fOY1825457213

NOY1825457626

1RP-5191

Timberwolf Environmental, LLC
1920 W. Villa Maria, Ste. 305 (Box 205)
Bryan, Texas 77807
T 979.324.2139 F 979.823.1921
www.teamtimberwolf.com

pOY1825456812

Timberwolf Environmental

REVIEWED
By Olivia Yu at 4:03 pm, Sep 11, 2018

See email correspondence for concerns.

September 4, 2015

Ms. Kellie Jones
New Mexico Oil Conservation Division
1625 N. French Drive
Hobbs, New Mexico 88240

Re: Assessment Report and Remedial Action Plan
Jay Management Company, LLC: Bagley Field Trunkline Release
Bagley Field, Lea County, New Mexico
Timberwolf Project No.: JMGT_SAMP_14048
NE1/4 NW1/4, Sec. 20, T11S R32E

Dear Ms. Jones:

At the request of Jay Management Company, LLC (Jay Management), Timberwolf Environmental, LLC (Timberwolf) has prepared this letter to document the release, impact assessment, and remedial actions of a saltwater release at the junction of two buried steel pipelines (Site). The Site is located approximately 5.1 miles southeast of Caprock in the Bagley Field, Lea County, New Mexico (Figures 1 – 3).

Background

The release was due to a rupture at the junction of the Bagley Field Trunkline (7.5 inch) and an associated field line (2.5 inch) on the week of August 18, 2014. The release was discovered by a rancher. An estimated 2-3 barrels (bbls) of fluid was released from the rupture. Written notification of the release was made to the New Mexico Oil Conservation Division (OCD) on 09/03/14; a copy of the C-141 form is attached.

The release traveled southeast down the pipeline corridor then turned northeast following a cattle trail. The impacted area was approximately 365 feet (ft) x 35 ft. Site conditions are documented in the Photographic Log (Photographs 1 – 6).

Initial cleanup efforts began upon discovery of the release and included vacuuming free liquids and excavating impacted soils. The excavated area is V-shaped, with an average width of 29 ft and overall length of 351 ft; excavation depth ranged from 0.5 ft to 5 ft below ground surface (bgs). Excavated soils have been stockpiled on-site pending laboratory analysis.

Environmental Setting

The surrounding area is characterized as flat to slightly sloping rural land used for cattle grazing and oil and gas production. According the United States Department of Agriculture – Natural Resources Conservation Division web soil survey of Lea County, New Mexico, soils at the Site are mapped as the Kimbrough – Sharvana complex (KX) which consist of gravelly loam in the upper six (6) inches underlain by cemented material to a depth of 16 inches.

Collection of Soil Samples

On 09/17/14 and 04/22/15, Timberwolf personnel collected soil samples to assess the impact of the release. The soil samples were collected from eight (8) boreholes, one (1) sidewall sample from excavation, and one (1) spoil pile sample. The borehole locations are shown in the Sample Location Plat (Figure 4) and summarized in the following table.

Table 1. Soil Sample Locations and Purpose

Soil Boring	Location – Purpose
SB1, SB2 SW	Collected within body of release – to evaluate remediation efforts and to vertically delineate soils
SB6	Collected near end of excavated area – to delineate horizontal and vertical extent of the main body of release
SB3, SB4, SB5, SB8, SB9, SB10	Collected at the perimeter of spill – to delineate horizontal extent of the impacted area
SB7 Spoil	Collected composite spoil pile – to determine if soil was suitable for reuse

All samples were collected using a stainless steel handauger and pick-ax. Sample depths ranged from 0.5 ft to auger refusal (i.e. 4.5 ft) bgs. To eliminate cross contamination, the handauger and pick-ax were decontaminated between samples using Alconox® and deionized water.

The soil samples were placed in laboratory-provided sample containers, stored on ice, and transported under proper chain-of-custody protocol to the TestAmerica Laboratories in Houston, Texas. The laboratory reports and chain-of-custody documents are attached.

Site-Specific Cleanup Criteria

The New Mexico Oil Conservation Division (OCD) has established remediation action levels for soils impacted by oilfield products or wastes, which are documented in the *Guidelines for Remediation of Leaks, Spills and Releases*. The closure criteria utilize a ranking system that scores the potential to contaminate based upon a site's distance to water resources. The ranking system is summarized in Table 2.

Table 2. OCD Ranking System

Category	Distance to Resource (feet)	Score
Depth to groundwater	< 50	20
	50 to 99	10
	> 100	0
Water Wellhead protection	< 200	20
	> 200	0
Surface water protection	< 200	20
	200 to 1,000	10
	> 1,000	0

Sites receive a score from each category. The three scores are summed to reach a total ranking score, which provides site-specific remediation action levels.

Based on prior environmental drilling activities in the Bagley Field, groundwater is first encountered approximately 40 ft bgs, which results in a score of 20. No surface water bodies were identified within 1,000 ft of the Site, which results in a score of zero (0). No water wellheads are located within 200 ft of the Site, which results in a score of zero (0). Therefore, the total ranking score at the Site is 20. Based on the OCD criteria, the site-specific cleanup criteria are presented in Table 3.

Table 3. OCD Cleanup Criteria by Total Ranking Score

Constituent	Total Ranking Score		
	> 19	10-19	0-9
	Corresponding Cleanup Criteria (mg/kg)		
Benzene	**10**	10	10
Total BTEX	**50**	50	50
TPH	**100**	1,000	5,000
Chlorides	**250[P]**	500[P]	1,000[P]

BTEX – benzene, toluene, ethylbenzene and xylenes
TPH – total petroleum hydrocarbons
mg/kg – milligrams per kilogram
[P] – criteria presented is proposed and not officially promulgated by the OCD

Analysis of Soil Samples

The soil samples were analyzed for total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylenes (BTEX), and chlorides. Analytical methods are documented on the attached laboratory reports. The analytical results of the samples are shown below:

Table 4. Analytical Results of Soil Sample

Sample ID[1]	Sample Date	TPH (mg/kg)	Petroleum Hydrocarbons (mg/kg)				Chloride (mg/kg)
			B	T	E	X	
SB1 5'	09/16/14	330	0.00098[JB]	< 0.0014	< 0.001	0.0077	1,500
SB2 SW	09/16/14	< 3.8	0.001[JB]	< 0.0014	< 0.001	< 0.001	2,100
SB3 0-1'	09/16/14	< 3.8	0.001[JB]	< 0.0014	< 0.001	< 0.0011	4.9
SB4 0-1'	09/16/14	< 3.8	0.0014[JB]	< 0.0014	< 0.001	< 0.0011	5.4
SB5 0-1'	09/16/14	< 3.8	0.0016[JB]	< 0.0014	< 0.001	< 0.0011	4.2
SB6 1-1.5'	09/16/14	--	--	--	--	--	12,000
SB6 1.5-2.0'	04/22/15	--	--	--	--	--	5,400
SB6 2.0-3.0'	04/22/15	--	--	--	--	--	7,400
SB6 3.0-4.0'	04/22/15	--	--	--	--	--	6,500
SB6 4.0-4.5'	04/22/15	--	--	--	--	--	4,400
SB7 Spoil	09/16/14	--	--	--	--	--	1,800
SB8 0-0.5'	09/16/14	--	--	--	--	--	14
SB9 0-1'	09/16/14	--	--	--	--	--	3.6[J]
SB10 0-1'	09/16/14	--	--	--	--	--	9.2
OCD Site-Specific Criteria		**100**	**10**	**--**	**--**	**--**	**250**

mg/kg – milligram per kilogram
BTEX – benzene, toluene, ethylbenzene, xylenes
TPH – total petroleum hydrocarbons
[1] All depths are below natural grade
[J] – estimated value
[B] – compound found in blank and sample
-- – parameter not analyzed
- exceeds regulatory limit

Conclusions

Based on Timberwolf's field investigation, the OCD site-specific cleanup criteria and analytical results, the following is concluded:

- The main body of the impacted area was approximately 365 feet (ft) x 35 ft (0.18 acres). Initial cleanup included excavation of impacted soil, excavation depths ranged from 0.5 to 5 ft below the ground surface (bgs) (Figure 4).
- Concentrations of TPH exceeded the OCD site-specific cleanup criteria in one soil sample (i.e. SB1 5'). SB1 was situated at the point of release and has been excavated to bedrock. TPH concentrations of all other samples were below laboratory detection limits.
- Concentrations of benzene and total BTEX were below OCD site-specific cleanup criteria in all samples.
- Concentrations of chlorides in two locations (SB2 SW and SB6) exceeded the OCD site-specific cleanup criteria. SB2 SW is a sidewall sample situated adjacent to the point of release; SB6 was situated at the west end of the excavation which has been excavated 0.5 to 1 ft bgs. The deepest sample from SB6 (i.e. SB6 4.5-5') was collected at bedrock.
- Concentrations of chlorides in SB7 Spoil (or stockpiled soils) were above the OCD's site-specific cleanup criteria; soils are not suitable for reuse.

