SITE INFORMATION

Report Type: Closure Report 1RP-4997

General Site Information:						
Site:	**BTA Vaca Draw 9418 10 Fed. Flowline Leak**					
Company:	**EOG Resources**					
Section, Township and Range	**Unit B**	**Sec. 10**	**T 25S**	**R 33 E**		
Lease Number:	**API No. 30-025-43611**					
County:	**Lea County**					
GPS:	**32.151400° N**			**103.561570° W**		
Surface Owner:	Federal					
Mineral Owner:	Federal					
Directions:	From the intersection of Hwy 128 and County Rd. 2 Head South on Cr-2 approx. 4.2 miles Location is on West side of lease Road.					

Release Data:	
Date Released:	3/1/2018
Type Release:	Produced Water and Oil
Source of Contamination:	Flowline
Fluid Released:	30 bbls PW, 20bbls Oil
Fluids Recovered:	0bbls

Official Communication:			
Name:	Jamon Hohensee		Ike Tavarez
Company:	EOG Resources		Tetra Tech
Address:	5509 Champions Dr		4000 N. Big Spring
			Ste 401
City:	Midland Texas, 79706		Midland, Texas
Phone number:	(432) 556-8074		(432) 687-8110
Fax:			
Email:	jamon_hohensee@eogresources.com		Ike.Tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	***0***	*125'-150'*
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	***0***	*0*
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	***0***	*0*
Total Ranking Score:	***0***	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	5,000

TETRA TECH

October 9, 2018

Ms. Olivia Yu
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Closure Request for the EOG Resources, BTA Vaca Draw 9418 10 Fed, Unit B, Section 10, Township 25 South, Range 33 East, Lea County, New Mexico. 1RP-4997

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by EOG Resources, Inc. (EOG) to investigate and assess a release that occurred at the Vaca Draw 9418 10 Fed, Unit B, Section 10, Township 25 South, Range 33 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.151400º, W 103.561570. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the release was discovered on March 1,2018, and released approximately thirty (30) barrels of produced water and twenty (20) barrels of oil due to an EOG drilling rig striking the BTA Oil Producer, LLC. production flowline while on location. Approximately six (6) barrels of fluid was recovered. The release occurred in the pasture and impacted an area measuring approximately 195 x 15'. The initial C-141 form is included in Appendix A.

Groundwater

No wells are listed within Section 10 in the New Mexico Office of the State Engineers (NMOSE) database, the USGS National Water Information System, or the Geology and Groundwater Conditions in Southern Lea County, NM (Report 6). The nearest well listed is on the NMOSE database in Section 13, approximately 2.0 miles southeast of the site, with a reported depth to groundwater of 185' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 125' and 150' below surface. The groundwater data is shown in Appendix B.

Tetra Tech
4000 North Big Spring, Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

On March 13, 2018, Tetra Tech personnel were onsite to evaluate and sample the release area. Three (3) auger holes (AH-1, AH-2, and AH-3) were installed in the spill area to total depths ranging from 1.5' and 2.5' below surface. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chlorides by EPA method 300.0. Copies of the laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown in Figure 3.

Referring to Table 1, the areas of auger holes (AH-1, AH-2, and AH-3) did not show any benzene, total BTEX, or TPH concentrations above the RRALs.

However, the areas of auger holes (AH-1, and AH-2) showed elevated chloride concentrations of 3,640 mg/kg and 1,180 mg/kg at 0-1' below surface, respectively. The chloride concentrations in these areas declined with depth to below the 600 mg/kg threshold at 1.0'-1.5' below surface. The area of auger hole (AH-3) showed a chloride high of 8.58 mg/kg at 1.0'-1.5' below surface.

Remediation Activities

On April 30, 2018, Tetra Tech personnel were onsite to supervise the excavation and remediation activities. The remediation was performed in accordance with the approved work plan. The excavated areas and depths are shown on Figure 4 and highlighted (green) in Table 1. The areas of auger holes (AH-1 and AH-2) were excavated to 1.0'-1.5' below surface.

To confirm proper removal of the impacted materials, Tetra Tech personnel collected two (2) bottom hole confirmation samples (Bottomhole #1 and Bottomhole #2) and six (6) sidewall samples (North Sidewall #1, South Sidewall #1, West Sidewall, North Sidewall #2, South Sidewall #2, and East Sidewall). The confirmation samples were submitted to the laboratory for chloride analysis by EPA method 300.0. Copies of the laboratory analysis and chain-of-custody documentation are included in Appendix C. The laboratory results are summarized in Table 1. The sampling locations are shown on Figure 4.

Referring to Table 1, all of the confirmation samples collected shown chloride concentrations below the laboratory reporting limits. Approximately 80 cubic yards of material hauled to proper disposal. The excavated areas will be backfilled to surface grade.

