estimated at approximately 5,834 square feet or about 0.133 acre. The plugged and abandoned well, Eunice Monument South #411, previously owned by Chevron USA, Inc., is located approximately 50 feet south of the release; the well was plugged on July 11, 2002. The surface owner is the United States of America (USA) administered by the Department of the Interior Bureau of Land Management (BLM). On June 5, 2017, XTO submitted the initial C-141 to OCD District 1 which assigned the release remediation permit 1RP-4721 with conditions. Attachment A presents the initial C-141.

1.2 Physical Setting

The physical setting is as follows:

- Elevation is approximately 3,670 feet above mean sea level (amsl);
- Topography slopes towards the east;
- The nearest surface water feature is small seasonal depression (playa) located about 500 feet west (up gradient) from the Site;
- The soils are designated as "Pyote and maljamar find sands", consisting of approximately 30 inches of fine sand underlain by fine sandy loam to approximately 60 inches derived from sedimentary rock;
- The upper geological unit is the Tertiary-age Blackwater Draw and Ogallala formations, in descending order, comprised of very fine to medium-grained quartz sand and gravel, with minor amount of silt and clay with indistinct to massive crossbeds;
- The Ogallala formation is underlain by clay, silty clay, shale and sandstone of the Chinle formation (Triassic) and is about 300 feet thick;
- According to records from the U.S. Geological Survey (U.S.G.S.) and State of New Mexico Office of the State Engineer (OSE) the nearest fresh water well is located in Unit H (SE/4, SE/4), Section 18, Township 21 South, Range 36 East or about 2,800 feet northeast (cross gradient) from the Site;
- Depth to groundwater in the well was reported at approximately 233.83 feet below ground surface (bgs) in 1996.

1.3 Remediation Action Levels

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

Criteria	*Result*	*Score*
Depth-to-Groundwater	>100 feet	0
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Horizontal Feet	0

The following RRAL apply to the release for ranking score: 0

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 5,000 mg/Kg

Depth to groundwater greater than 100 feet bgs requires vertical delineation for chloride to 600 milligrams per kilogram (mg/Kg) and maintained for five (5) feet farther.

2.0 DELINEATION

On October 27, 2017, LAI personnel collected soil samples at fourteen (14) locations (S-1 through S-14) within and outside the spill area. The samples were collected in one foot increments to a depth of 4 foot and in 2 foot increments to a depth of 6 to 8 feet bgs depending on subsurface conditions with direct push technology (DPT). Additional samples were collected with a stainless steel hand auger (HA-1) within the excavation where the break occurred in the injection line. The samples were delivered under chain of custody and preservation to Permian Basin Environmental Lab in Midland, Texas. The upper samples (0 – 1' bgs) were analyzed for the sum of benzene, toluene, ethylbenzene and xylenes (BTEX) and total petroleum hydrocarbons (TPH) including gasoline range organics (GRO), diesel range organics (DRO) and oil range organic (ORO) by EPA SW-846 8021B and 8015M, respectively. All samples were analyzed for chloride by EPA Method 300. Table 1 presents the assessment soil sample analytical data summary. Attachment A presents the laboratory analytical report.

Benzene and BTEX were below the analytical method reporting limits (RL). TPH was below the analytical method RL and RRAL. The following samples reported chloride above the delineation limit (600 mg/Kg) in the deepest soil samples:

- HA-1, 4' – 5' (677 mg/Kg)
- S-1, 4' – 6' (1,170 mg/Kg)
- S-2, 8' – 10' (939 mg/Kg)
- S-3, 4' – 6' (1,070 mg/Kg)
- S-4, 4' – 6' (1,120 mg/Kg)
- S-9, 4' – 6' (1,050 mg/Kg)
- S-11, 4' – 6' (1,440 mg/Kg)
- S-12, 6' – 8' (1,450 mg/Kg)
- S-13, 6' – 8' (757 mg/Kg)

Chloride was less than 600 mg/Kg in samples from ground surface (0 feet) to approximately 4 feet bgs in soil samples from S-1 to S-4, S-9 , and S-11 to S-13) concluding that the chloride is from a historical release. The soil sample from approximately 4 feet bgs at HA-1 was collected beneath the flowline and appears to be from the release. Attachment B presents photographs.

3.0 REMEDIATION

Based on the depth of the elevated chloride levels, the contamination was due to a historical spill event. XTO will delineate the chloride reported in sample HA-1 4 to 5 feet but requests no further action for the historical chloride.

Figures

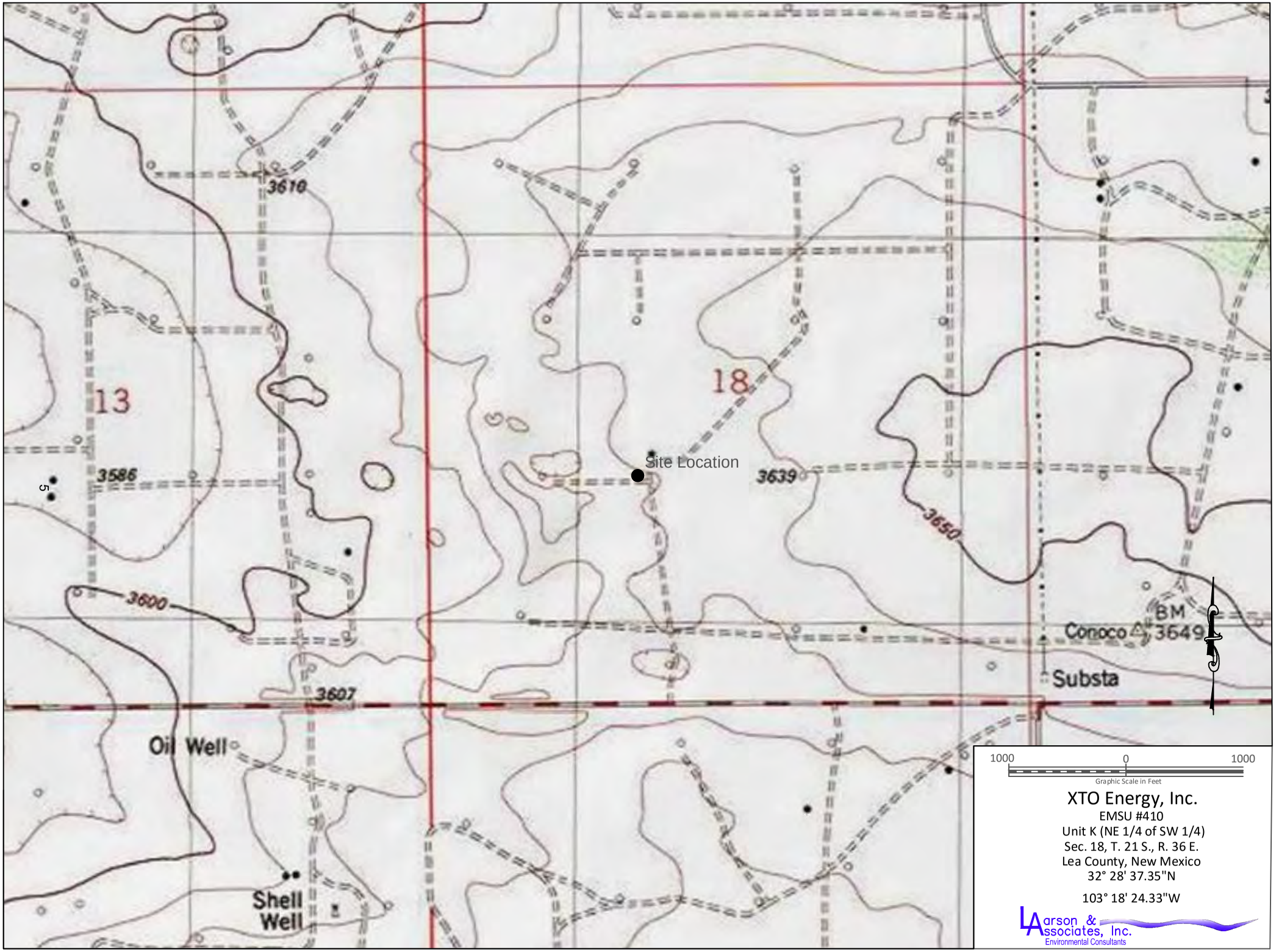

Figure 1 - Topographic Map

Figure 2 - Aerial Map Showing Sample Locations

Tables

Table 1
1RP-4721
Delineation Soil Sample Analytical Data Summary
XTO Energy, Inc., EMSU Well #410 Produced Water Spill
UL K (NE/4, SW/4), Section 18, Township 21 South, Range 36 East
Lea County, New Mexico

Sample	Depth (Feet)	Collection Date	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
RRAL:				**10**	**50**				**5,000**	***600**
HA-1	3 - 4	10/27/2017		<0.00112	<0.00794	<28.1	<28.1	<28.1	<28.1	173
	4 - 5	10/27/2017		--	--	--	--	--	--	**677**
S-1	0 - 1	10/27/2017		<0.00105	<0.00737	<26.3	107	164	271	13.7
	1 - 2	10/27/2017		--	--	---	--	--	--	43.6
	2 - 3	10/27/2017		--	--	---	--	--	--	89.5
	3 - 4	10/27/2017		--	--	---	--	--	--	160
	4 -6	10/27/2017		--	--	---	--	--	--	**1,170**
S-2	0 - 1	10/27/2017		<0.00104	<0.00728	<26.0	<26.0	<26.0	<26.0	<1.04
	1 - 2	10/27/2017		--	--	---	--	--	--	<1.04
	2 - 3	10/27/2017		--	--	---	--	--	--	<1.05
	3 - 4	10/27/2017		--	--	---	--	--	--	2.91
	4 -6	10/27/2017		--	--	---	--	--	--	797
	6 - 8	10/27/2017		--	--	---	--	--	--	1,100
	8 - 10	10/27/2017		--	--	---	--	--	--	**939**
S-3	0 - 1	10/27/2017		<0.00114	<0.00796	<28.4	38.3	99.8	138.1	18.5
	1 - 2	10/27/2017		--	--	---	--	--	--	121
	2 - 3	10/27/2017		--	--	---	--	--	--	164
	3 - 4	10/27/2017		--	--	---	--	--	--	556
	4 -6	10/27/2017		--	--	---	--	--	--	**1,070**
S-4	0 - 1	10/30/2017		<0.00108	<0.00754	<26.9	<26.9	<26.9	<26.9	201
	1 - 2	10/30/2017		--	--	---	--	--	--	226
	2 - 3	10/30/2017		--	--	---	--	--	--	628
	3 - 4	10/30/2017		--	--	---	--	--	--	577