Remedial Action Plan

The following is recommended to bring the Site in compliance:

- Excavate additional soils:
  - south of the point of release in the area of SB2 to remove chloride-impacted soils
  - in the area of SB6 to remove chloride-impacted soils at the west end of the excavation
  - all excavations to bedrock
- Dispose of all excavated soil from initial and subsequent excavations to an approved commercial disposal facility
- Install a high-density polyethylene (HDPE) liner in the base of the excavation to prevent residual chloride in bedrock from wicking to the surface via evapotranspiration
- Fill excavation with clean fill material

Following implementation of this remedial action plan, we will file a written report documenting the work conducted.

If you have any questions regarding this letter or need further assistance, please call us at (979) 324-2139.

Sincerely,
Timberwolf Environmental, LLC

Jim Foster
Principal

Austin Russell
Senior Project Manager

Attachments: Figures
Photographs
Laboratory Reports and Chain-of-Custody Documents

FIGURES

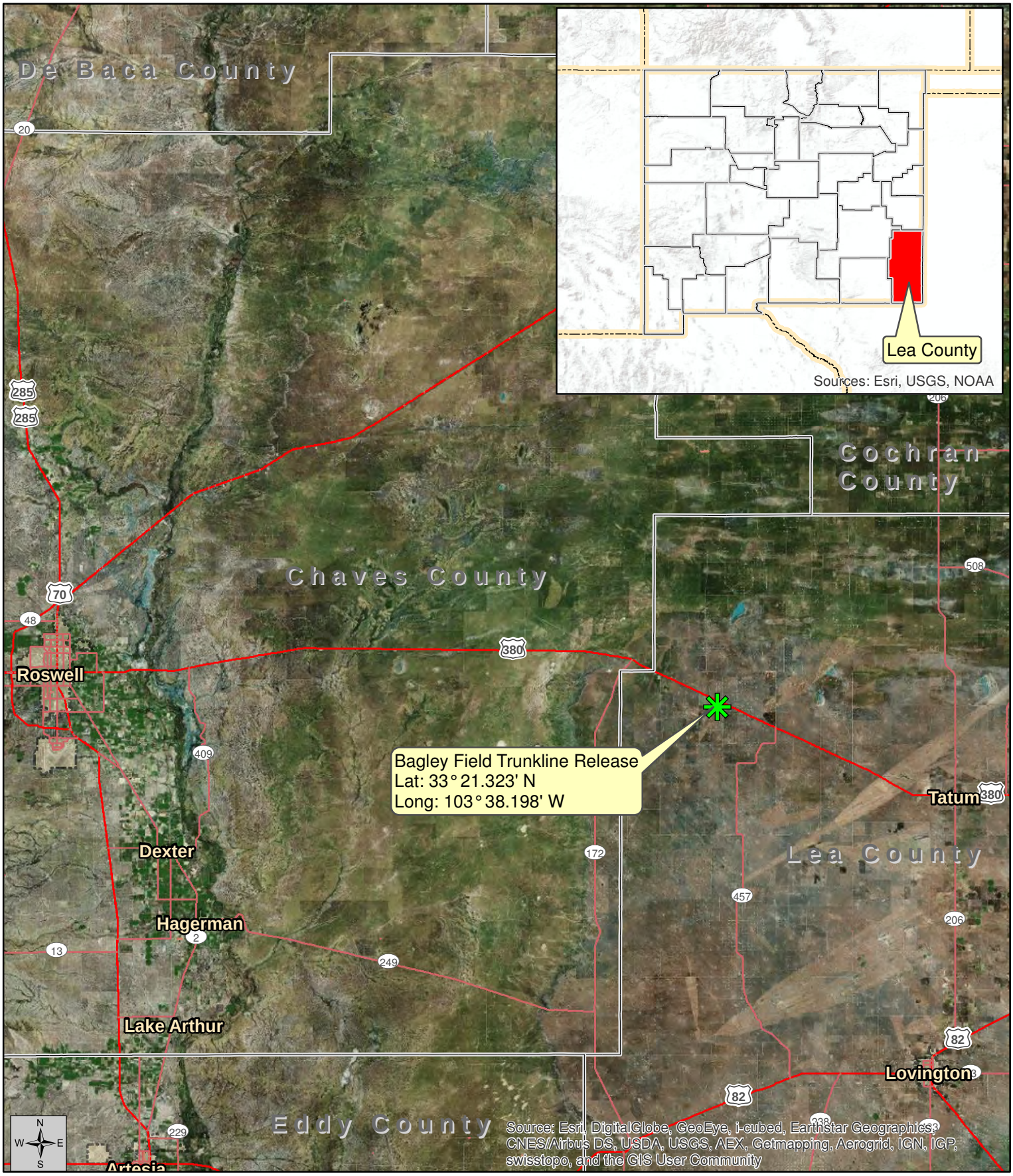


Figure 1 **Site Location Map**	**Assessment Report and Remedial Action Plan**	**Sample Dates:** **September 16, 2014 and April 22, 2015**
Timberwolf Environmental	1:750,000 0 5 10 15 20 25 Miles **Bagley Field Trunkline Release** **Jay Management Company, LLC** **Lea County, New Mexico**	Site Location County Boundary
Created By: Austin Russell March 5, 2015 JMGT_SAMP_14048	Datum: NAD83 Imagery Source: ESRI Vector Source: TE	