Conclusion

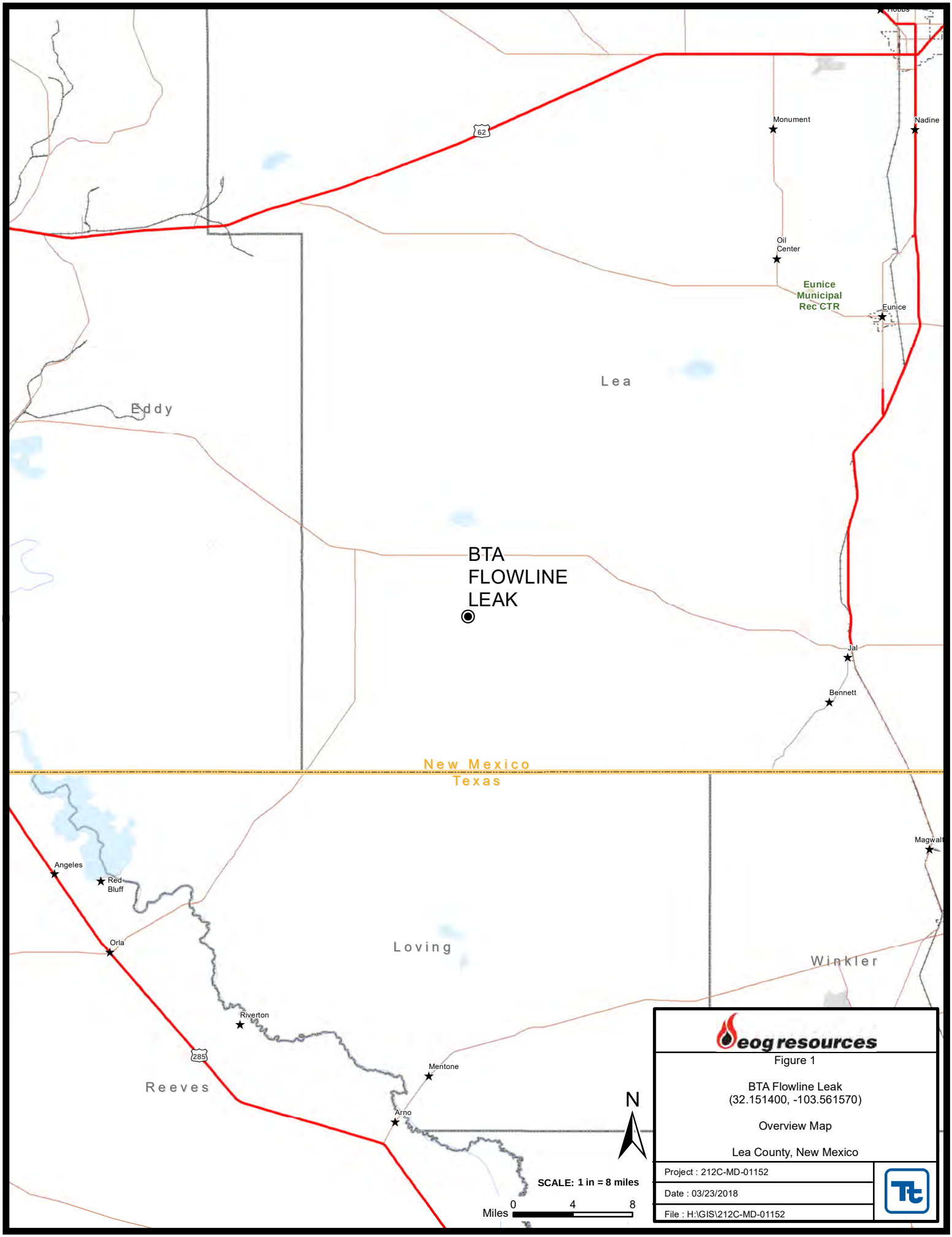
Based on the soil assessment and remediation work performed at the site, EOG requests closure of this spill. The final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Clair Gonzales,
Project Manager

Ike Tavarez,
Senior Project Manager, P.G.

Figures



eog resources

Figure 1

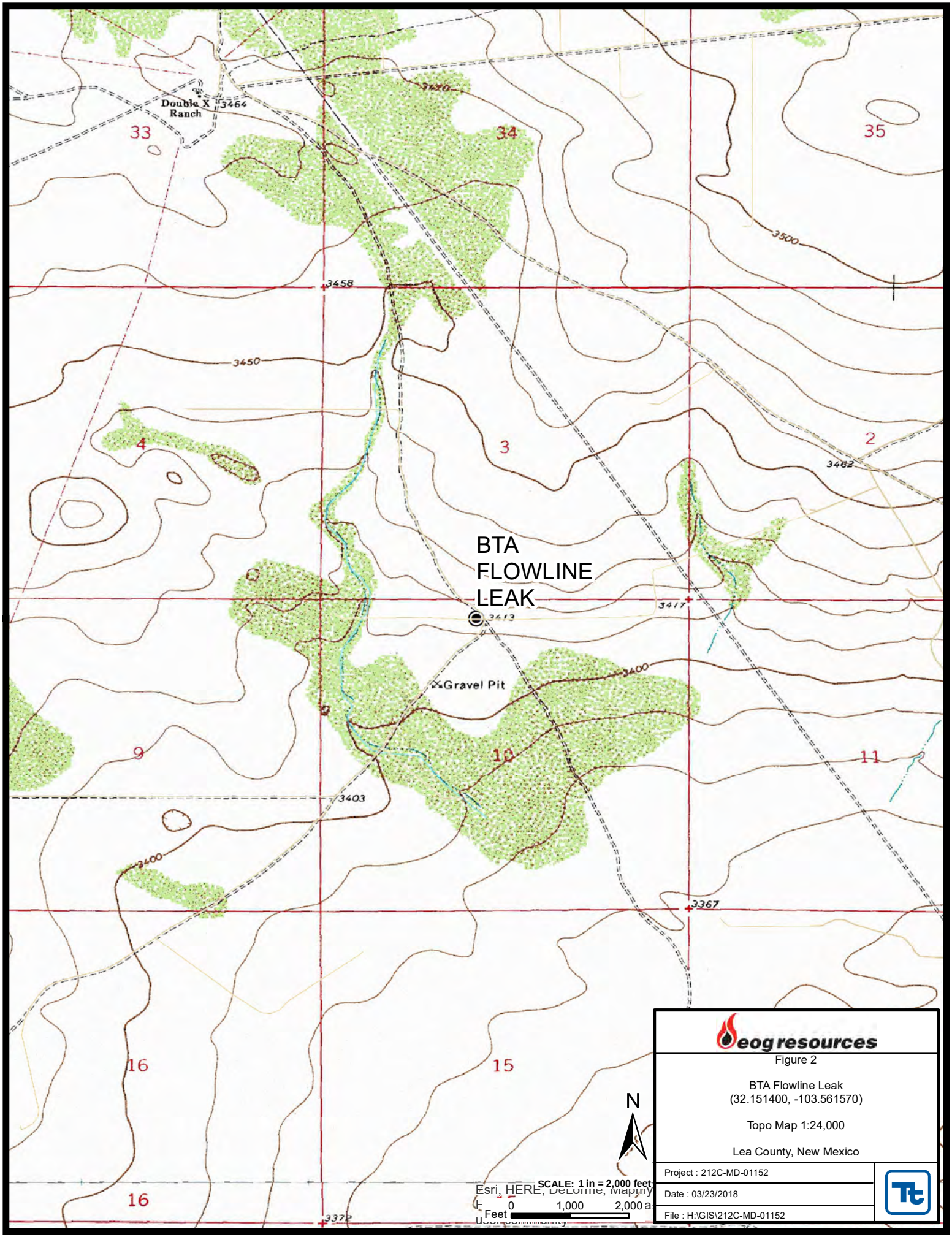
BTA Flowline Leak
(32.151400, -103.561570)