Table 1
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XTO Energy, Inc., EMSU Well #410 Produced Water Spill
UL K (NE/4, SW/4), Section 18, Township 21 South, Range 36 East
Lea County, New Mexico

Sample	Depth (Feet)	Collection Date	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
RRAL:				**10**	**50**				**5,000**	***600**
	4 -6	10/30/2017		--	--	---	--	--	--	**1,120**
S-5	0 - 1	10/30/2017		<0.00109	<0.00761	<27.2	<27.2	39.5	39.5	202
	1 - 2	10/30/2017		--	--	---	--	--	--	173
	2 - 3	10/30/2017		--	--	---	--	--	--	502
	3 - 4	10/30/2017		--	--	---	--	--	--	445
	4 -6	10/30/2017		--	--	---	--	--	--	536
S-6	0 - 1	10/30/2017		<0.00102	<0.00714	<25.5	<25.5	<25.5	<25.5	<1.02
	1 - 2	10/30/2017		--	--	---	--	--	--	<1.06
	2 - 3	10/30/2017		--	--	---	--	--	--	<1.09
	3 - 4	10/30/2017		--	--	---	--	--	--	2.59
	4 -6	10/30/2017		--	--	---	--	--	--	<1.04
	6 - 8	10/30/2017		--	--	---	--	--	--	1.14
S-7	0 - 1	10/30/2017		<0.00101	<0.00707	<126	615	915	1,530	<1.01
	1 - 2	10/30/2017		--	--	---	--	--	--	<1.03
	2 - 3	10/30/2017		--	--	---	--	--	--	<1.05
	3 - 4	10/30/2017		--	--	---	--	--	--	<1.04
	4 -6	10/30/2017		--	--	---	--	--	--	10.9
S-8	0 - 1	11/1/2017		<0.00112	<0.00786	<28.1	75.5	159	234.5	<1.12
	1 - 2	11/1/2017		--	--	---	--	--	--	<1.10
	2 - 3	11/1/2017		--	--	---	--	--	--	<1.03
	3 - 4	11/1/2017		--	--	---	--	--	--	6.66
	4 -6	11/1/2017		--	--	---	--	--	--	85.1

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UL K (NE/4, SW/4), Section 18, Township 21 South, Range 36 East
Lea County, New Mexico

Sample	Depth (Feet)	Collection Date	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
RRAL:				**10**	**50**				**5,000**	***600**
S-9	0 - 1	11/1/2017		<0.00101	<0.00707	<25.3	<25.3	<25.3	<25.3	<1.01
	1 - 2	11/1/2017		--	--	---	--	--	--	4.26
	2 - 3	11/1/2017		--	--	---	--	--	--	94.5
	3 - 4	11/1/2017		--	--	---	--	--	--	125
	4 -6	11/1/2017		--	--	---	--	--	--	**1,050**
S-10	0 - 1	11/1/2017		<0.00105	<0.00737	<26.3	<26.3	<26.3	<26.3	32.2
	1 - 2	11/1/2017		--	--	---	--	--	--	135
	2 - 3	11/1/2017		--	--	---	--	--	--	220
	3 - 4	11/1/2017		--	--	---	--	--	--	274
	4 -6	11/1/2017		--	--	---	--	--	--	513
S-11	0 - 1	11/1/2017		<0.00109	<0.00761	<27.2	154	106	261	54.5
	1 - 2	11/1/2017		--	--	---	--	--	--	74.5
	2 - 3	11/1/2017		--	--	---	--	--	--	246
	3 - 4	11/1/2017		--	--	---	--	--	--	345
	4 -6	11/1/2017		--	--	---	--	--	--	1,440
	6 - 8	11/1/2017		--	--	---	--	--	--	**225**
S-12	0 - 1	11/1/2017		<0.00108	<0.00754	<26.9	112	62.3	174.3	95.7
	1 - 2	11/1/2017		--	--	---	--	--	--	119
	2 - 3	11/1/2017		--	--	---	--	--	--	277
	3 - 4	11/1/2017		--	--	---	--	--	--	376
	4 -6	11/1/2017		--	--	---	--	--	--	829
	6 - 8	11/1/2017		--	--	---	--	--	--	**1,450**
S-13	0 - 1	11/1/2017		<0.00120	<0.00842	<30.1	195	110	305	629

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Lea County, New Mexico

Sample	Depth (Feet)	Collection Date	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
RRAL:				**10**	**50**				**5,000**	***600**
	1 - 2	11/1/2017		--	--	---	--	--	--	677
	2 - 3	11/1/2017		--	--	---	--	--	--	564
	3 - 4	11/1/2017		--	--	---	--	--	--	418
	4 -6	11/1/2017		--	--	---	--	--	--	976
	6 - 8	11/1/2017		--	--	---	--	--	--	**757**
S-14	0 - 1	11/1/2017		<0.00114	<0.00796	<28.4	81.3	38.0	119.3	<1.14
	1 - 2	11/1/2017		--	--	---	--	--	--	<1.01
	2 - 3	11/1/2017		--	--	---	--	--	--	<1.03
	3 - 4	11/1/2017		--	--	---	--	--	--	<1.03
	4 -6	11/1/2017		--	--	---	--	--	--	<1.01

Notes: Analysis by Permian Basin Environmental Lab, Midland, Texas by EPA SW-846 Methods 8021B (BTEX), 8015M (TPH) and 300 (chloride).
*: OCD delineation limit
Depth in feet below ground surface (bgs)
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)
P: Laboratory results pending
Bold exceeds OCD delineation limit (Chloride)

Appendix A

Initial C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

X Initial Report ☐ Final Report

Name of Company XTO Energy	Contact Shannon Walker
Address 500 W Illinois St. Suite 100 Midland Texas 79701	Telephone No. 432-661-4649
Facility Name EMSU 410 WIW	Facility Type Injection

Surface Owner BLM	Mineral Owner BLM	API No.3002530281

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	18	21S	36E					

Latitude 32° 28' 37.80" N Longitude 103° 18' 24.39"W NAD83

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 135.79 bbls	Volume Recovered 120 bbls
Source of Release Injection Line	Date and Hour of Occurrence 6/3/2017	Date and Hour of Discovery 6/3/2017
Was Immediate Notice Given? ☐ Yes X No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes X No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED
By Olivia Yu at 12:58 pm, Jun 13, 2017

Describe Cause of Problem and Remedial Action Taken.*

Injection line ruptured causing produced water to spill on pasture and road. Cleaned up all standing fluids with vacuum truck. Will clean area to NMOCD statdards.

Describe Area Affected and Cleanup Action Taken.*

Pasture and Lease Road. All standing fluid cleaned up with vacuum truck.

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

Signature: Shannon Walker	OIL CONSERVATION DIVISION Approved by Environmental Specialist:	
Printed Name: Shannon Walker		
Title: Production Foreman	Approval Date: 6/13/2017	Expiration Date:
E-mail Address: shannon_walker@xtoenergy.com	Conditions of Approval: see attached directive	Attached ☑
Date: 6/5/17 Phone: 432-661-4649		

* Attach Additional Sheets If Necessary

1RP-4721 fOY1716446806 nOY1716446999 pOY1716447243

Appendix B

Analytical Reports

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

PBELAB

Revised Analytical Report

Prepared for:

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

Project: XTO EMSU 410
Project Number: 17-0182-01
Location: New Mexico

Lab Order Number: 7K06009

NELAP/TCEQ # T104704516-16-7

Report Date: 12/29/17

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

Project: XTO EMSU 410
Project Number: 17-0182-01
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-1 0-1	7K06009-01	Soil	10/27/17 11:05	11-06-2017 09:08
S-1 1-2	7K06009-02	Soil	10/27/17 11:11	11-06-2017 09:08
S-1 2-3	7K06009-03	Soil	10/27/17 11:15	11-06-2017 09:08
S-1 3-4	7K06009-04	Soil	10/27/17 11:19	11-06-2017 09:08
S-1 4-6	7K06009-05	Soil	10/27/17 11:23	11-06-2017 09:08
S-2 0-1	7K06009-06	Soil	10/27/17 12:01	11-06-2017 09:08
S-2 1-2	7K06009-07	Soil	10/27/17 12:07	11-06-2017 09:08
S-2 2-3	7K06009-08	Soil	10/27/17 12:12	11-06-2017 09:08
S-2 3-4	7K06009-09	Soil	10/27/17 12:20	11-06-2017 09:08
S-2 4-6	7K06009-10	Soil	10/27/17 12:28	11-06-2017 09:08
S-2 6-8	7K06009-11	Soil	10/27/17 12:36	11-06-2017 09:08
S-2 8-10	7K06009-12	Soil	10/27/17 12:42	11-06-2017 09:08
S-3 0-1	7K06009-13	Soil	10/27/17 13:08	11-06-2017 09:08
S-3 1-2	7K06009-14	Soil	10/27/17 13:13	11-06-2017 09:08
S-3 2-3	7K06009-15	Soil	10/27/17 13:16	11-06-2017 09:08
S-3 3-4	7K06009-16	Soil	10/27/17 13:22	11-06-2017 09:08
S-3 4-6	7K06009-17	Soil	10/27/17 13:27	11-06-2017 09:08
HA-1 3-4	7K06009-18	Soil	10/27/17 13:38	11-06-2017 09:08
HA-1 4-5	7K06009-19	Soil	10/27/17 13:50	11-06-2017 09:08
S-4 0-1	7K06009-20	Soil	10/30/17 12:05	11-06-2017 09:08
S-4 1-2	7K06009-21	Soil	10/30/17 12:07	11-06-2017 09:08
S-4 2-3	7K06009-22	Soil	10/30/17 12:11	11-06-2017 09:08
S-4 3-4	7K06009-23	Soil	10/30/17 12:13	11-06-2017 09:08
S-4 4-6	7K06009-24	Soil	10/30/17 12:16	11-06-2017 09:08
S-5 0-1	7K06009-25	Soil	10/30/17 12:43	11-06-2017 09:08
S-5 1-2	7K06009-26	Soil	10/30/17 12:45	11-06-2017 09:08
S-5 2-3	7K06009-27	Soil	10/30/17 12:49	11-06-2017 09:08
S-5 3-4	7K06009-28	Soil	10/30/17 12:53	11-06-2017 09:08
S-5 4-6	7K06009-29	Soil	10/30/17 13:01	11-06-2017 09:08
S-6 0-1	7K06009-30	Soil	10/30/17 13:28	11-06-2017 09:08
S-6 1-2	7K06009-31	Soil	10/30/17 13:30	11-06-2017 09:08
S-6 2-3	7K06009-32	Soil	10/30/17 13:35	11-06-2017 09:08
S-6 3-4	7K06009-33	Soil	10/30/17 13:39	11-06-2017 09:08
S-6 4-6	7K06009-34	Soil	10/30/17 13:44	11-06-2017 09:08