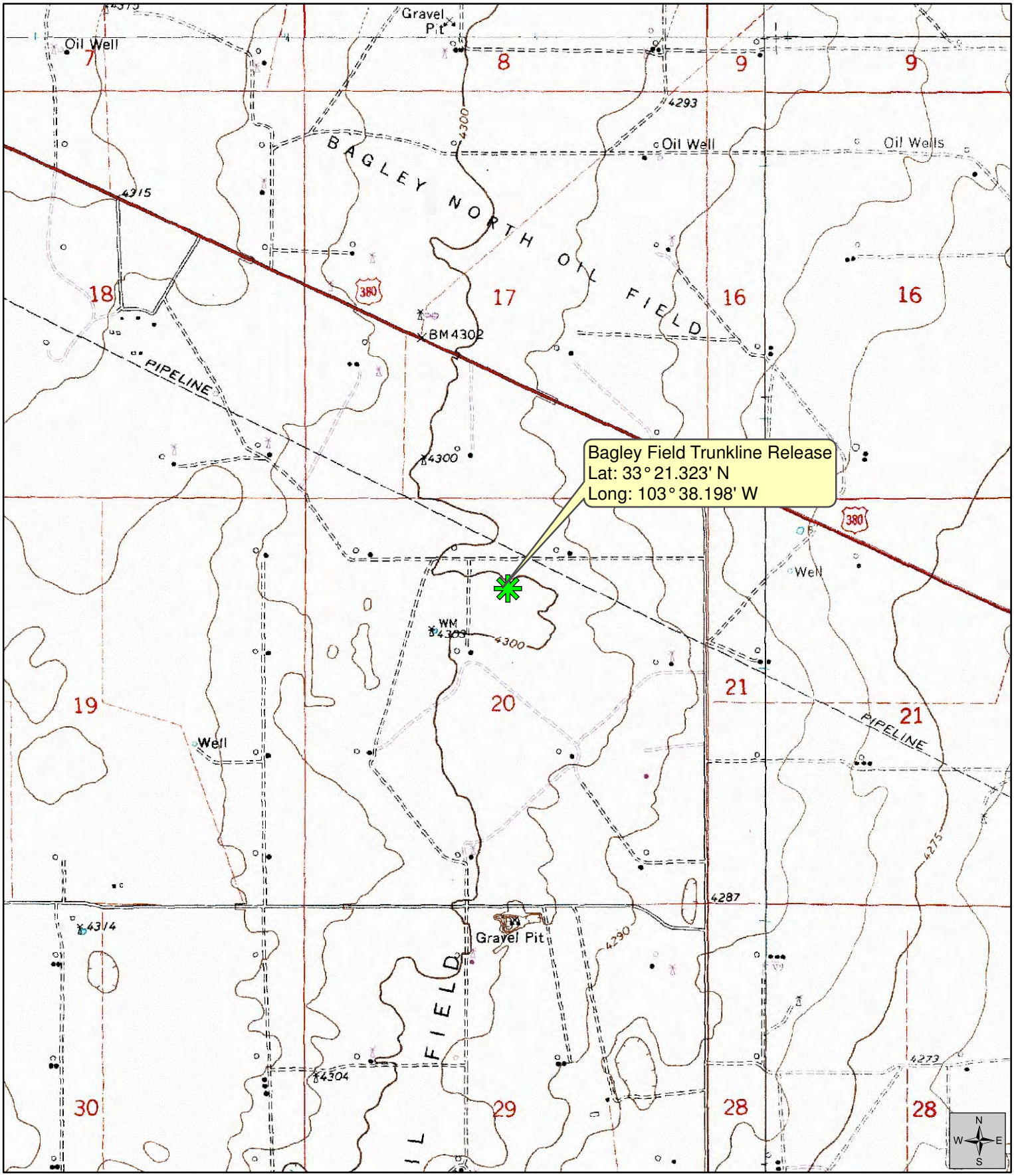
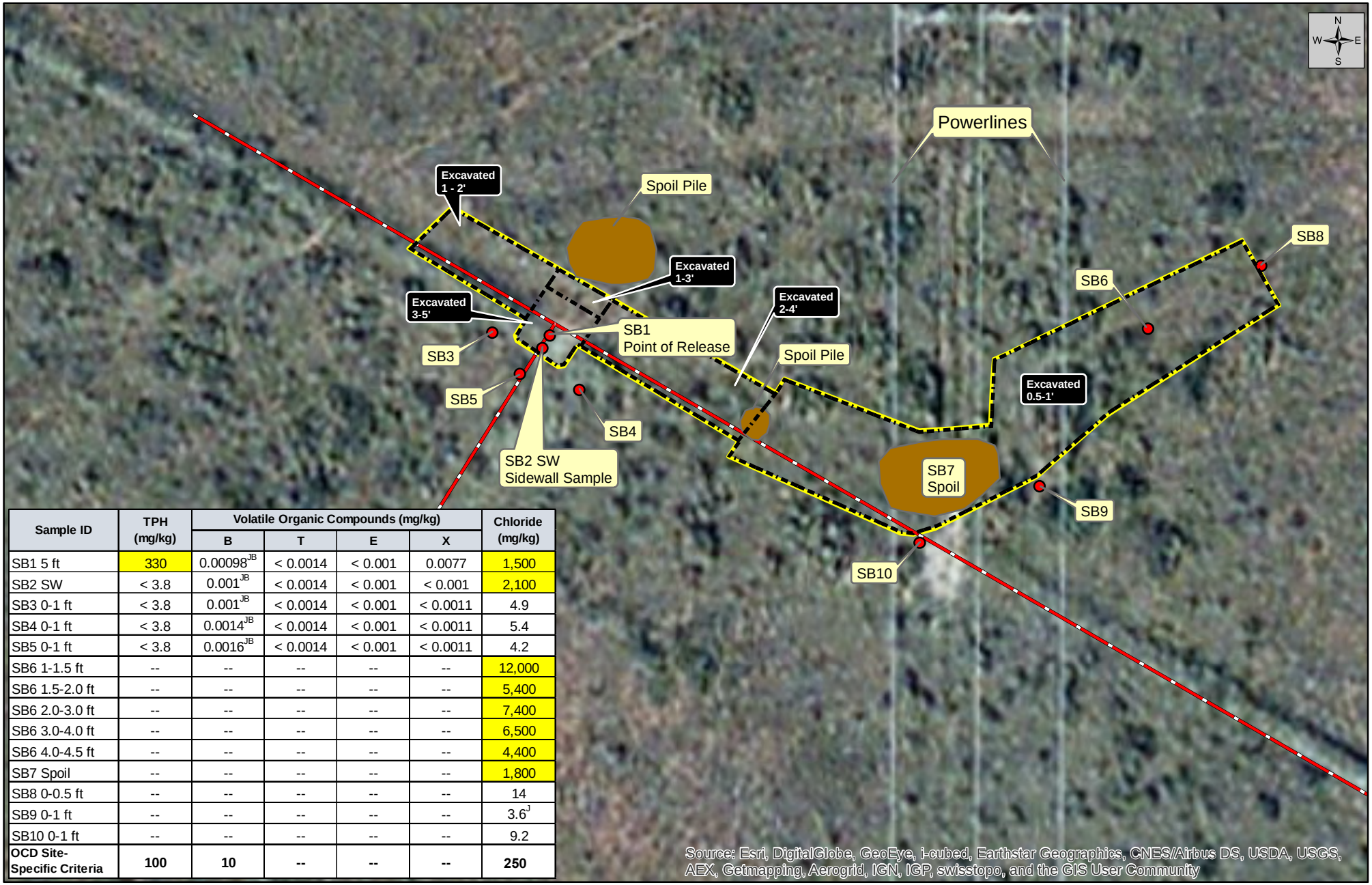


Figure 2 **Topographic Map**	**Assessment Report and Remedial Action Plan**	**Sample Dates:** **September 16, 2014 and** **April 22, 2015**
Timberwolf Environmental	1:24,000 0 1,000 2,000 3,000 4,000 5,000 Feet **Bagley Field Trunkline Release** **Jay Management Company, LLC** **Lea County, New Mexico**	Site Location

Created By:
Austin Russell
March 5, 2015
JMGT_SAMP_14048

Datum: NAD83
Imagery Source: USGS
Quads: Soldier Hill & Dallas Store
Vector Source: TE

Figure 3 **2011 Aerial Map**	**Assessment Report and Remedial Action Plan**	**Sample Dates:** **September 16, 2014 and** **April 22, 2015**
Timberwolf Environmental	1:5,000 0 250 500 750 1,000 1,250 Feet Created By: Austin Russell March 5, 2015 JMGT_SAMP_14048 **Bagley Field Trunkline Release** **Jay Management Company, LLC** **Lea County, New Mexico** Datum: NAD83 Imagery Source: NAIP Vector Source: TE	Site Location Powerline Corridor



Sample ID	TPH (mg/kg)	Volatile Organic Compounds (mg/kg)				Chloride (mg/kg)
		B	T	E	X	
SB1 5 ft	330	0.00098[JB]	< 0.0014	< 0.001	0.0077	1,500
SB2 SW	< 3.8	0.001[JB]	< 0.0014	< 0.001	< 0.001	2,100
SB3 0-1 ft	< 3.8	0.001[JB]	< 0.0014	< 0.001	< 0.0011	4.9
SB4 0-1 ft	< 3.8	0.0014[JB]	< 0.0014	< 0.001	< 0.0011	5.4
SB5 0-1 ft	< 3.8	0.0016[JB]	< 0.0014	< 0.001	< 0.0011	4.2
SB6 1-1.5 ft	--	--	--	--	--	12,000
SB6 1.5-2.0 ft	--	--	--	--	--	5,400
SB6 2.0-3.0 ft	--	--	--	--	--	7,400
SB6 3.0-4.0 ft	--	--	--	--	--	6,500
SB6 4.0-4.5 ft	--	--	--	--	--	4,400
SB7 Spoil	--	--	--	--	--	1,800
SB8 0-0.5 ft	--	--	--	--	--	14
SB9 0-1 ft	--	--	--	--	--	3.6[J]
SB10 0-1 ft	--	--	--	--	--	9.2
OCD Site-Specific Criteria	**100**	**10**	**--**	**--**	**--**	**250**

Figure 4
Sample Location Plat

Assessment Report and Remedial Action Plan

Sample Dates:
September 16, 2014 and
April 22, 2015

Timberwolf Environmental

1:600

0 50 100 150 200 250 Feet

Created By:
Austin Russell
April 27, 2015
JMGT_SAMP_14048

Bagley Field Trunkline Release
Jay Management Company, LLC
Lea County, New Mexico

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

- Soil Sample Location
- Excavated Area
- Spoil Pile
- Pipeline

C-141 FORM

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 August 8, 2011

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

Jay Management Company	Contact: Jim Foster
2425 W South Suite 810, Houston, Texas 77027	Telephone No.: 979-324-2139
Satellite No. 1 Trunkline	Facility Type: Produced Water Pipeline

Surface Owner:	Mineral Owner:	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range					County
	20	11S	33E	2,940 Feet from the	North Line	320 Feet from the	East Line	Lea

Latitude 33° 21.025' N **Longitude** 103° 37.748' W

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 2-3 barrels	Volume Recovered: 0 barrels
Source of Release: Trunkline Leak	Date and Hour of Occurrence: Unknown	Date and Hour of Discovery: August 29, 2014 / Time: 3:00 pm
Was Immediate Notice Given? ☐ Yes ☐ No X 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.*

No watercourse was impacted.

Describe Cause of Problem and Remedial Action Taken.*

The release occurred from a leak in the Satellite No. 1 Trunkline (8-inch) at the junction of a 2-inch line. The release occurred approximately 50 ft northeast of the Kay No. 1 well.

Describe Area Affected and Cleanup Action Taken.*

The affected area is approximately 20-feet by 40-feet (0.02 acres) in size. No remedial action has been taken to date. Repairs to the line are currently underway.

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: Jim Foster	OIL CONSERVATION DIVISION Approved by Environmental Specialist:	
Jim Foster		
Consultant	Approval Date:	Expiration Date:
jim@teamtimberwolf.com	Conditions of Approval:	Attached ☐
09/03/2014 Phone: (979) 324-2139		

* Attach Additional Sheets If Necessary

PHOTOGRAPHIC LOG

Photographic Documentation
Bagley Field Trunkline Release
Bagley West Field, Lea County, New Mexico

Photograph 1 - A view looking southeast at the exposed Bagley Field Trunkline and the point of release.