Overview Map

Lea County, New Mexico

Project : 212C-MD-01152	
Date : 03/23/2018	
File : H:\GIS\212C-MD-01152	

Mapped By: Isabel Marmolejo



eog resources

Figure 2

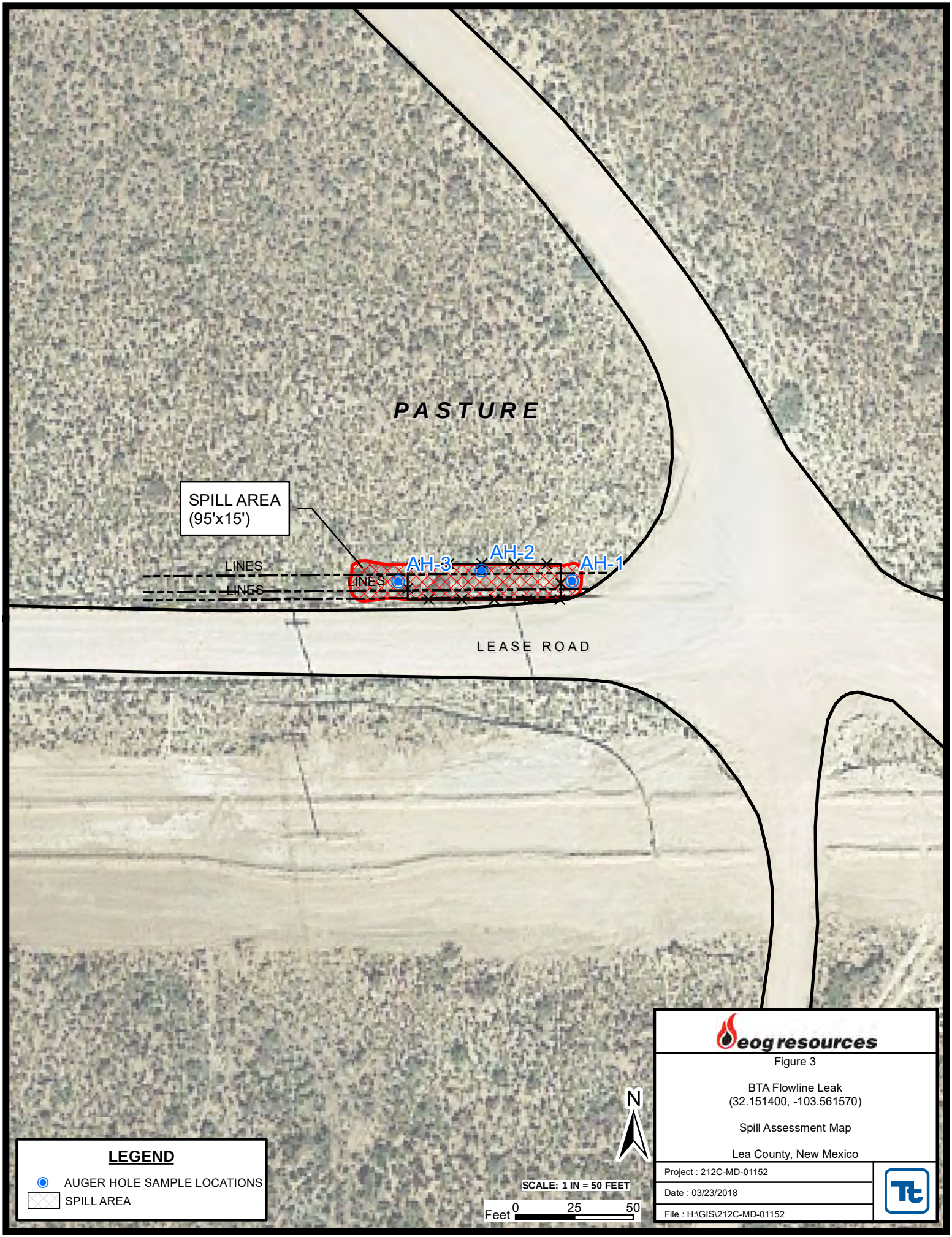
BTA Flowline Leak
(32.151400, -103.561570)