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

Project: XTO EMSU 410
Project Number: 17-0182-01
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-6 6-8	7K06009-35	Soil	10/30/17 13:50	11-06-2017 09:08
S-7 0-1	7K06009-36	Soil	10/30/17 14:39	11-06-2017 09:08
S-7 1-2	7K06009-37	Soil	10/30/17 14:41	11-06-2017 09:08
S-7 2-3	7K06009-38	Soil	10/30/17 14:45	11-06-2017 09:08
S-7 3-4	7K06009-39	Soil	10/30/17 14:48	11-06-2017 09:08
S-7 4-6	7K06009-40	Soil	10/30/17 14:51	11-06-2017 09:08
S-8 0-1	7K06009-41	Soil	11/01/17 10:49	11-06-2017 09:08
S-8 1-2	7K06009-42	Soil	11/01/17 10:53	11-06-2017 09:08
S-8 2-3	7K06009-43	Soil	11/01/17 10:55	11-06-2017 09:08
S-8 3-4	7K06009-44	Soil	11/01/17 10:59	11-06-2017 09:08
S-8 4-6	7K06009-45	Soil	11/01/17 11:02	11-06-2017 09:08
S-9 0-1	7K06009-46	Soil	11/01/17 11:12	11-06-2017 09:08
S-9 1-2	7K06009-47	Soil	11/01/17 11:15	11-06-2017 09:08
S-9 2-3	7K06009-48	Soil	11/01/17 11:19	11-06-2017 09:08
S-9 3-4	7K06009-49	Soil	11/01/17 11:23	11-06-2017 09:08
S-9 4-7	7K06009-50	Soil	11/01/17 11:30	11-06-2017 09:08
S-10 0-1	7K06009-51	Soil	11/01/17 11:37	11-06-2017 09:08
S-10 1-2	7K06009-52	Soil	11/01/17 11:46	11-06-2017 09:08
S-10 2-3	7K06009-53	Soil	11/01/17 11:50	11-06-2017 09:08
S-10 3-4	7K06009-54	Soil	11/01/17 11:53	11-06-2017 09:08
S-10 4-6	7K06009-55	Soil	11/01/17 11:59	11-06-2017 09:08
S-11 0-1	7K06009-56	Soil	11/01/17 12:04	11-06-2017 09:08
S-11 1-2	7K06009-57	Soil	11/01/17 12:08	11-06-2017 09:08
S-11 2-3	7K06009-58	Soil	11/01/17 12:11	11-06-2017 09:08
S-11 3-4	7K06009-59	Soil	11/01/17 12:16	11-06-2017 09:08
S-11 4-6	7K06009-60	Soil	11/01/17 12:21	11-06-2017 09:08
S-11 6-8	7K06009-61	Soil	11/01/17 12:25	11-06-2017 09:08
S-12 0-1	7K06009-62	Soil	11/02/17 10:08	11-06-2017 09:08
S-12 1-2	7K06009-63	Soil	11/02/17 10:12	11-06-2017 09:08
S-12 2-3	7K06009-64	Soil	11/02/17 10:15	11-06-2017 09:08
S-12 3-4	7K06009-65	Soil	11/02/17 10:18	11-06-2017 09:08
S-12 4-6	7K06009-66	Soil	11/02/17 10:22	11-06-2017 09:08
S-12 6-8	7K06009-67	Soil	11/02/17 10:27	11-06-2017 09:08
S-13 0-1	7K06009-68	Soil	11/02/17 10:50	11-06-2017 09:08

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Midland TX, 79710

Project: XTO EMSU 410
Project Number: 17-0182-01
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-13 1-2	7K06009-69	Soil	11/02/17 10:53	11-06-2017 09:08
S-13 2-3	7K06009-70	Soil	11/02/17 10:57	11-06-2017 09:08
S-13 3-4	7K06009-71	Soil	11/02/17 11:00	11-06-2017 09:08
S-13 4-6	7K06009-72	Soil	11/02/17 11:04	11-06-2017 09:08
S-13 6-8	7K06009-73	Soil	11/02/17 11:09	11-06-2017 09:08
S-14 0-1	7K06009-74	Soil	11/02/17 11:15	11-06-2017 09:08
S-14 1-2	7K06009-75	Soil	11/02/17 11:17	11-06-2017 09:08
S-14 2-3	7K06009-76	Soil	11/02/17 11:19	11-06-2017 09:08
S-14 3-4	7K06009-77	Soil	11/02/17 11:21	11-06-2017 09:08
S-14 4-6	7K06009-78	Soil	11/02/17 11:36	11-06-2017 09:08

On 12/29/2017 PBELAB staff was advised to report BTEX and TPH on sample HA-1 3-4'. This revised report reflects that addition.

S-1 0-1

7K06009-01 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00105	mg/kg dry	1	P7K0706	11/07/17	11/09/17	EPA 8021B	
Toluene	ND	0.00211	mg/kg dry	1	P7K0706	11/07/17	11/09/17	EPA 8021B	
Ethylbenzene	ND	0.00105	mg/kg dry	1	P7K0706	11/07/17	11/09/17	EPA 8021B	
Xylene (p/m)	ND	0.00211	mg/kg dry	1	P7K0706	11/07/17	11/09/17	EPA 8021B	
Xylene (o)	ND	0.00105	mg/kg dry	1	P7K0706	11/07/17	11/09/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*99.2 %*	*75-125*		*P7K0706*	*11/07/17*	*11/09/17*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*92.7 %*	*75-125*		*P7K0706*	*11/07/17*	*11/09/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**13.7**	1.05	mg/kg dry	1	P7K0902	11/09/17	11/09/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.3	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C12-C28	**107**	26.3	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C28-C35	**164**	26.3	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*100 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*104 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**271**	26.3	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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S-1 1-2

7K06009-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**43.6**	1.04	mg/kg dry	1	P7K0902	11/09/17	11/09/17	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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Midland TX, 79710	Project Manager: Mark Larson	

S-1 2-3

7K06009-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**89.5**	1.03	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**3.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-1 3-4

7K06009-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**160**	1.04	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-1 4-6

7K06009-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1170**	5.95	mg/kg dry	5	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**16.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

S-2 0-1

7K06009-06 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00104	mg/kg dry	1	P7K0706	11/07/17	11/09/17	EPA 8021B	
Toluene	ND	0.00208	mg/kg dry	1	P7K0706	11/07/17	11/09/17	EPA 8021B	
Ethylbenzene	ND	0.00104	mg/kg dry	1	P7K0706	11/07/17	11/09/17	EPA 8021B	
Xylene (p/m)	ND	0.00208	mg/kg dry	1	P7K0706	11/07/17	11/09/17	EPA 8021B	
Xylene (o)	ND	0.00104	mg/kg dry	1	P7K0706	11/07/17	11/09/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*97.4 %*	*75-125*		*P7K0706*	*11/07/17*	*11/09/17*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*109 %*	*75-125*		*P7K0706*	*11/07/17*	*11/09/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.04	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.0	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C12-C28	ND	26.0	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*99.6 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*109 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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S-2 1-2

7K06009-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.04	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-2 2-3

7K06009-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.05	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-2 3-4

7K06009-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**2.91**	1.08	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-2 4-6

7K06009-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**797**	1.16	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**14.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-2 6-8

7K06009-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1100**	5.95	mg/kg dry	5	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**16.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-2 8-10

7K06009-12 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**939**	1.18	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**15.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

S-3 0-1

7K06009-13 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00114	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Toluene	ND	0.00227	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Ethylbenzene	ND	0.00114	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Xylene (p/m)	ND	0.00227	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Xylene (o)	ND	0.00114	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*121 %*	*75-125*		*P7K0707*	*11/07/17*	*11/09/17*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*106 %*	*75-125*		*P7K0707*	*11/07/17*	*11/09/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**18.5**	1.14	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**12.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	28.4	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C12-C28	**38.3**	28.4	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C28-C35	**99.8**	28.4	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*98.0 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*97.3 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**138**	28.4	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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S-3 1-2

7K06009-14 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**121**	1.06	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**6.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-3 2-3

7K06009-15 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**164**	1.03	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**3.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-3 3-4

7K06009-16 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**556**	1.05	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-3 4-6

7K06009-17 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Chloride	**1070**	1.15	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**13.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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HA-1 3-4