Photograph 2 - A view looking southeast at the exposed Bagley Field Trunkline and the point of release at the junction of a 2 inch field line.

Photographic Documentation
Bagley Field Trunkline Release
Bagley West Field, Lea County, New Mexico

Photograph 3 - A view looking northwest at the excavated area along the pipeline right-of-way within the spill area and spoil piles to be removed.

Photograph 4 - A view looking east at the excavated area and spoil piles along the spill area.

Photographic Documentation
Bagley Field Trunkline Release
Bagley West Field, Lea County, New Mexico

Photograph 5 - A view looking at the northeast at the eastern end of excavation and the location of SB6.

Photograph 6 - A view looking northeast at the western end of the excavation.

LABORATORY REPORT and CHAIN-OF-CUSTODY DOCUMENTS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-98922-1
Client Project/Site: Lea County, NM
Revision: 2

For:
Timberwolf Environmental LLC
1920 W. Vill Maria
Suite 305-2 Box 205
Bryan, Texas 77807

Attn: Austin Russell

Dean A. Joiner

Authorized for release by:
11/3/2014 7:14:06 PM

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

Table of Contents

Job ID: 600-98922-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-98922-1

Comments
This report was revised separating all samples from 600-98922-11 onto their own report at the request of the client.

Receipt
The samples were received on 9/17/2014 10:31 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.7° C.

GC/MS VOA
Method(s) 8260B: The method blank for batch 144805 contained benzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) 300.0: The following sample(s) was diluted to bring the concentration of target analytes within the calibration range: MW1 (600-98922-11). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Industrial Hygiene
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL HOU
TX 1005	Texas - Total Petroleum Hydrocarbon (GC)	TCEQ	TAL HOU
9056	Anions, Ion Chromatography	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TCEQ = Texas Commission of Environmental Quality

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-98922-1	SB1 5 ft	Solid	09/16/14 07:55	09/17/14 10:31
600-98922-2	SB2 SW	Solid	09/16/14 08:30	09/17/14 10:31
600-98922-3	SB3 0-1 ft	Solid	09/16/14 08:55	09/17/14 10:31
600-98922-4	SB4 0-1 ft	Solid	09/16/14 09:05	09/17/14 10:31
600-98922-5	SB5 0-1 ft	Solid	09/16/14 09:10	09/17/14 10:31
600-98922-6	SB6 1-1.5 ft	Solid	09/16/14 09:15	09/17/14 10:31
600-98922-7	SB7 Spoil	Solid	09/16/14 09:20	09/17/14 10:31
600-98922-8	SB8 0-0.5 ft	Solid	09/16/14 09:35	09/17/14 10:31
600-98922-9	SB9 0-1 ft	Solid	09/16/14 09:40	09/17/14 10:31
600-98922-10	SB10 0-1 ft	Solid	09/16/14 09:55	09/17/14 10:31

Client Sample ID: SB1 5 ft

Date Collected: 09/16/14 07:55
Date Received: 09/17/14 10:31

Lab Sample ID: 600-98922-1
Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.98**	**J B**	5.0	0.63	ug/Kg			09/23/14 16:17	1
Ethylbenzene	1.0	U	5.0	1.0	ug/Kg			09/23/14 16:17	1
Toluene	1.4	U	5.0	1.4	ug/Kg			09/23/14 16:17	1
Xylenes, Total	**7.7**		5.0	1.1	ug/Kg			09/23/14 16:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*61 - 130*		*09/23/14 16:17*	*1*
Dibromofluoromethane	*85*		*68 - 140*		*09/23/14 16:17*	*1*
Toluene-d8 (Surr)	*101*		*50 - 130*		*09/23/14 16:17*	*1*
4-Bromofluorobenzene	*99*		*57 - 140*		*09/23/14 16:17*	*1*

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12	**21**		10	3.8	mg/Kg		09/23/14 15:22	09/24/14 00:01	1
>C12-C28	**280**		10	4.0	mg/Kg		09/23/14 15:22	09/24/14 00:01	1
>C28-C35	**26**		10	4.0	mg/Kg		09/23/14 15:22	09/24/14 00:01	1
C6-C35	**330**		10	3.8	mg/Kg		09/23/14 15:22	09/24/14 00:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*70 - 130*	*09/23/14 15:22*	*09/24/14 00:01*	*1*

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1500**		40	0.68	mg/Kg			09/19/14 09:50	10

Client Sample ID: SB2 SW

Date Collected: 09/16/14 08:30
Date Received: 09/17/14 10:31

Lab Sample ID: 600-98922-2
Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.0**	**J B**	5.0	0.63	ug/Kg			09/23/14 16:41	1
Ethylbenzene	1.0	U	5.0	1.0	ug/Kg			09/23/14 16:41	1
Toluene	1.4	U	5.0	1.4	ug/Kg			09/23/14 16:41	1
Xylenes, Total	1.1	U	5.0	1.1	ug/Kg			09/23/14 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*77*		*61 - 130*		*09/23/14 16:41*	*1*
Dibromofluoromethane	*80*		*68 - 140*		*09/23/14 16:41*	*1*
Toluene-d8 (Surr)	*89*		*50 - 130*		*09/23/14 16:41*	*1*
4-Bromofluorobenzene	*87*		*57 - 140*		*09/23/14 16:41*	*1*

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12	3.8	U	10	3.8	mg/Kg		09/23/14 15:22	09/24/14 00:34	1
>C12-C28	4.1	U	10	4.1	mg/Kg		09/23/14 15:22	09/24/14 00:34	1
>C28-C35	4.1	U	10	4.1	mg/Kg		09/23/14 15:22	09/24/14 00:34	1
C6-C35	3.8	U	10	3.8	mg/Kg		09/23/14 15:22	09/24/14 00:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*92*		*70 - 130*	*09/23/14 15:22*	*09/24/14 00:34*	*1*

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

Client Sample ID: SB2 SW

Lab Sample ID: 600-98922-2

Date Collected: 09/16/14 08:30

Matrix: Solid

Date Received: 09/17/14 10:31

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2100		40	0.66	mg/Kg			09/19/14 10:37	10

Client Sample ID: SB3 0-1 ft

Lab Sample ID: 600-98922-3

Date Collected: 09/16/14 08:55

Matrix: Solid

Date Received: 09/17/14 10:31

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	J B	5.0	0.63	ug/Kg			09/23/14 17:06	1
Ethylbenzene	1.0	U	5.0	1.0	ug/Kg			09/23/14 17:06	1
Toluene	1.4	U	5.0	1.4	ug/Kg			09/23/14 17:06	1
Xylenes, Total	1.1	U	5.0	1.1	ug/Kg			09/23/14 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*76*		*61 - 130*		*09/23/14 17:06*	*1*
Dibromofluoromethane	*78*		*68 - 140*		*09/23/14 17:06*	*1*
Toluene-d8 (Surr)	*93*		*50 - 130*		*09/23/14 17:06*	*1*
4-Bromofluorobenzene	*88*		*57 - 140*		*09/23/14 17:06*	*1*

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12	3.8	U	10	3.8	mg/Kg		09/23/14 15:22	09/24/14 01:07	1
>C12-C28	4.0	U	10	4.0	mg/Kg		09/23/14 15:22	09/24/14 01:07	1
>C28-C35	4.0	U	10	4.0	mg/Kg		09/23/14 15:22	09/24/14 01:07	1
C6-C35	3.8	U	10	3.8	mg/Kg		09/23/14 15:22	09/24/14 01:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*70 - 130*	*09/23/14 15:22*	*09/24/14 01:07*	*1*

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.9		4.0	0.068	mg/Kg			09/19/14 10:52	1

Client Sample ID: SB4 0-1 ft

Lab Sample ID: 600-98922-4

Date Collected: 09/16/14 09:05

Matrix: Solid

Date Received: 09/17/14 10:31

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.4	J B	5.0	0.63	ug/Kg			09/23/14 17:31	1
Ethylbenzene	1.0	U	5.0	1.0	ug/Kg			09/23/14 17:31	1
Toluene	1.4	U	5.0	1.4	ug/Kg			09/23/14 17:31	1
Xylenes, Total	1.1	U	5.0	1.1	ug/Kg			09/23/14 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*61 - 130*		*09/23/14 17:31*	*1*
Dibromofluoromethane	*86*		*68 - 140*		*09/23/14 17:31*	*1*
Toluene-d8 (Surr)	*101*		*50 - 130*		*09/23/14 17:31*	*1*
4-Bromofluorobenzene	*93*		*57 - 140*		*09/23/14 17:31*	*1*

Client Sample ID: SB4 0-1 ft

Date Collected: 09/16/14 09:05
Date Received: 09/17/14 10:31

Lab Sample ID: 600-98922-4
Matrix: Solid

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12	3.8	U	9.9	3.8	mg/Kg		09/23/14 15:22	09/24/14 01:40	1
>C12-C28	4.0	U	9.9	4.0	mg/Kg		09/23/14 15:22	09/24/14 01:40	1
>C28-C35	4.0	U	9.9	4.0	mg/Kg		09/23/14 15:22	09/24/14 01:40	1
C6-C35	3.8	U	9.9	3.8	mg/Kg		09/23/14 15:22	09/24/14 01:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*91*		*70 - 130*	*09/23/14 15:22*	*09/24/14 01:40*	*1*