Topo Map 1:24,000

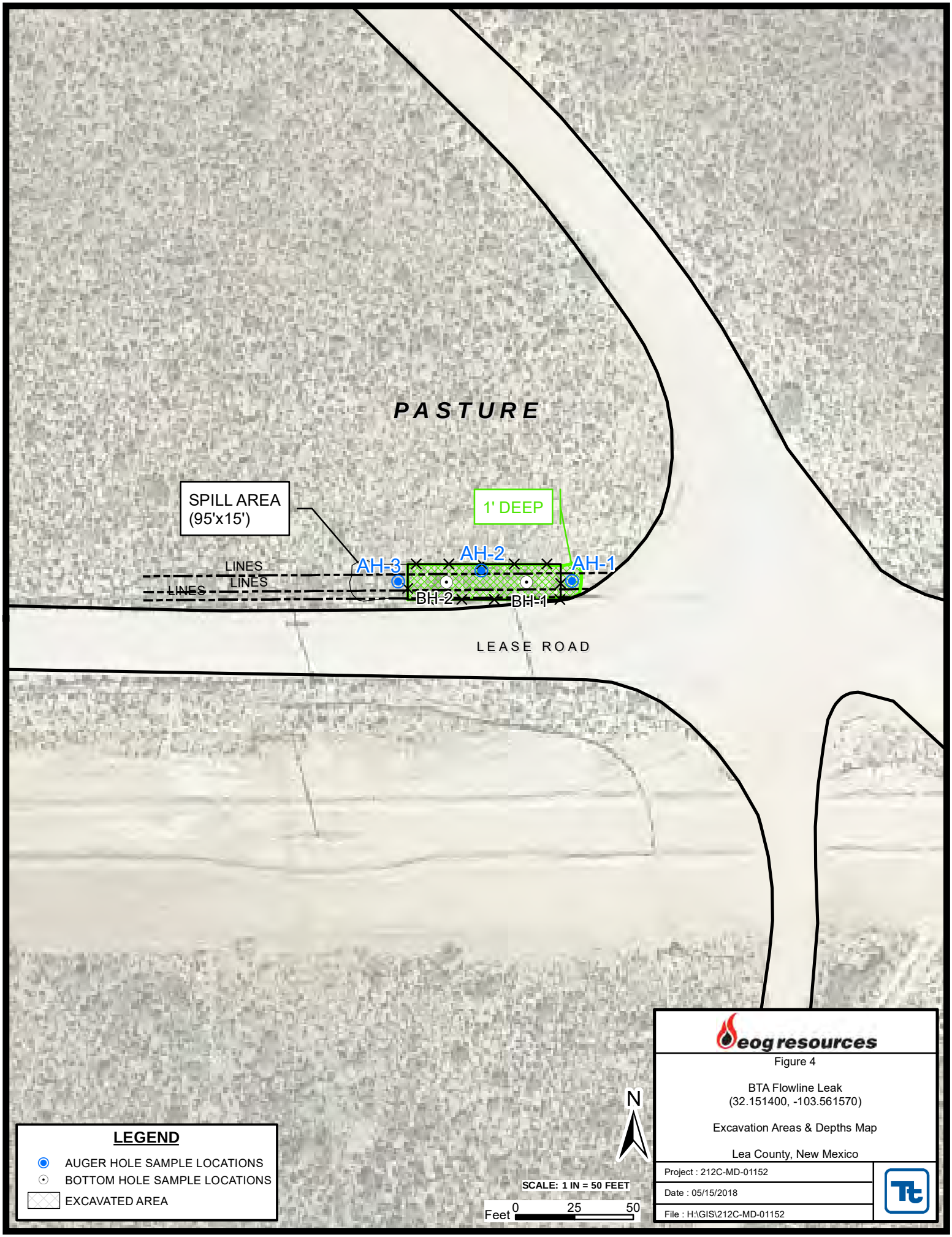
Lea County, New Mexico

Project : 212C-MD-01152	
Date : 03/23/2018	
File : H:\GIS\212C-MD-01152	

Mapped By: Isabel Marmolejo



Mapped By: Isabel Marmolejo



Mapped By: Isabel Marmolejo

Tables

Table 1
EOG Resources
BTA Vaca Draw 9418 #10 Federal
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	ORO	Total						
AH-1	3/13/2018	0-1	-		X	1,030	3,610	85.8	4,730	<0.200	9.08	4.85	26.4	40.4	**3,640**
	"	1-1.5	-	X		24.3	123	<15.0	147	0.00209	0.0792	0.0578	0.339	0.478	374
Bottomhole #1	4/30/2018	-	1-1.5	X		-	-	-	-	-	-	-	-	-	<4.90
North Sidewall #1	4/30/2018	-	-	X		-	-	-	-	-	-	-	-	-	<5.00
South Sidewall #1	4/30/2018	-	-	X		-	-	-	-	-	-	-	-	-	<5.00
West Sidewall	4/30/2018	-	-	X		-	-	-	-	-	-	-	-	-	<4.93
AH-2	3/13/2018	0-1	-		X	272	1,480	65	1,820	<0.201	0.933	0.933	6.00	7.87	**1,180**
	"	1-1.5	-	X		<15.0	24.7	<15.0	24.7	<0.00199	0.0182	0.0126	0.0810	0.112	<4.94
	"	1.5-2	-	X		-	-	-	-	-	-	-	-	-	<5.00
Bottomhole #2	4/30/2018	-	1-1.5	X		-	-	-	-	-	-	-	-	-	<5.00
North Sidewall #2	4/30/2018	-	-	X		-	-	-	-	-	-	-	-	-	<5.00
South Sidewall #2	4/30/2018	-	-	X		-	-	-	-	-	-	-	-	-	<4.90
East Sidewall	4/30/2018	-	-	X		-	-	-	-	-	-	-	-	-	<4.92
AH-3	3/13/2018	0-1	-	X		<15.0	29.4	<15.0	29.4	<0.00199	0.00248	<0.00199	<0.00199	0.00248	6.02
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<0.00202	0.00230	<0.00202	<0.00202	0.00230	8.58
	"	1.5-2	-	X		-	-	-	-	-	-	-	-	-	<5.00
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	<5.00

BEB — Below Excavation Bottom

(-) — Not Analyzed

Excavated Depths

Photos

EOG Resources, Inc.
BTA Vaca Draw 9418 10 Fed #6H
Lea County, New Mexico

View East of AH-1

View East of AH-2

EOG Resources, Inc.
BTA Vaca Draw 9418 10 Fed #6H
Lea County, New Mexico

View Southeast of AH-3

View Northeast of AH-1

EOG Resources, Inc.
BTA Vaca Draw 9418 10 Fed #6H
Lea County, New Mexico

View North of AH-2

View North of AH-3

EOG Resources, Inc.
BTA Vaca Draw 9418 10 Fed #6H
Lea County, New Mexico

View West – Excavated areas of AH-1 and AH-2

View East – Excavated areas of AH-1 and AH-2

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company BTA Oil Producer, LLC	Contact Kayla McConnell
Address 104 S. Pecos, Midland, TX 79701	Telephone No. (432) 682-3753
Facility Name Vaca Draw 9418 10 Fed	Facility Type Flowline