7K06009-18 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00112	mg/kg dry	1	P7K2009	11/20/17	11/21/17	EPA 8021B	O-04
Toluene	ND	0.00225	mg/kg dry	1	P7K2009	11/20/17	11/21/17	EPA 8021B	O-04
Ethylbenzene	ND	0.00112	mg/kg dry	1	P7K2009	11/20/17	11/21/17	EPA 8021B	O-04
Xylene (p/m)	ND	0.00225	mg/kg dry	1	P7K2009	11/20/17	11/21/17	EPA 8021B	O-04
Xylene (o)	ND	0.00112	mg/kg dry	1	P7K2009	11/20/17	11/21/17	EPA 8021B	O-04
Surrogate: 1,4-Difluorobenzene		*86.9 %*	*75-125*		*P7K2009*	*11/20/17*	*11/21/17*	*EPA 8021B*	*O-04*
Surrogate: 4-Bromofluorobenzene		*102 %*	*75-125*		*P7K2009*	*11/20/17*	*11/21/17*	*EPA 8021B*	*O-04*
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**173**	1.12	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**11.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	28.1	mg/kg dry	1	P7K1715	11/17/17	11/21/17	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P7K1715	11/17/17	11/21/17	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P7K1715	11/17/17	11/21/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*120 %*	*70-130*		*P7K1715*	*11/17/17*	*11/21/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*133 %*	*70-130*		*P7K1715*	*11/17/17*	*11/21/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	11/17/17	11/21/17	calc	

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HA-1 4-5

7K06009-19 (Soil)

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**677**	6.02	mg/kg dry	5	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**17.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-4 0-1

7K06009-20 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00108	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Toluene	ND	0.00215	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Ethylbenzene	ND	0.00108	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Xylene (p/m)	ND	0.00215	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Xylene (o)	ND	0.00108	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*119 %*	*75-125*		*P7K0707*	*11/07/17*	*11/09/17*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*100 %*	*75-125*		*P7K0707*	*11/07/17*	*11/09/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**201**	1.08	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.9	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*98.5 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*110 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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S-4 1-2

7K06009-21 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**226**	1.03	mg/kg dry	1	P7K0910	11/09/17	11/09/17	EPA 300.0	
% Moisture	**3.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-4 2-3

7K06009-22 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**628**	1.06	mg/kg dry	1	P7K0910	11/09/17	11/10/17	EPA 300.0	
% Moisture	**6.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-4 3-4

7K06009-23 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**577**	1.05	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-4 4-6

7K06009-24 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1120**	5.75	mg/kg dry	5	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**13.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-5 0-1

7K06009-25 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00109	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Toluene	ND	0.00217	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Ethylbenzene	ND	0.00109	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Xylene (p/m)	ND	0.00217	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*104 %*	*75-125*		*P7K0707*	*11/07/17*	*11/09/17*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*116 %*	*75-125*		*P7K0707*	*11/07/17*	*11/09/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**202**	1.09	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**8.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.2	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C28-C35	**39.5**	27.2	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*103 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*110 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**39.5**	27.2	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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S-5 1-2

7K06009-26 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**173**	1.02	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**2.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-5 2-3

7K06009-27 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**502**	1.06	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**6.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-5 3-4

7K06009-28 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**445**	1.05	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-5 4-6

7K06009-29 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**536**	1.08	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-6 0-1

7K06009-30 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Toluene	ND	0.00204	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Ethylbenzene	ND	0.00102	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Xylene (p/m)	ND	0.00204	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Xylene (o)	ND	0.00102	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*94.2 %*	*75-125*		*P7K0707*	*11/07/17*	*11/09/17*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*114 %*	*75-125*		*P7K0707*	*11/07/17*	*11/09/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.02	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**2.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	25.5	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*96.4 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*105 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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S-6 1-2

7K06009-31 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.06	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**6.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-6 2-3

7K06009-32 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.09	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**8.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-6 3-4

7K06009-33 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**2.59**	1.06	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**6.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-6 4-6

7K06009-34 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.04	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-6 6-8

7K06009-35 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1.14**	1.05	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

S-7 0-1

7K06009-36 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00101	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Toluene	ND	0.00202	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Ethylbenzene	ND	0.00101	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Xylene (p/m)	ND	0.00202	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Xylene (o)	ND	0.00101	mg/kg dry	1	P7K0707	11/07/17	11/09/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*111 %*	*75-125*		*P7K0707*	*11/07/17*	*11/09/17*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*127 %*	*75-125*		*P7K0707*	*11/07/17*	*11/09/17*	*EPA 8021B*	*S-GC*
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.01	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**1.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	126	mg/kg dry	5	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C12-C28	**615**	126	mg/kg dry	5	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C28-C35	**915**	126	mg/kg dry	5	P7K1003	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*100 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*105 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**1530**	126	mg/kg dry	5	[CALC]	11/10/17	11/11/17	calc	

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S-7 1-2

7K06009-37 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.03	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**3.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-7 2-3

7K06009-38 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.05	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-7 3-4

7K06009-39 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.04	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-7 4-6

7K06009-40 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**10.9**	1.10	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**9.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-8 0-1

7K06009-41 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00112	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Toluene	ND	0.00225	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Ethylbenzene	ND	0.00112	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (p/m)	ND	0.00225	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (o)	ND	0.00112	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*90.7 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*102 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.12	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**11.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	28.1	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C12-C28	**75.5**	28.1	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
>C28-C35	**159**	28.1	mg/kg dry	1	P7K1003	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*101 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*105 %*	*70-130*		*P7K1003*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**234**	28.1	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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S-8 1-2

7K06009-42 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.10	mg/kg dry	1	P7K0911	11/09/17	11/10/17	EPA 300.0	
% Moisture	**9.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-8 2-3

7K06009-43 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.03	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**3.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-8 3-4

7K06009-44 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**6.66**	1.03	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**3.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-8 4-6

7K06009-45 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**85.1**	1.08	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-9 0-1

7K06009-46 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00101	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Toluene	ND	0.00202	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Ethylbenzene	ND	0.00101	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (p/m)	ND	0.00202	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (o)	ND	0.00101	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*104 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*91.4 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.01	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**11.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	25.3	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C12-C28	ND	25.3	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C28-C35	ND	25.3	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*104 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*111 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	25.3	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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S-9 1-2

7K06009-47 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**4.26**	1.03	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**3.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-9 2-3

7K06009-48 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**94.5**	1.04	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-9 3-4

7K06009-49 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**125**	1.02	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**2.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-9 4-7

7K06009-50 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1050**	5.49	mg/kg dry	5	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**9.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-10 0-1

7K06009-51 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00105	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Toluene	ND	0.00211	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Ethylbenzene	ND	0.00105	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (p/m)	ND	0.00211	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (o)	ND	0.00105	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*96.3 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*105 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**32.2**	1.05	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.3	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*104 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*109 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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S-10 1-2

7K06009-52 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**135**	1.05	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-10 2-3

7K06009-53 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**220**	1.04	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-10 3-4

7K06009-54 (Soil)

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**274**	1.04	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-10 4-6

7K06009-55 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**513**	1.14	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**12.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-11 0-1

7K06009-56 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00109	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Toluene	ND	0.00217	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Ethylbenzene	ND	0.00109	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (p/m)	ND	0.00217	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (o)	ND	0.00109	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*81.9 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*98.1 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**54.5**	1.09	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**8.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.2	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C12-C28	**154**	27.2	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C28-C35	**107**	27.2	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*106 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*114 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**261**	27.2	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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S-11 1-2

7K06009-57 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**74.5**	1.12	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**11.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-11 2-3

7K06009-58 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**246**	1.06	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**6.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-11 3-4

7K06009-59 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**345**	1.05	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-11 4-6

7K06009-60 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1440**	5.88	mg/kg dry	5	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**15.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-11 6-8

7K06009-61 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**225**	1.15	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**13.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-12 0-1

7K06009-62 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00108	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Toluene	ND	0.00215	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Ethylbenzene	ND	0.00108	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (p/m)	ND	0.00215	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (o)	ND	0.00108	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*83.6 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*99.2 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**95.7**	1.08	mg/kg dry	1	P7K0912	11/09/17	11/10/17	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.9	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C12-C28	**112**	26.9	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C28-C35	**62.3**	26.9	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*106 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*109 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**174**	26.9	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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S-12 1-2

7K06009-63 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**119**	1.09	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**8.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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Midland TX, 79710	Project Manager: Mark Larson	

S-12 2-3

7K06009-64 (Soil)

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**277**	1.05	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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P.O. Box 50685	Project Number: 17-0182-01	
Midland TX, 79710	Project Manager: Mark Larson	

S-12 3-4

7K06009-65 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**376**	1.05	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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Midland TX, 79710	Project Manager: Mark Larson	

S-12 4-6

7K06009-66 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**829**	1.08	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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Midland TX, 79710	Project Manager: Mark Larson	

S-12 6-8

7K06009-67 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1450**	5.75	mg/kg dry	5	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**13.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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Project Number: 17-0182-01
Project Manager: Mark Larson

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S-13 0-1

7K06009-68 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00120	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Toluene	ND	0.00241	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Ethylbenzene	ND	0.00120	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (p/m)	ND	0.00241	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (o)	ND	0.00120	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*98.9 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*94.1 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**629**	6.02	mg/kg dry	5	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**17.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	30.1	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C12-C28	**195**	30.1	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C28-C35	**110**	30.1	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*108 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*117 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**305**	30.1	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

S-13 1-2

7K06009-69 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**677**	5.38	mg/kg dry	5	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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P.O. Box 50685	Project Number: 17-0182-01	
Midland TX, 79710	Project Manager: Mark Larson	

S-13 2-3

7K06009-70 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**564**	1.09	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**8.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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P.O. Box 50685	Project Number: 17-0182-01	
Midland TX, 79710	Project Manager: Mark Larson	

S-13 3-4

7K06009-71 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**418**	1.05	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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Midland TX, 79710	Project Manager: Mark Larson	

S-13 4-6

7K06009-72 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**976**	5.26	mg/kg dry	5	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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S-13 6-8

7K06009-73 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**757**	1.15	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**13.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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Project Manager: Mark Larson

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S-14 0-1

7K06009-74 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00114	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Toluene	ND	0.00227	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Ethylbenzene	ND	0.00114	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (p/m)	ND	0.00227	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Xylene (o)	ND	0.00114	mg/kg dry	1	P7K0707	11/07/17	11/10/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*103 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*109 %*	*75-125*		*P7K0707*	*11/07/17*	*11/10/17*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.14	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**12.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	28.4	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C12-C28	**81.3**	28.4	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
>C28-C35	**38.0**	28.4	mg/kg dry	1	P7K1004	11/10/17	11/11/17	TPH 8015M	
Surrogate: 1-Chlorooctane		*102 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Surrogate: o-Terphenyl		*110 %*	*70-130*		*P7K1004*	*11/10/17*	*11/11/17*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**119**	28.4	mg/kg dry	1	[CALC]	11/10/17	11/11/17	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