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.4**		4.0	0.067	mg/Kg			09/19/14 11:08	1

Client Sample ID: SB5 0-1 ft

Date Collected: 09/16/14 09:10
Date Received: 09/17/14 10:31

Lab Sample ID: 600-98922-5
Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.6**	**J B**	5.0	0.63	ug/Kg			09/23/14 17:55	1
Ethylbenzene	1.0	U	5.0	1.0	ug/Kg			09/23/14 17:55	1
Toluene	1.4	U	5.0	1.4	ug/Kg			09/23/14 17:55	1
Xylenes, Total	1.1	U	5.0	1.1	ug/Kg			09/23/14 17:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*76*		*61 - 130*		*09/23/14 17:55*	*1*
Dibromofluoromethane	*79*		*68 - 140*		*09/23/14 17:55*	*1*
Toluene-d8 (Surr)	*93*		*50 - 130*		*09/23/14 17:55*	*1*
4-Bromofluorobenzene	*88*		*57 - 140*		*09/23/14 17:55*	*1*

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12	3.8	U	10	3.8	mg/Kg		09/23/14 15:22	09/24/14 02:13	1
>C12-C28	4.0	U	10	4.0	mg/Kg		09/23/14 15:22	09/24/14 02:13	1
>C28-C35	4.0	U	10	4.0	mg/Kg		09/23/14 15:22	09/24/14 02:13	1
C6-C35	3.8	U	10	3.8	mg/Kg		09/23/14 15:22	09/24/14 02:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*70 - 130*	*09/23/14 15:22*	*09/24/14 02:13*	*1*

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.2**		4.0	0.068	mg/Kg			09/19/14 11:23	1

Client Sample ID: SB6 1-1.5 ft

Date Collected: 09/16/14 09:15
Date Received: 09/17/14 10:31

Lab Sample ID: 600-98922-6
Matrix: Solid

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12000**		2000	33	mg/Kg			09/19/14 11:39	500

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

Client Sample ID: SB7 Spoil — **Lab Sample ID: 600-98922-7**
Date Collected: 09/16/14 09:20 — **Matrix: Solid**
Date Received: 09/17/14 10:31

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800		40	0.66	mg/Kg			09/19/14 12:25	10

Client Sample ID: SB8 0-0.5 ft — **Lab Sample ID: 600-98922-8**
Date Collected: 09/16/14 09:35 — **Matrix: Solid**
Date Received: 09/17/14 10:31

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14		4.0	0.068	mg/Kg			09/19/14 12:41	1

Client Sample ID: SB9 0-1 ft — **Lab Sample ID: 600-98922-9**
Date Collected: 09/16/14 09:40 — **Matrix: Solid**
Date Received: 09/17/14 10:31

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6	J	4.0	0.067	mg/Kg			09/19/14 12:56	1

Client Sample ID: SB10 0-1 ft — **Lab Sample ID: 600-98922-10**
Date Collected: 09/16/14 09:55 — **Matrix: Solid**
Date Received: 09/17/14 10:31

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.2		4.0	0.067	mg/Kg			09/19/14 13:12	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Surrogate Summary

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(61-130)	(68-140)	(50-130)	(57-140)
600-98922-1	SB1 5 ft	84	85	101	99
600-98922-2	SB2 SW	77	80	89	87
600-98922-3	SB3 0-1 ft	76	78	93	88
600-98922-4	SB4 0-1 ft	82	86	101	93
600-98922-5	SB5 0-1 ft	76	79	93	88

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		OTPH
Lab Sample ID	Client Sample ID	(70-130)
600-98922-1	SB1 5 ft	93
600-98922-2	SB2 SW	92
600-98922-3	SB3 0-1 ft	93
600-98922-4	SB4 0-1 ft	91
600-98922-5	SB5 0-1 ft	95

Surrogate Legend

OTPH = o-Terphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 600-144699/6
Matrix: Water
Analysis Batch: 144699

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.080	U	1.0	0.080	ug/L			09/22/14 12:52	1
Ethylbenzene	0.11	U	1.0	0.11	ug/L			09/22/14 12:52	1
Toluene	0.15	U	1.0	0.15	ug/L			09/22/14 12:52	1
Xylenes, Total	0.26	U	1.0	0.26	ug/L			09/22/14 12:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*50 - 134*		*09/22/14 12:52*	*1*
Dibromofluoromethane	*93*		*62 - 130*		*09/22/14 12:52*	*1*
Toluene-d8 (Surr)	*111*		*70 - 130*		*09/22/14 12:52*	*1*
4-Bromofluorobenzene	*126*		*67 - 139*		*09/22/14 12:52*	*1*

Lab Sample ID: LCS 600-144699/3
Matrix: Water
Analysis Batch: 144699

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			10.0	10.1		ug/L		101	70 - 130		
Ethylbenzene			10.0	8.92		ug/L		89	70 - 130		
Toluene			10.0	8.93		ug/L		89	70 - 130		
Xylenes, Total			20.0	18.3		ug/L		92	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*50 - 134*
Dibromofluoromethane	*98*		*62 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene	*124*		*67 - 139*

Lab Sample ID: LCSD 600-144699/4
Matrix: Water
Analysis Batch: 144699

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			10.0	10.4		ug/L		104	70 - 130	3	20
Ethylbenzene			10.0	9.39		ug/L		94	70 - 130	5	20
Toluene			10.0	9.47		ug/L		95	70 - 130	6	20
Xylenes, Total			20.0	19.4		ug/L		97	70 - 130	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*50 - 134*
Dibromofluoromethane	*95*		*62 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*
4-Bromofluorobenzene	*126*		*67 - 139*

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 600-144805/14
Matrix: Solid
Analysis Batch: 144805

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.835	J	5.0	0.63	ug/Kg			09/23/14 14:14	1
Ethylbenzene	1.0	U	5.0	1.0	ug/Kg			09/23/14 14:14	1
Toluene	1.4	U	5.0	1.4	ug/Kg			09/23/14 14:14	1
Xylenes, Total	1.1	U	5.0	1.1	ug/Kg			09/23/14 14:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*81*		*61 - 130*		*09/23/14 14:14*	*1*
Dibromofluoromethane	*82*		*68 - 140*		*09/23/14 14:14*	*1*
Toluene-d8 (Surr)	*94*		*50 - 130*		*09/23/14 14:14*	*1*
4-Bromofluorobenzene	*84*		*57 - 140*		*09/23/14 14:14*	*1*

Lab Sample ID: LCS 600-144805/1011
Matrix: Solid
Analysis Batch: 144805

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			50.0	47.9		ug/Kg		96	70 - 131		
Ethylbenzene			50.0	51.1		ug/Kg		102	66 - 130		
Toluene			50.0	48.9		ug/Kg		98	67 - 130		
Xylenes, Total			100	102		ug/Kg		102	63 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*61 - 130*
Dibromofluoromethane	*97*		*68 - 140*
Toluene-d8 (Surr)	*98*		*50 - 130*
4-Bromofluorobenzene	*97*		*57 - 140*

Lab Sample ID: LCSD 600-144805/12
Matrix: Solid
Analysis Batch: 144805

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			50.0	50.8		ug/Kg		102	70 - 131	6	30
Ethylbenzene			50.0	56.2		ug/Kg		112	66 - 130	9	30
Toluene			50.0	55.1		ug/Kg		110	67 - 130	12	30
Xylenes, Total			100	110		ug/Kg		110	63 - 130	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*61 - 130*
Dibromofluoromethane	*100*		*68 - 140*
Toluene-d8 (Surr)	*110*		*50 - 130*
4-Bromofluorobenzene	*102*		*57 - 140*

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Lab Sample ID: MB 600-144815/1-A
Matrix: Solid
Analysis Batch: 144847

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 144815

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12	3.8	U	10	3.8	mg/Kg		09/23/14 10:29	09/23/14 14:48	1
>C12-C28	4.1	U	10	4.1	mg/Kg		09/23/14 10:29	09/23/14 14:48	1
>C28-C35	4.1	U	10	4.1	mg/Kg		09/23/14 10:29	09/23/14 14:48	1
C6-C35	3.8	U	10	3.8	mg/Kg		09/23/14 10:29	09/23/14 14:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*70 - 130*	*09/23/14 10:29*	*09/23/14 14:48*	*1*

Lab Sample ID: LCS 600-144815/2-A
Matrix: Solid
Analysis Batch: 144847

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 144815

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C6-C12	250	224		mg/Kg		90	75 - 125
>C12-C28	250	211		mg/Kg		84	75 - 125
C6-C35	500	435		mg/Kg		87	75 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*87*		*70 - 130*