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-025-43611

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	10	25S	33E	190	North	2281	East	Lea

Latitude: 32.151810 Longitude: -103.559029 NAD83

NATURE OF RELEASE

Type of Release: Minor	Volume of Release 20 bbls Oil 30 bbls wtr	Volume Recovered
Source of Release: Flowline Brake	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Olivia Yu	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*
At approximately 10 pm 3/01/2018, EOG's drilling rig headed to a well site hit BTA's Vaca Draw 9418 10 Fed #6H production flowline. An estimated volume of 20 bbls of oil and 30 bbls of water was released. Approximately 6 bbl was recovered. EOG will be handling further cleanup needed.

Describe Area Affected and Cleanup Action Taken.*
See above explanation

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: Kayla McConnell	OIL CONSERVATION DIVISION	
Printed Name: Kayla McConnell	Approved by Environmental Specialist:	
Title: Regulatory Analyst	Approval Date:	Expiration Date:
E-mail Address: kmcconnell@btaoil.com	Conditions of Approval:	Attached ☐
Date: 3/19/2018 Phone: 432-682-3753		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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 October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **EOG Resources**	Contact **Jamon Hohensee**
Address **5509 Champions Drive, Midland, Tx 79706**	Telephone No. **(432)556-8074**
Facility Name Vaca Draw 9418 10 Federal #6	Facility Type **Flowline**

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-025-43611

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	10	25S	33E	190	North	2281	East	Lea

Latitude N 32.151810° **Longitude** W 103.559029° **NAD83**

NATURE OF RELEASE

Type of Release: Oil & Produced Water	Volume of Release 20 bbl oil & 30 bbls water	Volume Recovered 6 bbls
Source of Release: Flowline	Date and Hour of Occurrence 03/01/18 10:00pm	Date and Hour of Discovery 03/01/18 10:00pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Olivia Yu**	
By Whom?	Date and Hour 3/15/10 4:59 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

An EOG drilling rig headed to a well site struck a BTA Oil Producer, LLC. Flowline, resulting in the release.

Describe Area Affected and Cleanup Action Taken.*

On behalf of EOG, Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded thresholds were removed and hauled for proper disposal. Tetra Tech prepared closure report and submitted to NMOCD for review.

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:	OIL CONSERVATION DIVISION
Printed Name: Ike Tavarez (Agent for EOG)	Approved by District Supervisor:
Title: Project Manager	Approval Date: 5/25/2022 Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval: Operator to reveg to 19.15.29.13 NMAC Attached ☐
Date: 05/10/18 Phone: (432) 682-4559	

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
EOG Resources
Lea County, New Mexico

24 South 32 East

6	5	4	3	2	1
7	8	9	10 20	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33 290	34	35	36

24 South 33 East

6	5	4	3	2	1
7	8	9	10 24.6	11	12
18	17	16	15	14	13
19	20	21	22	23 208	24 16.9
30	29	28	27	26	25
31	32	33 93.2	34	35	36

24 South 34 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

25 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32 290	33	34	35	36

25 South 33 East

6	5 90	4	3 172	2	1
7	8	9	10 Site	11 140	12 200
18	17	16	15	14	13 185
19	20 200	21 120	22	23	24
30	29	28	27 125	26	25 110
31 257	32	33	34	35	36

25 South 34 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 333 180	22	23	24
30	29	28	27	26	25
31 295	32	33	34	35	36

26 South 33 East

6	5	4	3 175	2	1
7	8	9	10	11 145	12 200
18	17	16	15	14 135	13
19	20	21 120	22	23	24
30	29	28	27 125	26	25
31	32	33	34	35	36

26 South 34 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y		Depth Well	Depth Water	Water Column
C 02312		CUB	LE	1	2	1	05	25S	33E	632241	3559687*		150	90	60
C 02313		CUB	LE	2	3	3	26	25S	33E	636971	3552098*		150	110	40
C 02373 CLW317846	O		LE	2	1	1	13	25S	33E	638518	3556544*		625	185	440
C 02373 S		CUB	LE	1	2	1	13	25S	33E	638721	3556549*		625	185	440

Average Depth to Water: **142 feet**

Minimum Depth: **90 feet**

Maximum Depth: **185 feet**

Record Count: 4

PLSS Search:

Township: 25S **Range:** 33E

***UTM location was derived from PLSS - see Help**

Appendix C

Analytical Report 579181

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

BTA Flowline Leak

22-MAR-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

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

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

22-MAR-18

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **579181**
BTA Flowline Leak
Project Address: Lea County, New Mexico

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 579181. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 579181 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 579181

Tetra Tech- Midland, Midland, TX

BTA Flowline Leak

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH #1 (0-1')	S	03-13-18 00:00		579181-001
AH #1 (1-1.5')	S	03-13-18 00:00		579181-002
AH #2 (0-1')	S	03-13-18 00:00		579181-003
AH #2 (1-1.5')	S	03-13-18 00:00		579181-004
AH #2 (1.5-2')	S	03-13-18 00:00		579181-005
AH #3 (0-1')	S	03-13-18 00:00		579181-006
AH #3 (1-1.5')	S	03-13-18 00:00		579181-007
AH #3 (1.5-2')	S	03-13-18 00:00		579181-008
AH #3 (2-2.5')	S	03-13-18 00:00		579181-009

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3043921 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 579181-001,579181-003.