S-14 1-2

7K06009-75 (Soil)

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	ND	1.01	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**1.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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P.O. Box 50685	Project Number: 17-0182-01	
Midland TX, 79710	Project Manager: Mark Larson	

S-14 2-3

7K06009-76 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.03	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**3.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

Larson & Associates, Inc.	Project: XTO EMSU 410	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 17-0182-01	
Midland TX, 79710	Project Manager: Mark Larson	

S-14 3-4

7K06009-77 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.03	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**3.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

Larson & Associates, Inc.	Project: XTO EMSU 410	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 17-0182-01	
Midland TX, 79710	Project Manager: Mark Larson	

S-14 4-6

7K06009-78 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.01	mg/kg dry	1	P7K0913	11/09/17	11/12/17	EPA 300.0	
% Moisture	**1.0**	0.1	%	1	P7K0804	11/08/17	11/08/17	ASTM D2216	

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
Batch P7K0706 - General Preparation (GC)										
Blank (P7K0706-BLK1)				Prepared: 11/07/17 Analyzed: 11/09/17						
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	*0.0617*		*"*	*0.0600*		*103*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0554*		*"*	*0.0600*		*92.4*	*75-125*			
LCS (P7K0706-BS1)				Prepared: 11/07/17 Analyzed: 11/09/17						
Benzene	0.116	0.00100	mg/kg wet	0.100		116	70-130			
Toluene	0.108	0.00200	"	0.100		108	70-130			
Ethylbenzene	0.107	0.00100	"	0.100		107	70-130			
Xylene (p/m)	0.219	0.00200	"				70-130			
Xylene (o)	0.120	0.00100	"				70-130			
Surrogate: 1,4-Difluorobenzene	*0.0843*		*"*	*0.0600*		*141*	*75-125*			*S-GC1*
Surrogate: 4-Bromofluorobenzene	*0.0771*		*"*	*0.0600*		*129*	*75-125*			*S-GC1*
LCS Dup (P7K0706-BSD1)				Prepared: 11/07/17 Analyzed: 11/09/17						
Benzene	0.0951	0.00100	mg/kg wet	0.100		95.1	70-130	19.4	20	
Toluene	0.0877	0.00200	"	0.100		87.7	70-130	20.7	20	R2
Ethylbenzene	0.115	0.00100	"	0.100		115	70-130	6.95	20	
Xylene (p/m)	0.203	0.00200	"				70-130		20	
Xylene (o)	0.106	0.00100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	*0.0692*		*"*	*0.0600*		*115*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0697*		*"*	*0.0600*		*116*	*75-125*			
Calibration Blank (P7K0706-CCB1)				Prepared: 11/07/17 Analyzed: 11/09/17						
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	*0.0500*		*"*	*0.0600*		*83.4*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0532*		*"*	*0.0600*		*88.6*	*75-125*			

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
Batch P7K0706 - General Preparation (GC)										
Calibration Blank (P7K0706-CCB2)				Prepared: 11/07/17 Analyzed: 11/09/17						
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	*0.0655*		*"*	*0.0600*		*109*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0654*		*"*	*0.0600*		*109*	*75-125*			
Calibration Check (P7K0706-CCV1)				Prepared: 11/07/17 Analyzed: 11/09/17						
Benzene	0.0838	0.00100	mg/kg wet	0.100		83.8	80-120			
Toluene	0.0820	0.00200	"	0.100		82.0	80-120			
Ethylbenzene	0.0818	0.00100	"	0.100		81.8	80-120			
Xylene (p/m)	0.180	0.00200	"	0.200		90.1	80-120			
Xylene (o)	0.0956	0.00100	"	0.100		95.6	80-120			
Surrogate: 4-Bromofluorobenzene	*0.0588*		*"*	*0.0600*		*98.0*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0655*		*"*	*0.0600*		*109*	*75-125*			
Calibration Check (P7K0706-CCV2)				Prepared: 11/07/17 Analyzed: 11/09/17						
Benzene	0.101	0.00100	mg/kg wet	0.100		101	80-120			
Toluene	0.0899	0.00200	"	0.100		89.9	80-120			
Ethylbenzene	0.0910	0.00100	"	0.100		91.0	80-120			
Xylene (p/m)	0.195	0.00200	"	0.200		97.5	80-120			
Xylene (o)	0.102	0.00100	"	0.100		102	80-120			
Surrogate: 4-Bromofluorobenzene	*0.0582*		*"*	*0.0600*		*96.9*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0636*		*"*	*0.0600*		*106*	*75-125*			
Calibration Check (P7K0706-CCV3)				Prepared: 11/07/17 Analyzed: 11/09/17						
Benzene	0.0884	0.00100	mg/kg wet	0.100		88.4	80-120			
Toluene	0.0873	0.00200	"	0.100		87.3	80-120			
Ethylbenzene	0.0897	0.00100	"	0.100		89.7	80-120			
Xylene (p/m)	0.199	0.00200	"	0.200		99.6	80-120			
Xylene (o)	0.110	0.00100	"	0.100		110	80-120			
Surrogate: 1,4-Difluorobenzene	*0.0594*		*"*	*0.0600*		*99.0*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0640*		*"*	*0.0600*		*107*	*75-125*			

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
Batch P7K0707 - General Preparation (GC)										
Blank (P7K0707-BLK1)				Prepared: 11/07/17 Analyzed: 11/09/17						
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	*0.0627*		*"*	*0.0600*		*104*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0671*		*"*	*0.0600*		*112*	*75-125*			
LCS (P7K0707-BS1)				Prepared: 11/07/17 Analyzed: 11/09/17						
Benzene	0.0863	0.00100	mg/kg wet	0.100		86.3	70-130			
Toluene	0.0813	0.00200	"	0.100		81.3	70-130			
Ethylbenzene	0.105	0.00100	"	0.100		105	70-130			
Xylene (p/m)	0.185	0.00200	"				70-130			
Xylene (o)	0.0994	0.00100	"				70-130			
Surrogate: 4-Bromofluorobenzene	*0.0653*		*"*	*0.0600*		*109*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0680*		*"*	*0.0600*		*113*	*75-125*			
LCS Dup (P7K0707-BSD1)				Prepared: 11/07/17 Analyzed: 11/09/17						
Benzene	0.100	0.00100	mg/kg wet	0.100		100	70-130	14.8	20	
Toluene	0.0929	0.00200	"	0.100		92.9	70-130	13.3	20	
Ethylbenzene	0.119	0.00100	"	0.100		119	70-130	13.2	20	
Xylene (p/m)	0.211	0.00200	"				70-130		20	
Xylene (o)	0.109	0.00100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	*0.0660*		*"*	*0.0600*		*110*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0651*		*"*	*0.0600*		*108*	*75-125*			
Calibration Blank (P7K0707-CCB1)				Prepared: 11/07/17 Analyzed: 11/09/17						
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 4-Bromofluorobenzene	*0.0660*		*"*	*0.0600*		*110*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0651*		*"*	*0.0600*		*108*	*75-125*			

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
Batch P7K0707 - General Preparation (GC)										
Calibration Blank (P7K0707-CCB2)				Prepared: 11/07/17 Analyzed: 11/10/17						
Benzene	0.00		mg/kg wet							
Toluene	0.00		"							
Ethylbenzene	0.00		"							
Xylene (p/m)	0.00		"							
Xylene (o)	0.00		"							
Surrogate: 1,4-Difluorobenzene	*0.0673*		*"*	*0.0600*		*112*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0703*		*"*	*0.0600*		*117*	*75-125*			
Calibration Check (P7K0707-CCV1)				Prepared: 11/07/17 Analyzed: 11/09/17						
Benzene	0.0884	0.00100	mg/kg wet	0.100		88.4	80-120			
Toluene	0.0873	0.00200	"	0.100		87.3	80-120			
Ethylbenzene	0.0897	0.00100	"	0.100		89.7	80-120			
Xylene (p/m)	0.199	0.00200	"	0.200		99.6	80-120			
Xylene (o)	0.110	0.00100	"	0.100		110	80-120			
Surrogate: 4-Bromofluorobenzene	*0.0640*		*"*	*0.0600*		*107*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0594*		*"*	*0.0600*		*99.0*	*75-125*			
Calibration Check (P7K0707-CCV2)				Prepared: 11/07/17 Analyzed: 11/10/17						
Benzene	0.0827	0.00100	mg/kg wet	0.100		82.7	80-120			
Toluene	0.0815	0.00200	"	0.100		81.5	80-120			
Ethylbenzene	0.0828	0.00100	"	0.100		82.8	80-120			
Xylene (p/m)	0.183	0.00200	"	0.200		91.3	80-120			
Xylene (o)	0.0941	0.00100	"	0.100		94.1	80-120			
Surrogate: 1,4-Difluorobenzene	*0.0674*		*"*	*0.0600*		*112*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0694*		*"*	*0.0600*		*116*	*75-125*			
Calibration Check (P7K0707-CCV3)				Prepared: 11/07/17 Analyzed: 11/10/17						
Benzene	0.112	0.00100	mg/kg wet	0.100		112	80-120			
Toluene	0.105	0.00200	"	0.100		105	80-120			
Ethylbenzene	0.111	0.00100	"	0.100		111	80-120			
Xylene (p/m)	0.220	0.00200	"	0.200		110	80-120			
Xylene (o)	0.118	0.00100	"	0.100		118	80-120			
Surrogate: 4-Bromofluorobenzene	*0.0636*		*"*	*0.0600*		*106*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0610*		*"*	*0.0600*		*102*	*75-125*			