Lab Sample ID: MB 600-144937/1-A
Matrix: Water
Analysis Batch: 144934

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 144937

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12	0.83	U	2.0	0.83	mg/L		09/24/14 11:00	09/24/14 12:51	1
>C12-C28	0.96	U	2.0	0.96	mg/L		09/24/14 11:00	09/24/14 12:51	1
>C28-C35	0.96	U	2.0	0.96	mg/L		09/24/14 11:00	09/24/14 12:51	1
C6-C35	0.83	U	2.0	0.83	mg/L		09/24/14 11:00	09/24/14 12:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*99*		*70 - 130*	*09/24/14 11:00*	*09/24/14 12:51*	*1*

Lab Sample ID: LCS 600-144937/2-A
Matrix: Water
Analysis Batch: 144934

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 144937

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C6-C12	33.3	30.3		mg/L		91	75 - 125
>C12-C28	33.3	29.7		mg/L		89	75 - 125
C6-C35	66.7	60.0		mg/L		90	75 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*101*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-144517/4
Matrix: Water
Analysis Batch: 144517

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.053	U	0.40	0.053	mg/L			09/18/14 15:20	1

Lab Sample ID: LCS 600-144517/5
Matrix: Water
Analysis Batch: 144517

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.8		mg/L		99	90 - 110

Method: 9056 - Anions, Ion Chromatography

Lab Sample ID: MB 600-144571/1-A
Matrix: Solid
Analysis Batch: 144575

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.068	U	4.0	0.068	mg/Kg			09/19/14 09:19	1

Lab Sample ID: LCS 600-144571/2-A
Matrix: Solid
Analysis Batch: 144575

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	201	202		mg/Kg		101	90 - 110

Lab Sample ID: 600-98922-1 MS
Matrix: Solid
Analysis Batch: 144575

Client Sample ID: SB1 5 ft
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1500		1010	2440		mg/Kg		90	80 - 120

Lab Sample ID: 600-98922-1 MSD
Matrix: Solid
Analysis Batch: 144575

Client Sample ID: SB1 5 ft
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1500		1010	2380		mg/Kg		85	80 - 120	2	20

Lab Sample ID: 600-98922-6 MS
Matrix: Solid
Analysis Batch: 144575

Client Sample ID: SB6 1-1.5 ft
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	12000		49800	53700		mg/Kg		84	80 - 120

Method: 9056 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 600-98922-6 MSD
Matrix: Solid
Analysis Batch: 144575

Client Sample ID: SB6 1-1.5 ft
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	12000		49800	53700		mg/Kg		84	80 - 120	0	20

Unadjusted Detection Limits

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	MQL	MDL	Units	Method
Benzene	5.0	0.63	ug/Kg	8260B
Ethylbenzene	5.0	1.0	ug/Kg	8260B
Toluene	5.0	1.4	ug/Kg	8260B
Xylenes, Total	5.0	1.1	ug/Kg	8260B

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	MQL	MDL	Units	Method
>C12-C28	10	4.1	mg/Kg	TX 1005
>C28-C35	10	4.1	mg/Kg	TX 1005
C6-C12	10	3.8	mg/Kg	TX 1005
C6-C35	10	3.8	mg/Kg	TX 1005

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	MQL	MDL	Units	Method
Chloride	4.0	0.067	mg/Kg	9056

QC Association Summary

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

GC/MS VOA

Analysis Batch: 144805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-98922-1	SB1 5 ft	Total/NA	Solid	8260B	
600-98922-2	SB2 SW	Total/NA	Solid	8260B	
600-98922-3	SB3 0-1 ft	Total/NA	Solid	8260B	
600-98922-4	SB4 0-1 ft	Total/NA	Solid	8260B	
600-98922-5	SB5 0-1 ft	Total/NA	Solid	8260B	

GC Semi VOA

Prep Batch: 144815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-98922-1	SB1 5 ft	Total/NA	Solid	TX_1005_S_Prep	
600-98922-2	SB2 SW	Total/NA	Solid	TX_1005_S_Prep	
600-98922-3	SB3 0-1 ft	Total/NA	Solid	TX_1005_S_Prep	
600-98922-4	SB4 0-1 ft	Total/NA	Solid	TX_1005_S_Prep	
600-98922-5	SB5 0-1 ft	Total/NA	Solid	TX_1005_S_Prep	

Analysis Batch: 144847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-98922-1	SB1 5 ft	Total/NA	Solid	TX 1005	144815
600-98922-2	SB2 SW	Total/NA	Solid	TX 1005	144815
600-98922-3	SB3 0-1 ft	Total/NA	Solid	TX 1005	144815
600-98922-4	SB4 0-1 ft	Total/NA	Solid	TX 1005	144815
600-98922-5	SB5 0-1 ft	Total/NA	Solid	TX 1005	144815

HPLC/IC

Leach Batch: 144571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-98922-1	SB1 5 ft	Soluble	Solid	DI Leach	
600-98922-2	SB2 SW	Soluble	Solid	DI Leach	
600-98922-3	SB3 0-1 ft	Soluble	Solid	DI Leach	
600-98922-4	SB4 0-1 ft	Soluble	Solid	DI Leach	
600-98922-5	SB5 0-1 ft	Soluble	Solid	DI Leach	
600-98922-6	SB6 1-1.5 ft	Soluble	Solid	DI Leach	
600-98922-7	SB7 Spoil	Soluble	Solid	DI Leach	
600-98922-8	SB8 0-0.5 ft	Soluble	Solid	DI Leach	
600-98922-9	SB9 0-1 ft	Soluble	Solid	DI Leach	
600-98922-10	SB10 0-1 ft	Soluble	Solid	DI Leach	

Analysis Batch: 144575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-98922-1	SB1 5 ft	Soluble	Solid	9056	144571
600-98922-2	SB2 SW	Soluble	Solid	9056	144571
600-98922-3	SB3 0-1 ft	Soluble	Solid	9056	144571
600-98922-4	SB4 0-1 ft	Soluble	Solid	9056	144571
600-98922-5	SB5 0-1 ft	Soluble	Solid	9056	144571

HPLC/IC (Continued)

Analysis Batch: 144575 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-98922-6	SB6 1-1.5 ft	Soluble	Solid	9056	144571
600-98922-7	SB7 Spoil	Soluble	Solid	9056	144571
600-98922-8	SB8 0-0.5 ft	Soluble	Solid	9056	144571
600-98922-9	SB9 0-1 ft	Soluble	Solid	9056	144571
600-98922-10	SB10 0-1 ft	Soluble	Solid	9056	144571

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

Client Sample ID: SB1 5 ft

Lab Sample ID: 600-98922-1

Date Collected: 09/16/14 07:55

Matrix: Solid

Date Received: 09/17/14 10:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 g	5 g	144805	09/23/14 16:17	DT1	TAL HOU
Total/NA	Prep	TX_1005_S_Prep			10.03 g	10.00 mL	144815	09/23/14 15:22	NVP	TAL HOU
Total/NA	Analysis	TX 1005		1	10.03 g	10.00 mL	144847	09/24/14 00:01	RJV	TAL HOU
Soluble	Leach	DI Leach			4.95 g	50 mL	144571	09/19/14 08:13	DAW	TAL HOU
Soluble	Analysis	9056		10	5 mL		144575	09/19/14 09:50	DAW	TAL HOU

Client Sample ID: SB2 SW

Lab Sample ID: 600-98922-2

Date Collected: 09/16/14 08:30

Matrix: Solid

Date Received: 09/17/14 10:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 g	5 g	144805	09/23/14 16:41	DT1	TAL HOU
Total/NA	Prep	TX_1005_S_Prep			10.02 g	10.00 mL	144815	09/23/14 15:22	NVP	TAL HOU
Total/NA	Analysis	TX 1005		1	10.02 g	10.00 mL	144847	09/24/14 00:34	RJV	TAL HOU
Soluble	Leach	DI Leach			5.04 g	50 mL	144571	09/19/14 08:13	DAW	TAL HOU
Soluble	Analysis	9056		10	5 mL		144575	09/19/14 10:37	DAW	TAL HOU

Client Sample ID: SB3 0-1 ft

Lab Sample ID: 600-98922-3

Date Collected: 09/16/14 08:55

Matrix: Solid

Date Received: 09/17/14 10:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 g	5 g	144805	09/23/14 17:06	DT1	TAL HOU
Total/NA	Prep	TX_1005_S_Prep			10.03 g	10.00 mL	144815	09/23/14 15:22	NVP	TAL HOU
Total/NA	Analysis	TX 1005		1	10.03 g	10.00 mL	144847	09/24/14 01:07	RJV	TAL HOU
Soluble	Leach	DI Leach			4.94 g	50 mL	144571	09/19/14 08:13	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL		144575	09/19/14 10:52	DAW	TAL HOU