Certificate of Analysis Summary 579181

Tetra Tech- Midland, Midland, TX

Project Name: BTA Flowline Leak

Project Id:
Contact: Ike Tavarez
Project Location: Lea County, New Mexico

Date Received in Lab: Wed Mar-14-18 11:30 am
Report Date: 22-MAR-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	579181-001		579181-002		579181-003		579181-004		579181-005		579181-006	
	Field Id:	AH #1 (0-1')		AH #1 (1-1.5')		AH #2 (0-1')		AH #2 (1-1.5')		AH #2 (1.5-2')		AH #3 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-13-18 00:00		Mar-13-18 00:00		Mar-13-18 00:00		Mar-13-18 00:00		Mar-13-18 00:00		Mar-13-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Mar-15-18 08:00		Mar-15-18 08:00		Mar-15-18 08:00		Mar-15-18 08:00				Mar-15-18 08:00	
	Analyzed:	Mar-16-18 11:42		Mar-15-18 16:15		Mar-16-18 11:24		Mar-15-18 15:56				Mar-15-18 14:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL			mg/kg	RL
Benzene		<0.200	0.200	0.00209	0.00200	<0.201	0.201	<0.00199	0.00199			<0.00199	0.00199
Toluene		9.08	0.200	0.0792	0.00200	0.933	0.201	0.0182	0.00199			0.00248	0.00199
Ethylbenzene		4.85	0.200	0.0578	0.00200	0.933	0.201	0.0126	0.00199			<0.00199	0.00199
m,p-Xylenes		18.7	0.401	0.237	0.00399	4.11	0.402	0.0562	0.00398			<0.00398	0.00398
o-Xylene		7.74	0.200	0.102	0.00200	1.89	0.201	0.0248	0.00199			<0.00199	0.00199
Total Xylenes		26.4	0.200	0.339	0.00200	6.00	0.201	0.0810	0.00199			<0.00199	0.00199
Total BTEX		40.4	0.200	0.478	0.00200	7.87	0.201	0.112	0.00199			0.00248	0.00199
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-15-18 15:30		Mar-15-18 15:30		Mar-15-18 15:30		Mar-15-18 15:30		Mar-16-18 08:30		Mar-16-18 08:30	
	Analyzed:	Mar-15-18 21:19		Mar-15-18 21:24		Mar-15-18 21:29		Mar-15-18 21:35		Mar-16-18 09:55		Mar-16-18 10:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3640	24.9	374	5.00	1180	24.5	<4.94	4.94	<5.00	5.00	6.02	5.00
TPH By SW8015 Mod	***Extracted:***	** ** ** **		** ** ** **		** ** ** **		** ** ** **				** ** ** **	
	Analyzed:	Mar-15-18 18:10		Mar-15-18 18:35		Mar-15-18 19:01		Mar-15-18 19:26				Mar-15-18 19:52	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL			mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		1030	14.9	24.3	15.0	272	14.9	<15.0	15.0			<15.0	15.0
Diesel Range Organics (DRO)		3610	14.9	123	15.0	1480	14.9	24.7	15.0			29.4	15.0
Oil Range Hydrocarbons (ORO)		85.8	14.9	<15.0	15.0	65.0	14.9	<15.0	15.0			<15.0	15.0
Total TPH		4730	14.9	147	15.0	1820	14.9	24.7	15.0			29.4	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 579181

Tetra Tech- Midland, Midland, TX

Project Name: BTA Flowline Leak

Project Id:
Contact: Ike Tavarez
Project Location: Lea County, New Mexico

Date Received in Lab: Wed Mar-14-18 11:30 am
Report Date: 22-MAR-18
Project Manager: Kelsey Brooks

Analysis Requested												
	Lab Id:	579181-007		579181-008		579181-009						
	Field Id:	AH #3 (1-1.5')		AH #3 (1.5-2')		AH #3 (2-2.5')						
	Depth:											
	Matrix:	SOIL		SOIL		SOIL						
	Sampled:	Mar-13-18 00:00		Mar-13-18 00:00		Mar-13-18 00:00						
BTEX by EPA 8021B	***Extracted:***	Mar-15-18 08:00										
	Analyzed:	Mar-15-18 15:08										
	Units/RL:	mg/kg	RL									
Benzene		<0.00202	0.00202									
Toluene		0.00230	0.00202									
Ethylbenzene		<0.00202	0.00202									
m,p-Xylenes		<0.00403	0.00403									
o-Xylene		<0.00202	0.00202									
Total Xylenes		<0.00202	0.00202									
Total BTEX		0.00230	0.00202									
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-16-18 08:30		Mar-16-18 08:30		Mar-16-18 08:30						
	Analyzed:	Mar-16-18 10:06		Mar-16-18 10:11		Mar-16-18 10:27						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL					
Chloride		8.58	5.00	<5.00	5.00	<5.00	5.00					
TPH By SW8015 Mod	***Extracted:***	Mar-18-18 10:00										
	Analyzed:	Mar-19-18 03:40										
	Units/RL:	mg/kg	RL									
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0									
Diesel Range Organics (DRO)		<15.0	15.0									
Oil Range Hydrocarbons (ORO)		<15.0	15.0									
Total TPH		<15.0	15.0									

Jessica Kramer
Project Assistant

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: BTA Flowline Leak

Work Orders : 579181,

Project ID:

Lab Batch #: 3043921 **Sample:** 579181-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 14:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0240	0.0300	80	70-130	
4-Bromofluorobenzene	0.0359	0.0300	120	70-130	

Lab Batch #: 3043921 **Sample:** 579181-007 / SMP **Batch:** 1 **Matrix:** Soil

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

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0260	0.0300	87	70-130	
4-Bromofluorobenzene	0.0350	0.0300	117	70-130	

Lab Batch #: 3043921 **Sample:** 579181-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 15:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	70-130	
4-Bromofluorobenzene	0.0357	0.0300	119	70-130	

Lab Batch #: 3043921 **Sample:** 579181-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 16:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	70-130	
4-Bromofluorobenzene	0.0312	0.0300	104	70-130	

Lab Batch #: 3043812 **Sample:** 579181-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 18:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.6	120	70-135	
o-Terphenyl	40.0	49.8	80	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: BTA Flowline Leak