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
Batch P7K0707 - General Preparation (GC)										
Matrix Spike Dup (P7K0707-MSD1)	**Source: 7K06009-74**			Prepared: 11/07/17 Analyzed: 11/10/17						
Benzene	0.105	0.00114	mg/kg dry	0.114	ND	92.2	80-120		20	
Toluene	0.0936	0.00227	"	0.114	ND	82.4	80-120		20	
Ethylbenzene	0.0995	0.00114	"	0.114	ND	87.6	80-120		20	
Xylene (p/m)	0.207	0.00227	"		ND		80-120		20	
Xylene (o)	0.0915	0.00114	"		ND		80-120		20	
Surrogate: 1,4-Difluorobenzene	*0.0786*		*"*	*0.0682*		*115*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0725*		*"*	*0.0682*		*106*	*75-125*			
Batch P7K2009 - General Preparation (GC)										
Blank (P7K2009-BLK1)				Prepared: 11/20/17 Analyzed: 11/21/17						
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	*0.0763*		*"*	*0.0800*		*95.4*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0681*		*"*	*0.0800*		*85.1*	*75-125*			
LCS (P7K2009-BS1)				Prepared: 11/20/17 Analyzed: 11/21/17						
Benzene	0.100	0.00100	mg/kg wet	0.100		100	70-130			
Toluene	0.106	0.00200	"	0.100		106	70-130			
Ethylbenzene	0.104	0.00100	"	0.100		104	70-130			
Xylene (p/m)	0.219	0.00200	"				70-130			
Xylene (o)	0.110	0.00100	"				70-130			
Surrogate: 1,4-Difluorobenzene	*0.0618*		*"*	*0.0800*		*77.3*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0687*		*"*	*0.0800*		*85.9*	*75-125*			

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
Batch P7K2009 - General Preparation (GC)										
LCS Dup (P7K2009-BSD1)				Prepared: 11/20/17 Analyzed: 11/21/17						
Benzene	0.103	0.00100	mg/kg wet	0.100		103	70-130	2.30	20	
Toluene	0.110	0.00200	"	0.100		110	70-130	3.87	20	
Ethylbenzene	0.0976	0.00100	"	0.100		97.6	70-130	6.22	20	
Xylene (p/m)	0.204	0.00200	"				70-130		20	
Xylene (o)	0.113	0.00100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	*0.0701*		*"*	*0.0800*		*87.6*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0700*		*"*	*0.0800*		*87.5*	*75-125*			
Calibration Check (P7K2009-CCV2)				Prepared: 11/20/17 Analyzed: 11/21/17						
Benzene	0.107	0.00100	mg/kg wet	0.100		107	80-120			
Toluene	0.108	0.00200	"	0.100		108	80-120			
Ethylbenzene	0.112	0.00100	"	0.100		112	80-120			
Xylene (p/m)	0.220	0.00200	"	0.200		110	80-120			
Xylene (o)	0.113	0.00100	"	0.100		113	80-120			
Surrogate: 4-Bromofluorobenzene	*0.0781*		*"*	*0.0800*		*97.6*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0710*		*"*	*0.0800*		*88.8*	*75-125*			
Calibration Check (P7K2009-CCV3)				Prepared: 11/20/17 Analyzed: 11/21/17						
Benzene	0.102	0.00100	mg/kg wet	0.100		102	80-120			
Toluene	0.114	0.00200	"	0.100		114	80-120			
Ethylbenzene	0.113	0.00100	"	0.100		113	80-120			
Xylene (p/m)	0.224	0.00200	"	0.200		112	80-120			
Xylene (o)	0.116	0.00100	"	0.100		116	80-120			
Surrogate: 1,4-Difluorobenzene	*0.0587*		*"*	*0.0800*		*73.4*	*75-125*			*S-GC*
Surrogate: 4-Bromofluorobenzene	*0.0825*		*"*	*0.0800*		*103*	*75-125*			
Matrix Spike (P7K2009-MS1)	**Source: 7K17007-06**			Prepared: 11/20/17 Analyzed: 11/21/17						
Benzene	0.0992	0.00102	mg/kg dry	0.102	ND	97.2	80-120			
Toluene	0.119	0.00204	"	0.102	ND	117	80-120			
Ethylbenzene	0.101	0.00102	"	0.102	ND	98.9	80-120			
Xylene (p/m)	0.200	0.00204	"		ND		80-120			
Xylene (o)	0.114	0.00102	"		ND		80-120			
Surrogate: 1,4-Difluorobenzene	*0.0873*		*"*	*0.0816*		*107*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.119*		*"*	*0.0816*		*146*	*75-125*			*S-GC*

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
Batch P7K2009 - General Preparation (GC)										
Matrix Spike Dup (P7K2009-MSD1)		**Source: 7K17007-06**		Prepared: 11/20/17 Analyzed: 11/21/17						
Benzene	0.110	0.00102	mg/kg dry	0.102	ND	108	80-120	10.1	20	
Toluene	0.117	0.00204	"	0.102	ND	115	80-120	1.22	20	
Ethylbenzene	0.112	0.00102	"	0.102	ND	110	80-120	10.2	20	
Xylene (p/m)	0.213	0.00204	"		ND		80-120		20	
Xylene (o)	0.114	0.00102	"		ND		80-120		20	
Surrogate: 1,4-Difluorobenzene	*0.0710*		*"*	*0.0816*		*87.0*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0813*		*"*	*0.0816*		*99.6*	*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 P7K0804 - * DEFAULT PREP *** **										
Blank (P7K0804-BLK1)				Prepared & Analyzed: 11/08/17						
% Moisture	ND	0.1	%							
Blank (P7K0804-BLK2)				Prepared & Analyzed: 11/08/17						
% Moisture	ND	0.1	%							
Duplicate (P7K0804-DUP1)		**Source: 7K06009-08**		Prepared & Analyzed: 11/08/17						
% Moisture	4.0	0.1	%		5.0			22.2	20	R3
Duplicate (P7K0804-DUP2)		**Source: 7K06009-35**		Prepared & Analyzed: 11/08/17						
% Moisture	6.0	0.1	%		5.0			18.2	20	
Duplicate (P7K0804-DUP3)		**Source: 7K06009-62**		Prepared & Analyzed: 11/08/17						
% Moisture	6.0	0.1	%		7.0			15.4	20	
Batch P7K0902 - * DEFAULT PREP *** **										
LCS (P7K0902-BS1)				Prepared & Analyzed: 11/09/17						
Chloride	414	1.00	mg/kg wet	400		104	80-120			
LCS Dup (P7K0902-BSD1)				Prepared & Analyzed: 11/09/17						
Chloride	412	1.00	mg/kg wet	400		103	80-120	0.593	20	
Duplicate (P7K0902-DUP1)		**Source: 7K03002-07**		Prepared & Analyzed: 11/09/17						
Chloride	4410	27.8	mg/kg dry		4420			0.308	20	
Duplicate (P7K0902-DUP2)		**Source: 7K03004-12**		Prepared & Analyzed: 11/09/17						
Chloride	33.0	1.08	mg/kg dry		32.9			0.359	20	

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 P7K0902 - * DEFAULT PREP *** **										
Matrix Spike (P7K0902-MS1)	**Source: 7K03002-07**			Prepared & Analyzed: 11/09/17						
Chloride	6890	27.8	mg/kg dry	2220	4420	111	80-120			
Batch P7K0910 - * DEFAULT PREP *** **										
Blank (P7K0910-BLK1)				Prepared & Analyzed: 11/09/17						
Chloride	ND	1.00	mg/kg wet							
LCS (P7K0910-BS1)				Prepared & Analyzed: 11/09/17						
Chloride	436	1.00	mg/kg wet	400		109	80-120			
LCS Dup (P7K0910-BSD1)				Prepared & Analyzed: 11/09/17						
Chloride	433	1.00	mg/kg wet	400		108	80-120	0.619	20	
Duplicate (P7K0910-DUP1)	**Source: 7K06009-03**			Prepared & Analyzed: 11/09/17						
Chloride	88.2	1.03	mg/kg dry		89.5			1.50	20	
Duplicate (P7K0910-DUP2)	**Source: 7K06009-13**			Prepared & Analyzed: 11/09/17						
Chloride	19.6	1.14	mg/kg dry		18.5			5.91	20	
Matrix Spike (P7K0910-MS1)	**Source: 7K06009-03**			Prepared & Analyzed: 11/09/17						
Chloride	1190	1.03	mg/kg dry	1030	89.5	106	80-120			
Batch P7K0911 - * DEFAULT PREP *** **										
Blank (P7K0911-BLK1)				Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	ND	1.00	mg/kg wet							

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 P7K0911 - * DEFAULT PREP *** **										
LCS (P7K0911-BS1)				Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	422	1.00	mg/kg wet	400		105	80-120			
LCS Dup (P7K0911-BSD1)				Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	415	1.00	mg/kg wet	400		104	80-120	1.55	20	
Duplicate (P7K0911-DUP1)		**Source: 7K06009-23**		Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	594	1.05	mg/kg dry		577			2.90	20	
Duplicate (P7K0911-DUP2)		**Source: 7K06009-33**		Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	3.81	1.06	mg/kg dry		2.59			38.3	20	R4
Matrix Spike (P7K0911-MS1)		**Source: 7K06009-23**		Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	1650	1.05	mg/kg dry	1050	577	102	80-120			
Batch P7K0912 - * DEFAULT PREP *** **										
Blank (P7K0912-BLK1)				Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	ND	1.00	mg/kg wet							
LCS (P7K0912-BS1)				Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	412	1.00	mg/kg wet	400		103	80-120			
LCS Dup (P7K0912-BSD1)				Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	409	1.00	mg/kg wet	400		102	80-120	0.609	20	
Duplicate (P7K0912-DUP1)		**Source: 7K06009-43**		Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	ND	1.03	mg/kg dry		ND				20	