Client Sample ID: SB4 0-1 ft

Lab Sample ID: 600-98922-4

Date Collected: 09/16/14 09:05

Matrix: Solid

Date Received: 09/17/14 10:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 g	5 g	144805	09/23/14 17:31	DT1	TAL HOU
Total/NA	Prep	TX_1005_S_Prep			10.07 g	10.00 mL	144815	09/23/14 15:22	NVP	TAL HOU
Total/NA	Analysis	TX 1005		1	10.07 g	10.00 mL	144847	09/24/14 01:40	RJV	TAL HOU
Soluble	Leach	DI Leach			4.98 g	50 mL	144571	09/19/14 08:13	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL		144575	09/19/14 11:08	DAW	TAL HOU

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

Client Sample ID: SB5 0-1 ft

Lab Sample ID: 600-98922-5

Date Collected: 09/16/14 09:10
Matrix: Solid
Date Received: 09/17/14 10:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 g	5 g	144805	09/23/14 17:55	DT1	TAL HOU
Total/NA	Prep	TX_1005_S_Prep			10.03 g	10.00 mL	144815	09/23/14 15:22	NVP	TAL HOU
Total/NA	Analysis	TX 1005		1	10.03 g	10.00 mL	144847	09/24/14 02:13	RJV	TAL HOU
Soluble	Leach	DI Leach			4.96 g	50 mL	144571	09/19/14 08:13	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL		144575	09/19/14 11:23	DAW	TAL HOU

Client Sample ID: SB6 1-1.5 ft

Lab Sample ID: 600-98922-6

Date Collected: 09/16/14 09:15
Matrix: Solid
Date Received: 09/17/14 10:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.02 g	50 mL	144571	09/19/14 08:13	DAW	TAL HOU
Soluble	Analysis	9056		500	5 mL		144575	09/19/14 11:39	DAW	TAL HOU

Client Sample ID: SB7 Spoil

Lab Sample ID: 600-98922-7

Date Collected: 09/16/14 09:20
Matrix: Solid
Date Received: 09/17/14 10:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.05 g	50 mL	144571	09/19/14 08:13	DAW	TAL HOU
Soluble	Analysis	9056		10	5 mL		144575	09/19/14 12:25	DAW	TAL HOU

Client Sample ID: SB8 0-0.5 ft

Lab Sample ID: 600-98922-8

Date Collected: 09/16/14 09:35
Matrix: Solid
Date Received: 09/17/14 10:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.95 g	50 mL	144571	09/19/14 08:13	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL		144575	09/19/14 12:41	DAW	TAL HOU

Client Sample ID: SB9 0-1 ft

Lab Sample ID: 600-98922-9

Date Collected: 09/16/14 09:40
Matrix: Solid
Date Received: 09/17/14 10:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	144571	09/19/14 08:13	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL		144575	09/19/14 12:56	DAW	TAL HOU

Lab Chronicle

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

Client Sample ID: SB10 0-1 ft
Date Collected: 09/16/14 09:55
Date Received: 09/17/14 10:31

Lab Sample ID: 600-98922-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	144571	09/19/14 08:13	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL		144575	09/19/14 13:12	DAW	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Timberwolf Environmental LLC
Project/Site: Lea County, NM

TestAmerica Job ID: 600-98922-1

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-15
Louisiana	NELAP	6	30643	06-30-15
Oklahoma	State Program	6	1309	08-31-15 *
Texas	NELAP	6	T104704223	10-31-14 *
USDA	Federal		P330-14-00192	06-06-17
Utah	NELAP	8	TX00083	10-31-14 *

* Certification renewal pending - certification considered valid.

LAB INFO:
Name: Test America
Location: 6310 Rothway St., Houston TX 77040 713-690-4444

600-98922 Chain of Custody

Timberwolf Environmental

11/3/2014

Client Information	Sampler: Austin Russell	Lab PM: Vega	COC No: 600-24135-8805.1
Client Contact: Jim Foster	Phone:	E-Mail:	Page: Page 1 of 3
Company: Timberwolf Environmental			Job #:
Address: 1920 West Villa Maria Suite 305-2, Bryan, Texas 77807	Due Date Requested:		
Email: jim.foster@twolfenv.com	TAT Requested (days): Standard		
Phone: 979-324-2139	PO #:		
Project Name: Basley Field Trunkline Release	WO #:		
Project Number: JMGT-SAMP.14048	Project #:		
Site: Lea County, New Mexico	SSOW#:		

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify), Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	TX_1005 - Local Method	BTEX, TPH, Chlorides	Total Number of containers	Special Instructions/Note:
Preservation Code:										
SB1 5ft	09/16/14	0755	G	Soil				X	1	Freeze or Extract Immediately
SB2 SW	"	0830	C	"				X	1	
SB3 0-1ft	"	0855	G	"				X	1	
SB4 0-1ft	"	0905	G	"				X	1	
SB5 0-1ft	"	0910	G	"				X	1	
									12	
									12	
									12	
									12	
									12	
									12	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Austin Russell	Date/Time: 09/16/14	Company: Timberwolf	Received by:
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by: Date/Time: 9.17.14/10:31 Company: TA

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

LAB INFO:
Name: Test America
Location: 6310 Rothway St., Houston, TX 77040 713-690-4444

Timberwolf Environmental

11/3/2014

Client Information	Sampler: Austin Russell	Lab PM: Dean Joiner	Carrier Tracking No(s):	COC No: 600-24135-8805.1
Client Contact: Jim Foster	Phone:	E-Mail		Page: Page 1 of 3
Company: Timberwolf Environmental		Analysis Requested		Job #:

Address: 1920 West Villa Maria Suite 305-2, Bryan, Texas 77807	Due Date Requested:	
Email: jim.foster@twolfenv.com	TAT Requested (days): Standard	
Phone: 979-324-2139	PO #:	
Project Name: Bagley Field Foundation Release	WO #:	
Project Number: JMGT_SAMP_14048	Project #:	
Site: Lea County, NM	SSOW#:	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_1005_Local_Method	Chlorides	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
SB6 1-1.5ft	09/16/14	0915	G	Soil				X	12	L
SB7 Spoil	"	0920	G	"				X	12	L
SB8 0-0.5ft	"	0935	G	"				X	12	L
SB9 0-1ft	"	0940	G	"				X	12	L
SB10 0-1ft	"	0955	G	"				X	12	L
									12	
									12	
									12	
									12	
									12	
									12	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Austin Russell	09/16/14	Timberwolf			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Timberwolf Environmental LLC

Job Number: 600-98922-1

Login Number: 98922

List Source: TestAmerica Houston

List Number: 1

Creator: Joiner, Ninatchka M

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	False	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-110442-1
Client Project/Site: Analysis

For:
Timberwolf Environmental LLC
1920 W. Vill Maria
Suite 305-2 Box 205
Bryan, Texas 77807

Attn: James Foster

Jeanette Castillo

Authorized for release by:
4/30/2015 12:09:49 PM
Jeanette Castillo, Project Management Assistant I
jeanette.castillo@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

Table of Contents

Case Narrative

Client: Timberwolf Environmental LLC
Project/Site: Analysis

TestAmerica Job ID: 600-110442-1

Job ID: 600-110442-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-110442-1

Comments
No additional comments.

Receipt
The samples were received on 4/23/2015 10:08 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7° C.

General Chemistry
Method(s) 9056: The following sample(s) was diluted to bring the concentration of target analytes within the calibration range: less than 40 mg/l. Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Industrial Hygiene
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Timberwolf Environmental LLC
Project/Site: Analysis

TestAmerica Job ID: 600-110442-1

Method	Method Description	Protocol	Laboratory
9056	Anions, Ion Chromatography	SW846	TAL HOU
Moisture	Percent Moisture	EPA	TAL HOU

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Timberwolf Environmental LLC
Project/Site: Analysis

TestAmerica Job ID: 600-110442-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-110442-1	SB6 1.5-2.0'	Solid	04/22/15 08:35	04/23/15 10:08
600-110442-2	SB6 2.0-3.0'	Solid	04/22/15 08:45	04/23/15 10:08
600-110442-3	SB6 3.0-4.0'	Solid	04/22/15 08:55	04/23/15 10:08
600-110442-4	SB6 4.0-4.5'	Solid	04/22/15 09:15	04/23/15 10:08

Client Sample ID: SB6 1.5-2.0'

Lab Sample ID: 600-110442-1
Date Collected: 04/22/15 08:35
Matrix: Solid
Date Received: 04/23/15 10:08
Percent Solids: 76.1

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5400		110	14	mg/Kg	☼		04/29/15 11:56	20

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24		1.0	1.0	%			04/24/15 09:23	1
Percent Solids	76		1.0	1.0	%			04/24/15 09:23	1

Client Sample ID: SB6 2.0-3.0'

Lab Sample ID: 600-110442-2
Date Collected: 04/22/15 08:45
Matrix: Solid
Date Received: 04/23/15 10:08
Percent Solids: 83.1

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7400		97	13	mg/Kg	☼		04/29/15 10:56	20