Work Orders : 579181,

Project ID:

Lab Batch #: 3043812 **Sample:** 579181-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 18:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	50.9	49.9	102	70-135	

Lab Batch #: 3043812 **Sample:** 579181-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 19:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.6	108	70-135	
o-Terphenyl	61.3	49.8	123	70-135	

Lab Batch #: 3043812 **Sample:** 579181-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 19:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.8	109	70-135	
o-Terphenyl	54.9	49.9	110	70-135	

Lab Batch #: 3043812 **Sample:** 579181-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 19:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.9	104	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

Lab Batch #: 3043921 **Sample:** 579181-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/16/18 11:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0180	0.0300	60	70-130	***
4-Bromofluorobenzene	0.0354	0.0300	118	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: BTA Flowline Leak

Work Orders : 579181,

Project ID:

Lab Batch #: 3043921 **Sample:** 579181-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/16/18 11:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0112	0.0300	37	70-130	***
4-Bromofluorobenzene	0.0356	0.0300	119	70-130	

Lab Batch #: 3044129 **Sample:** 579181-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/19/18 03:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.2	99.8	97	70-135	
o-Terphenyl	50.9	49.9	102	70-135	

Lab Batch #: 3043812 **Sample:** 7640872-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/18 07:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	52.5	50.0	105	70-135	

Lab Batch #: 3043921 **Sample:** 7640920-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/18 13:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	70-130	
4-Bromofluorobenzene	0.0358	0.0300	119	70-130	

Lab Batch #: 3044129 **Sample:** 7641059-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/18/18 21:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.0	100	94	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: BTA Flowline Leak

Work Orders : 579181,

Project ID:

Lab Batch #: 3043812 **Sample:** 7640872-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/18 07:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	55.6	50.0	111	70-135	

Lab Batch #: 3043921 **Sample:** 7640920-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/18 11:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0347	0.0300	116	70-130	

Lab Batch #: 3044129 **Sample:** 7641059-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/18/18 21:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.3	100	97	70-135	
o-Terphenyl	49.0	50.0	98	70-135	

Lab Batch #: 3043812 **Sample:** 7640872-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/18 09:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	63.8	50.0	128	70-135	

Lab Batch #: 3043921 **Sample:** 7640920-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/18 12:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	70-130	
4-Bromofluorobenzene	0.0356	0.0300	119	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: BTA Flowline Leak

Work Orders : 579181,

Project ID:

Lab Batch #: 3044129 **Sample:** 7641059-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

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

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.9	100	94	70-135	
o-Terphenyl	45.9	50.0	92	70-135	

Lab Batch #: 3043812 **Sample:** 578897-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 10:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.8	117	70-135	
o-Terphenyl	57.2	49.9	115	70-135	

Lab Batch #: 3043921 **Sample:** 579173-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 12:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	70-130	
4-Bromofluorobenzene	0.0368	0.0300	123	70-130	

Lab Batch #: 3044129 **Sample:** 579298-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/18/18 22:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.9	110	70-135	
o-Terphenyl	45.8	50.0	92	70-135	

Lab Batch #: 3043812 **Sample:** 578897-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 10:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	53.1	50.0	106	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: BTA Flowline Leak

Work Orders : 579181,

Project ID:

Lab Batch #: 3043921 **Sample:** 579173-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/18 12:48

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	70-130	
4-Bromofluorobenzene	0.0352	0.0300	117	70-130	

Lab Batch #: 3044129 **Sample:** 579298-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/18/18 23:01

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.4	99.9	99	70-135	
o-Terphenyl	40.9	50.0	82	70-135	

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

BS / BSD Recoveries

Project Name: BTA Flowline Leak

Work Order #: 579181 **Project ID:**

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

Lab Batch ID: 3043921 **Sample:** 7640920-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0956	95	0.100	0.107	107	11	70-130	35	
Toluene	<0.00202	0.101	0.0982	97	0.100	0.102	102	4	70-130	35	
Ethylbenzene	<0.00202	0.101	0.102	101	0.100	0.107	107	5	70-130	35	
m,p-Xylenes	<0.00403	0.202	0.200	99	0.201	0.208	103	4	70-130	35	
o-Xylene	<0.00202	0.101	0.103	102	0.100	0.105	105	2	70-130	35	

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

Lab Batch ID: 3043830 **Sample:** 7640888-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	260	104	250	259	104	0	90-110	20	

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

Version: 1.%

BS / BSD Recoveries

Project Name: BTA Flowline Leak

Work Order #: 579181 **Project ID:**

Analyst: OJS **Date Prepared:** 03/16/2018 **Date Analyzed:** 03/16/2018

Lab Batch ID: 3043954 **Sample:** 7640903-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	235	94	250	238	95	1	90-110	20	

Analyst: ARM **Date Prepared:** 03/14/2018 **Date Analyzed:** 03/15/2018

Lab Batch ID: 3043812 **Sample:** 7640872-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	997	100	1000	1190	119	18	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1030	103	1000	1180	118	14	70-135	35	

Analyst: ARM **Date Prepared:** 03/18/2018 **Date Analyzed:** 03/18/2018

Lab Batch ID: 3044129 **Sample:** 7641059-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1060	106	1000	1020	102	4	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	901	90	1000	880	88	2	70-135	35	

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

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: BTA Flowline Leak

Work Order # : 579181 **Project ID:**

Lab Batch ID: 3043921 **QC- Sample ID:** 579173-003 S **Batch #:** 1 **Matrix:** Soil

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

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.0872	88	0.100	0.0856	86	2	70-130	35	
Toluene	<0.00199	0.0996	0.0842	85	0.100	0.0875	88	4	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.0876	88	0.100	0.0890	89	2	70-130	35	
m,p-Xylenes	<0.00398	0.199	0.174	87	0.200	0.174	87	0	70-130	35	
o-Xylene	<0.00199	0.0996	0.0884	89	0.100	0.0888	89	0	70-130	35	