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 P7K0912 - * DEFAULT PREP *** **										
Duplicate (P7K0912-DUP2)	**Source: 7K06009-53**			Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	222	1.04	mg/kg dry		220			1.07	20	
Matrix Spike (P7K0912-MS1)	**Source: 7K06009-43**			Prepared: 11/09/17 Analyzed: 11/10/17						
Chloride	1110	1.03	mg/kg dry	1030	ND	108	80-120			
Batch P7K0913 - * DEFAULT PREP *** **										
Blank (P7K0913-BLK1)				Prepared: 11/09/17 Analyzed: 11/12/17						
Chloride	ND	1.00	mg/kg wet							
LCS (P7K0913-BS1)				Prepared: 11/09/17 Analyzed: 11/12/17						
Chloride	429	1.00	mg/kg wet	400		107	80-120			
LCS Dup (P7K0913-BSD1)				Prepared: 11/09/17 Analyzed: 11/12/17						
Chloride	439	1.00	mg/kg wet	400		110	80-120	2.41	20	
Duplicate (P7K0913-DUP1)	**Source: 7K06009-63**			Prepared: 11/09/17 Analyzed: 11/12/17						
Chloride	123	1.09	mg/kg dry		119			3.42	20	
Duplicate (P7K0913-DUP2)	**Source: 7K06009-73**			Prepared: 11/09/17 Analyzed: 11/12/17						
Chloride	758	1.15	mg/kg dry		757			0.0880	20	
Matrix Spike (P7K0913-MS1)	**Source: 7K06009-63**			Prepared: 11/09/17 Analyzed: 11/12/17						
Chloride	1280	1.09	mg/kg dry	1090	119	107	80-120			

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 P7K1003 - * DEFAULT PREP *** **										
Blank (P7K1003-BLK1)				Prepared & Analyzed: 11/10/17						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	*109*		*"*	*100*		*109*	*70-130*			
Surrogate: o-Terphenyl	*60.3*		*"*	*50.0*		*121*	*70-130*			
LCS (P7K1003-BS1)				Prepared & Analyzed: 11/10/17						
C6-C12	850	25.0	mg/kg wet	1000		85.0	75-125			
>C12-C28	998	25.0	"	1000		99.8	75-125			
Surrogate: 1-Chlorooctane	*107*		*"*	*100*		*107*	*70-130*			
Surrogate: o-Terphenyl	*56.9*		*"*	*50.0*		*114*	*70-130*			
LCS Dup (P7K1003-BSD1)				Prepared: 11/10/17 Analyzed: 11/13/17						
C6-C12	930	25.0	mg/kg wet	1000		93.0	75-125	8.95	20	
>C12-C28	1130	25.0	"	1000		113	75-125	12.0	20	
Surrogate: 1-Chlorooctane	*115*		*"*	*100*		*115*	*70-130*			
Surrogate: o-Terphenyl	*61.3*		*"*	*50.0*		*123*	*70-130*			
Calibration Blank (P7K1003-CCB1)				Prepared & Analyzed: 11/10/17						
C6-C12	17.5		mg/kg wet							
>C12-C28	4.48		"							
Surrogate: 1-Chlorooctane	*97.6*		*"*	*100*		*97.6*	*70-130*			
Surrogate: o-Terphenyl	*53.9*		*"*	*50.0*		*108*	*70-130*			
Calibration Blank (P7K1003-CCB2)				Prepared & Analyzed: 11/10/17						
C6-C12	19.1		mg/kg wet							
>C12-C28	22.6		"							
Surrogate: 1-Chlorooctane	*100*		*"*	*100*		*100*	*70-130*			
Surrogate: o-Terphenyl	*55.5*		*"*	*50.0*		*111*	*70-130*			

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 P7K1003 - * DEFAULT PREP *** **										
Calibration Check (P7K1003-CCV1)				Prepared & Analyzed: 11/10/17						
C6-C12	456	25.0	mg/kg wet	500		91.2	85-115			
>C12-C28	471	25.0	"	500		94.3	85-115			
Surrogate: 1-Chlorooctane	*108*		*"*	*100*		*108*	*70-130*			
Surrogate: o-Terphenyl	*51.2*		*"*	*50.0*		*102*	*70-130*			
Calibration Check (P7K1003-CCV2)				Prepared & Analyzed: 11/10/17						
C6-C12	462	25.0	mg/kg wet	500		92.4	85-115			
>C12-C28	471	25.0	"	500		94.1	85-115			
Surrogate: 1-Chlorooctane	*112*		*"*	*100*		*112*	*70-130*			
Surrogate: o-Terphenyl	*53.8*		*"*	*50.0*		*108*	*70-130*			
Calibration Check (P7K1003-CCV3)				Prepared: 11/10/17 Analyzed: 11/11/17						
C6-C12	466	25.0	mg/kg wet	500		93.1	85-115			
>C12-C28	496	25.0	"	500		99.2	85-115			
Surrogate: 1-Chlorooctane	*112*		*"*	*100*		*112*	*70-130*			
Surrogate: o-Terphenyl	*53.6*		*"*	*50.0*		*107*	*70-130*			
Matrix Spike (P7K1003-MS1)	**Source: 7K03010-05**			Prepared: 11/10/17 Analyzed: 11/11/17						
C6-C12	1080	26.6	mg/kg dry	1060	41.1	97.6	75-125			
>C12-C28	2470	26.6	"	1060	1720	71.3	75-125			QM-05
Surrogate: 1-Chlorooctane	*124*		*"*	*106*		*116*	*70-130*			
Surrogate: o-Terphenyl	*63.1*		*"*	*53.2*		*119*	*70-130*			
Matrix Spike Dup (P7K1003-MSD1)	**Source: 7K03010-05**			Prepared: 11/10/17 Analyzed: 11/11/17						
C6-C12	1050	26.6	mg/kg dry	1060	41.1	94.8	75-125	2.90	20	
>C12-C28	2470	26.6	"	1060	1720	71.1	75-125	0.310	20	QM-05
Surrogate: 1-Chlorooctane	*123*		*"*	*106*		*116*	*70-130*			
Surrogate: o-Terphenyl	*62.4*		*"*	*53.2*		*117*	*70-130*			

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 P7K1004 - General Preparation (GC)										
Blank (P7K1004-BLK1)				Prepared & Analyzed: 11/10/17						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	*115*		*"*	*100*		*115*	*70-130*			
Surrogate: o-Terphenyl	*62.4*		*"*	*50.0*		*125*	*70-130*			
LCS (P7K1004-BS1)				Prepared & Analyzed: 11/10/17						
C6-C12	1080	25.0	mg/kg wet	1000		108	75-125			
>C12-C28	1050	25.0	"	1000		105	75-125			
Surrogate: 1-Chlorooctane	*133*		*"*	*100*		*133*	*70-130*			*S-GC*
Surrogate: o-Terphenyl	*58.3*		*"*	*50.0*		*117*	*70-130*			
LCS Dup (P7K1004-BSD1)				Prepared: 11/10/17 Analyzed: 11/13/17						
C6-C12	1150	25.0	mg/kg wet	1000		115	75-125	6.37	20	
>C12-C28	1150	25.0	"	1000		115	75-125	9.32	20	
Surrogate: 1-Chlorooctane	*123*		*"*	*100*		*123*	*70-130*			
Surrogate: o-Terphenyl	*62.4*		*"*	*50.0*		*125*	*70-130*			
Calibration Blank (P7K1004-CCB1)				Prepared & Analyzed: 11/10/17						
C6-C12	12.9		mg/kg wet							
>C12-C28	11.8		"							
Surrogate: 1-Chlorooctane	*111*		*"*	*100*		*111*	*70-130*			
Surrogate: o-Terphenyl	*59.2*		*"*	*50.0*		*118*	*70-130*			
Calibration Blank (P7K1004-CCB2)				Prepared: 11/10/17 Analyzed: 11/11/17						
C6-C12	16.4		mg/kg wet							
>C12-C28	8.34		"							
Surrogate: 1-Chlorooctane	*115*		*"*	*100*		*115*	*70-130*			
Surrogate: o-Terphenyl	*62.1*		*"*	*50.0*		*124*	*70-130*			

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 P7K1004 - General Preparation (GC)										
Calibration Check (P7K1004-CCV1)				Prepared & Analyzed: 11/10/17						
C6-C12	534	25.0	mg/kg wet	500		107	85-115			
>C12-C28	505	25.0	"	500		101	85-115			
Surrogate: 1-Chlorooctane	*118*		*"*	*100*		*118*	*70-130*			
Surrogate: o-Terphenyl	*57.5*		*"*	*50.0*		*115*	*70-130*			
Calibration Check (P7K1004-CCV2)				Prepared: 11/10/17 Analyzed: 11/11/17						
C6-C12	560	25.0	mg/kg wet	500		112	85-115			
>C12-C28	535	25.0	"	500		107	85-115			
Surrogate: 1-Chlorooctane	*115*		*"*	*100*		*115*	*70-130*			
Surrogate: o-Terphenyl	*61.1*		*"*	*50.0*		*122*	*70-130*			
Matrix Spike (P7K1004-MS1)		**Source: 7K10006-03**		Prepared: 11/10/17 Analyzed: 11/11/17						
C6-C12	1140	25.8	mg/kg dry	1030	13.7	110	75-125			
>C12-C28	1090	25.8	"	1030	12.3	104	75-125			
Surrogate: 1-Chlorooctane	*125*		*"*	*103*		*121*	*70-130*			
Surrogate: o-Terphenyl	*60.8*		*"*	*51.5*		*118*	*70-130*			
Matrix Spike Dup (P7K1004-MSD1)		**Source: 7K10006-03**		Prepared: 11/10/17 Analyzed: 11/11/17						
C6-C12	1160	25.8	mg/kg dry	1030	13.7	111	75-125	1.34	20	
>C12-C28	1100	25.8	"	1030	12.3	106	75-125	1.05	20	
Surrogate: 1-Chlorooctane	*124*		*"*	*103*		*120*	*70-130*			
Surrogate: o-Terphenyl	*61.4*		*"*	*51.5*		*119*	*70-130*			
Batch P7K1715 - General Preparation (GC)										
Blank (P7K1715-BLK1)				Prepared: 11/17/17 Analyzed: 11/21/17						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	*125*		*"*	*100*		*125*	*70-130*			
Surrogate: o-Terphenyl	*70.2*		*"*	*50.0*		*140*	*70-130*			*S-GC*