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17		1.0	1.0	%			04/24/15 09:23	1
Percent Solids	83		1.0	1.0	%			04/24/15 09:23	1

Client Sample ID: SB6 3.0-4.0'

Lab Sample ID: 600-110442-3
Date Collected: 04/22/15 08:55
Matrix: Solid
Date Received: 04/23/15 10:08
Percent Solids: 83.6

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6500		96	13	mg/Kg	☼		04/29/15 11:16	20

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16		1.0	1.0	%			04/24/15 09:23	1
Percent Solids	84		1.0	1.0	%			04/24/15 09:23	1

Client Sample ID: SB6 4.0-4.5'

Lab Sample ID: 600-110442-4
Date Collected: 04/22/15 09:15
Matrix: Solid
Date Received: 04/23/15 10:08
Percent Solids: 79.5

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4400		50	6.7	mg/Kg	☼		04/29/15 11:36	10

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20		1.0	1.0	%			04/24/15 09:23	1
Percent Solids	80		1.0	1.0	%			04/24/15 09:23	1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Timberwolf Environmental LLC
Project/Site: Analysis

TestAmerica Job ID: 600-110442-1

Method: 9056 - Anions, Ion Chromatography

Lab Sample ID: MB 600-161212/1-A
Matrix: Solid
Analysis Batch: 161214

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.53	U	4.0	0.53	mg/Kg			04/29/15 09:16	1

Lab Sample ID: LCS 600-161212/2-A
Matrix: Solid
Analysis Batch: 161214

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			200	193		mg/Kg		97	90 - 110		

Lab Sample ID: 600-110442-1 MS
Matrix: Solid
Analysis Batch: 161214

Client Sample ID: SB6 1.5-2.0'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	5300	E	1320	6080	E 4	mg/Kg	☼	59	80 - 120		

Lab Sample ID: 600-110442-1 MSD
Matrix: Solid
Analysis Batch: 161214

Client Sample ID: SB6 1.5-2.0'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5300	E	1320	6110	E 4	mg/Kg	☼	61	80 - 120	1	20

Unadjusted Detection Limits

Client: Timberwolf Environmental LLC
Project/Site: Analysis

TestAmerica Job ID: 600-110442-1

Method: 9056 - Anions, Ion Chromatography - Soluble

Analyte	MQL	MDL	Units	Method
Chloride	4.0	0.53	mg/Kg	9056

General Chemistry

Analyte	MQL	MDL	Units	Method
Percent Moisture	1.0	1.0	%	Moisture
Percent Solids	1.0	1.0	%	Moisture

QC Association Summary

Client: Timberwolf Environmental LLC
Project/Site: Analysis

TestAmerica Job ID: 600-110442-1

HPLC/IC

Leach Batch: 161212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-110442-1	SB6 1.5-2.0'	Soluble	Solid	DI Leach	
600-110442-1 MS	SB6 1.5-2.0'	Soluble	Solid	DI Leach	
600-110442-1 MSD	SB6 1.5-2.0'	Soluble	Solid	DI Leach	
600-110442-2	SB6 2.0-3.0'	Soluble	Solid	DI Leach	
600-110442-3	SB6 3.0-4.0'	Soluble	Solid	DI Leach	
600-110442-4	SB6 4.0-4.5'	Soluble	Solid	DI Leach	
LCS 600-161212/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
MB 600-161212/1-A	Method Blank	Soluble	Solid	DI Leach	

Analysis Batch: 161214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-110442-1	SB6 1.5-2.0'	Soluble	Solid	9056	161212
600-110442-1 MS	SB6 1.5-2.0'	Soluble	Solid	9056	161212
600-110442-1 MSD	SB6 1.5-2.0'	Soluble	Solid	9056	161212
600-110442-2	SB6 2.0-3.0'	Soluble	Solid	9056	161212
600-110442-3	SB6 3.0-4.0'	Soluble	Solid	9056	161212
600-110442-4	SB6 4.0-4.5'	Soluble	Solid	9056	161212
LCS 600-161212/2-A	Lab Control Sample	Soluble	Solid	9056	161212
MB 600-161212/1-A	Method Blank	Soluble	Solid	9056	161212

General Chemistry

Analysis Batch: 160948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-110442-1	SB6 1.5-2.0'	Total/NA	Solid	Moisture	
600-110442-2	SB6 2.0-3.0'	Total/NA	Solid	Moisture	
600-110442-3	SB6 3.0-4.0'	Total/NA	Solid	Moisture	
600-110442-4	SB6 4.0-4.5'	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Timberwolf Environmental LLC
Project/Site: Analysis

TestAmerica Job ID: 600-110442-1

Client Sample ID: SB6 1.5-2.0'

Lab Sample ID: 600-110442-1
Date Collected: 04/22/15 08:35
Matrix: Solid
Date Received: 04/23/15 10:08
Percent Solids: 76.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	161212	04/28/15 16:14	DAW	TAL HOU
Soluble	Analysis	9056		20	5 mL		161214	04/29/15 11:56	DAW	TAL HOU
Total/NA	Analysis	Moisture		1			160948	04/24/15 09:23	MJB	TAL HOU

Client Sample ID: SB6 2.0-3.0'

Lab Sample ID: 600-110442-2
Date Collected: 04/22/15 08:45
Matrix: Solid
Date Received: 04/23/15 10:08
Percent Solids: 83.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.95 g	50 mL	161212	04/28/15 16:14	DAW	TAL HOU
Soluble	Analysis	9056		20	5 mL		161214	04/29/15 10:56	DAW	TAL HOU
Total/NA	Analysis	Moisture		1			160948	04/24/15 09:23	MJB	TAL HOU

Client Sample ID: SB6 3.0-4.0'

Lab Sample ID: 600-110442-3
Date Collected: 04/22/15 08:55
Matrix: Solid
Date Received: 04/23/15 10:08
Percent Solids: 83.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.96 g	50 mL	161212	04/28/15 16:14	DAW	TAL HOU
Soluble	Analysis	9056		20	5 mL		161214	04/29/15 11:16	DAW	TAL HOU
Total/NA	Analysis	Moisture		1			160948	04/24/15 09:23	MJB	TAL HOU

Client Sample ID: SB6 4.0-4.5'

Lab Sample ID: 600-110442-4
Date Collected: 04/22/15 09:15
Matrix: Solid
Date Received: 04/23/15 10:08
Percent Solids: 79.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.99 g	50 mL	161212	04/28/15 16:14	DAW	TAL HOU
Soluble	Analysis	9056		10	5 mL		161214	04/29/15 11:36	DAW	TAL HOU
Total/NA	Analysis	Moisture		1			160948	04/24/15 09:23	MJB	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Timberwolf Environmental LLC
Project/Site: Analysis

TestAmerica Job ID: 600-110442-1

Laboratory: TestAmerica Houston

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-15

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica

600-110442 Chain of Custody

Client Information	Sampler:	Lab PM: Joiner, Dean A	Carrier Tracking N
Client Contact: Austin Russell	Phone:	E-Mail: dean.joiner@testamericainc.com	
Company: Timberwolf Environmental LLC			
Address: 1920 W. Vill Maria Suite 305-2 Box 205	Due Date Requested:		
City: Bryan	TAT Requested (days):		
State, Zip: TX, 77807			
Phone:	PO #: Advance Payment Required		
Email: austin@teamtimberwolf.com	WO #:		
Project Name: ~~Analysis~~ Bagley Field Trunkline	Project #: 60003860		
Site:	SSOW#:		

Analysis Requested

Field Filtered Sample (Yes or No)
Perform MS/MSD (Yes or No)
Chlorides
Total Number of containers

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Special Instructions/Note:
			Preservation Code:		
SB6 1.5 - 2.0'	4/22	835	G	S	X
SB6 2.0 - 3.0'	"	845	"	"	X
SB6 3.0 - 4.0'	"	855	"	"	X
SB6 4.0 - 4.5'	"	915	"	"	X

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company
	[signature]	04/22/15 1646	Timberwolf	[signature]	4-23-15 1008	[signature]
	Relinquished by	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

4/30/2015

TestAmerica Houston

Sample Receipt Checklist

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

JOB NUMBER: Loc: 600 110442 ____ Date/Time Received: _____

CLIENT: Timberwolf

UNPACKED BY: _____ CARRIER/DRIVER: Fed Ex

Custody Seal Present: ☒ YES ☐ NO Number of Coolers Received: 1

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
BW	Y / N	Y / N	2.8	SR9	-.1	2.7
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☒ YES ☐ NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒ NO ☐ YES

Base samples are>pH 12: ☐ YES ☐ NO Acid preserved are<pH 2: ☐ YES ☐ NO

pH paper Lot # _____ 5011

VOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☒ NA

	YES	NO
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		

COMMENTS:

HS-SA-WI-013

Login Sample Receipt Checklist

Client: Timberwolf Environmental LLC

Job Number: 600-110442-1

Login Number: 110442

List Source: TestAmerica Houston

List Number: 1

Creator: Capps, Dana R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.