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 P7K1715 - General Preparation (GC)										
LCS (P7K1715-BS1)				Prepared: 11/17/17 Analyzed: 11/21/17						
C6-C12	1130	25.0	mg/kg wet	1000		113	75-125			
>C12-C28	1150	25.0	"	1000		115	75-125			
Surrogate: 1-Chlorooctane	*114*		*"*	*100*		*114*	*70-130*			
Surrogate: o-Terphenyl	*62.1*		*"*	*50.0*		*124*	*70-130*			
LCS Dup (P7K1715-BSD1)				Prepared: 11/17/17 Analyzed: 11/21/17						
C6-C12	1130	25.0	mg/kg wet	1000		113	75-125	0.393	20	
>C12-C28	1190	25.0	"	1000		119	75-125	3.77	20	
Surrogate: 1-Chlorooctane	*126*		*"*	*100*		*126*	*70-130*			
Surrogate: o-Terphenyl	*62.4*		*"*	*50.0*		*125*	*70-130*			
Calibration Check (P7K1715-CCV2)				Prepared: 11/17/17 Analyzed: 11/21/17						
C6-C12	578	25.0	mg/kg wet	500		116	85-115			
>C12-C28	566	25.0	"	500		113	85-115			
Surrogate: 1-Chlorooctane	*119*		*"*	*100*		*119*	*70-130*			
Surrogate: o-Terphenyl	*60.9*		*"*	*50.0*		*122*	*70-130*			
Matrix Spike (P7K1715-MS1)		**Source: 7K16005-01**		Prepared: 11/17/17 Analyzed: 11/21/17						
C6-C12	1160	27.8	mg/kg dry	1110	13.1	103	75-125			
>C12-C28	1270	27.8	"	1110	351	82.6	75-125			
Surrogate: 1-Chlorooctane	*139*		*"*	*111*		*125*	*70-130*			
Surrogate: o-Terphenyl	*71.9*		*"*	*55.6*		*129*	*70-130*			
Matrix Spike Dup (P7K1715-MSD1)		**Source: 7K16005-01**		Prepared: 11/17/17 Analyzed: 11/21/17						
C6-C12	1160	27.8	mg/kg dry	1110	13.1	103	75-125	0.378	20	
>C12-C28	1230	27.8	"	1110	351	78.7	75-125	4.81	20	
Surrogate: 1-Chlorooctane	*130*		*"*	*111*		*117*	*70-130*			
Surrogate: o-Terphenyl	*64.1*		*"*	*55.6*		*115*	*70-130*			

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

Project: XTO EMSU 410
Project Number: 17-0182-01
Project Manager: Mark Larson

Fax: (432) 687-0456

Notes and Definitions

S-GC1	Surrogate recovery outside of control limits. A second analysis confirmed the original results..
S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
R4	Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.
R3	The RPD exceeded the acceptance limit due to sample matrix effects.
R2	The RPD exceeded the acceptance limit.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
O-04	This sample was analyzed outside the EPA recommended holding time.
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: Brent Barron Date: 12/29/2017

Brent Barron, Laboratory Director/Technical Director

CHAIN-OF-CUSTOD

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: Nov. 6 2017 PAGE 1 OF 6
PO #: _____ LAB WORK ORDER #: 7K06009
PROJECT LOCATION OR NAME: XTO EMSU 410
LAI PROJECT #: 17-0182-01 COLLECTOR: SJ/ZB

TRRP report? ☐ Yes ■ No

TIME ZONE: Time zone/State: MST/NM

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_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ■ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ■	DIESEL - MOD 8015 ■ ☑ ORO	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ■ ANIONS ☐ ALKALINITY ☐ M300	FIELD NOTES
S-1 0-1	1	10/27	11:05	S	1				✓		✓		✓	✓													✓	
1-2	2		11:11																									
2-3	3		11:15																									
3-4	4		11:19																									
4-6	5		11:23																									
S-2 0-1	6		12:01								✓		✓	✓														
1-2	7		12:07																									
2-3	8		12:12																									
3-4	9		12:20																									
4-6	10		12:28																									
6-8	11		12:36																									
8-10	12		12:42																									
S-3 0-1	13		13:08							✓		✓	✓															
1-2	14		13:13																									
2-3	15		13:16																									
TOTAL																												

RELINQUISHED BY: (Signature) DATE/TIME 11/6/17 RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) 11617 908

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ■
OTHER ☐
_____

LABORATORY USE ONLY:
RECEIVING TEMP: 7.6 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☑ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

PBEL

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: Nov 6 2017 PAGE 2 OF 6

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: 17-0162-01

LAI PROJECT #: XTO EMSU 410 COLLECTOR: SJ/TB

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST/NM

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_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒ ORO	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	M 300	FIELD NOTES
S-3 3-4	16	10/27	13:22	S	1				✓																			✓	
4-6	17		13:27																										
HA-1 3-4	18		13:38																										
4-5	19		13:50																										
S-4 0-1	20	10/30	12:05								✓		✓	✓															116
1-2	21		12:07																										
2-3	22		12:11																										
3-4	23		12:13																										
4-6	24		12:16																										
S-5 0-1	25		12:43								✓		✓	✓															
1-2	26		12:45																										
2-3	27		12:49																										
3-4	28		12:53																										
4-6	29		13:01																										
S-6 0-1'	30		13:28								✓		✓	✓															
TOTAL																													

RELINQUISHED BY:(Signature) Sandra Ho DATE/TIME 11/6/17 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature) 11-6-17 911

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 2.6 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED

PBE1

Orion

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: Nov 6 2017 PAGE 3 OF 6

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: KTD EMSU 410

LAI PROJECT #: 17-0182-01 COLLECTOR: SJ TCB

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST/NM

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_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒ ORO	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☒ ANIONS ☐ ALKALINITY ☐ M300	FIELD NOTES
S-6 1-2	31	10/30	13:30	S	1				✓																		✓	
2-3	32		13:35																									
3-4	33		13:39																									
4-6	34		13:44																									
6-8	35		13:50																									
S-7 0-1	36		14:39								✓		✓	✓														
1-2	37		14:41																									
2-3	38		14:45																									
3-4	39		14:48																									
4-6	40		14:51																									
S-8 0-1	41	11/1	10:49								✓		✓	✓														
1-2	42		10:53																									
2-3	43		10:55																									
3-4	44		10:59																									
4-6	45		11:02																									
TOTAL																												

117

RELINQUISHED BY:(Signature) Sarah Swan DATE/TIME 11/6/17 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature) 11/6/17 911

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 7.6 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED

PRE

AMZ

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: Nov 6 2017 PAGE 4 OF 6

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: XTO EMSU 410

LAI PROJECT #: 17-0182-17 COLLECTOR: SJ/TB

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: MST/NM

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_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☑ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☑	DIESEL - MOD 8015 ☑ GRO	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☑ ANIONS ☐ ALKALINITY ☐ M300	FIELD NOTES
S-9 0-1	46	11/1	11:12	S	1				✓		✓		✓	✓													✓	
1-2	47		11:15																									
2-3	48		11:19																									
3-4	49		11:23																									
4-7	50		11:30																									
S-10 0-1	51		11:37								✓		✓	✓														
1-2	52		11:46																									
2-3	53		11:50																									
3-4	54		11:53																									
4-6	55		11:59																									
S-11 0-1	56		12:04								✓		✓	✓														
1-2	57		12:08																									
2-3	58		12:11																									
3-4	59		12:16																									
4-6	QC		12:21																									
TOTAL																												

118

RELINQUISHED BY:(Signature) DATE/TIME 11/6/2017 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature) 11-6-17 911

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 7.6 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☑ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

PREL

frozen

CHAIN-OF-CUSTOD

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: Nov 6 2017 PAGE 5 OF 6

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: XTO EMSU 410

LAI PROJECT #: 17-0182-17 COLLECTOR: SWB

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST /NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐	M3D	FIELD NOTES
S-11 6-8	61	11/1	12:25	S	1				✓																				
S-12 0-1	62	11/2	10:08								✓		✓	✓															
1-2	63		10:12																										
2-3	64		10:15																										
3-4	65		10:18																										
4-6	66		10:22																										
6-8	67		10:27																										
S-13 0-1	68		10:50								✓		✓	✓															
1-2	69		10:53																										
2-3	70		10:57																										
3-4	71		11:00																										
4-6	72		11:04																										
6-8	73		11:09																										
S-14 0-1	74		11:15								✓		✓	✓															
1-2	75		11:17																										
TOTAL																													

RELINQUISHED BY:(Signature) DATE/TIME 11/6/17 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature) 11-6-17 911

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 7.6 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED

ABEL

Frozen

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: Nov 6 2017 PAGE 6 OF 6
PO #: ______ LAB WORK ORDER #: ______
PROJECT LOCATION OR NAME: XTO EMSU 410
LAI PROJECT #: 17-0182-01 COLLECTOR: SJ / RB

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

ANALYSES:
- BTEX ☒ MTBE ☐
- TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐
- GASOLINE MOD 8015 ☒
- DIESEL - MOD 8015 ☒ ORO ☒
- VOC 8260 ☐
- SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐
- 8081 PESTICIDES ☐ 8151 HERBICIDES ☐
- 8082 PCBS ☐
- TCLP - METALS (RCRA) ☐ TCLP VOC ☐
- TCLP - PEST ☐ HERB ☐ Semi-VOC ☐
- TOTAL METALS (RCRA) ☐ OTHER LIST ☐
- LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐
- RCI ☐ TOX ☐ FLASHPOINT ☐
- TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐
- pH ☐ HEXAVALENT CHROMIUM ☐
- EXPLOSIVES ☐ PECHLORATE ☐
- CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐
- M300

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	CHLORIDE	FIELD NOTES
S-14 2-3	76	11/2	11:19	S	1				✓			
3-4	77	|	11:21	|	|				|		|	
4-6	78	|	11:36	|	|				|		|	

TOTAL

RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	11/6/17 /	
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature) [signature] 11-6-17 911

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.6 THERM #: ______
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # ______
☒ HAND DELIVERED

120

PBEL

Frozen

Appendix C

Photographs

Site Prior to Remediation Viewing West

Site Prior to Remediation Viewing South

Site Prior to Remediation Viewing East

Site Prior to Remediation Viewing North

Site Prior to Remediation Viewing North