Lab Batch ID: 3043830 **QC- Sample ID:** 578791-001 S **Batch #:** 1 **Matrix:** Soil

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

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	938	249	1190	101	249	1190	101	0	90-110	20	

Lab Batch ID: 3043830 **QC- Sample ID:** 579127-007 S **Batch #:** 1 **Matrix:** Soil

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

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	795	248	1050	103	248	1050	103	0	90-110	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: BTA Flowline Leak

Work Order # : 579181 **Project ID:**

Lab Batch ID: 3043954 **QC- Sample ID:** 579294-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/16/2018 **Date Prepared:** 03/16/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	248	99	250	247	99	0	90-110	20	

Lab Batch ID: 3043954 **QC- Sample ID:** 579401-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/16/2018 **Date Prepared:** 03/16/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	240	96	250	243	97	1	90-110	20	

Lab Batch ID: 3043812 **QC- Sample ID:** 578897-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/15/2018 **Date Prepared:** 03/14/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	1140	114	1000	969	97	16	70-135	35	
Diesel Range Organics (DRO)	<15.0	998	1140	114	1000	988	99	14	70-135	35	

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

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

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: BTA Flowline Leak

Work Order # : 579181 **Project ID:**

Lab Batch ID: 3044129 **QC- Sample ID:** 579298-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/18/2018 **Date Prepared:** 03/18/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	1070	107	999	985	99	8	70-135	35	
Diesel Range Organics (DRO)	1180	999	1880	70	999	1890	71	1	70-135	35	

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

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

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

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

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

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

579181

Client Name:	EOG	Site Manager:	Ike Tavarez
Project Name:	BTA Flowline Leak		
Project Location: (county, state)	Lea County, New Mexico	Project #:	Pending
Invoice to:	Tetra Tech, Inc.		
Receiving Laboratory:	Xenco Midland Tx	Sampler Signature:	Mike Carmona

Comments: Run deeper samples if TPH exceeds 5,000 mg/kg. Run deeper samples if Benzene exceeds 10 mg/kg or Total BTEX exceeds 50mg/kg

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B / BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
	AH #1 (0-1')	3/13/2018			X				X			1	N	X		X												X							
	AH #1 (1-1.5')	3/13/2018			X				X			1	N	X		X												X							
	AH #2 (0-1')	3/13/2018			X				X			1	N	X		X												X							
	AH #2 (1-1.5')	3/13/2018			X				X			1	N	X		X												X							
	AH #2 (1.5-2')	3/13/2018			X				X			1	N															X							
	AH #3 (0-1')	3/13/2018			X				X			1	N	X		X												X							
	AH #3 (1-1.5')	3/13/2018			X				X			1	N	X		X												X							
	AH #3 (1.5-2')	3/13/2018			X				X			1	N															X							
	AH #3 (2-2.5')	3/13/2018			X				X			1	N															X							

Relinquished by:	Date: 3-14-18	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Date: 3/14/18 Time: 11:30

LAB USE ONLY

Sample Temperature

REMARKS:

- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COF Temp: 10.6 IR ID:R-8

CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: 10.8

Final 1.000

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 03/14/2018 11:30:00 AM

Work Order #: 579181

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

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	10.8	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**No**	TPH received in bulk jars
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**No**	
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 03/19/2018

Checklist reviewed by: Katie Lowe Date: 03/19/2018

Analytical Report 584793

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

BTA Vaca Draw 9418 10 Federal Flowline Leak

212C-MD-01152

08-MAY-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

08-MAY-18

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **584793**
BTA Vaca Draw 9418 10 Federal Flowline Leak
Project Address: Lea County, New Mexico

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 584793. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 584793 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 584793

Tetra Tech- Midland, Midland, TX

BTA Vaca Draw 9418 10 Federal Flowline Leak

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Bottomhole #1 (1'-1.5'BEB)	S	04-30-18 00:00		584793-001
North Sidewall #1	S	04-30-18 00:00		584793-002
South Sidewall #1	S	04-30-18 00:00		584793-003
West Sidewall	S	04-30-18 00:00		584793-004
Bottomhole #2 (1'-1.5'BEB)	S	05-01-18 00:00		584793-005
North Sidewall #2	S	05-01-18 00:00		584793-006
South Sidewall #2	S	05-01-18 00:00		584793-007
East Sidewall	S	05-01-18 00:00		584793-008

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: BTA Vaca Draw 9418 10 Federal Flowline Leak

Project ID: *212C-MD-01152*
Work Order Number(s): *584793*

Report Date: *08-MAY-18*
Date Received: *05/03/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 584793

Tetra Tech- Midland, Midland, TX

Project Name: BTA Vaca Draw 9418 10 Federal Flowline Leak

Project Id: 212C-MD-01152
Contact: Ike Tavarez
Project Location: Lea County, New Mexico

Date Received in Lab: Thu May-03-18 03:33 pm
Report Date: 08-MAY-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	584793-001		584793-002		584793-003		584793-004		584793-005		584793-006	
	Field Id:	Bottomhole #1 (1'-1.5'BEB)		North Sidewall #1		South Sidewall #1		West Sidewall		Bottomhole #2 (1'-1.5'BEB)		North Sidewall #2	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-30-18 00:00		Apr-30-18 00:00		Apr-30-18 00:00		Apr-30-18 00:00		May-01-18 00:00		May-01-18 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	May-04-18 13:00		May-04-18 13:00		May-04-18 13:00		May-04-18 13:00		May-04-18 13:00		May-07-18 09:00	
	Analyzed:	May-04-18 18:22		May-04-18 18:28		May-04-18 18:34		May-04-18 18:40		May-04-18 18:46		May-07-18 11:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.90	4.90	<5.00	5.00	<5.00	5.00	<4.93	4.93	<5.00	5.00	<5.00	5.00

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 584793

Tetra Tech- Midland, Midland, TX

Project Name: BTA Vaca Draw 9418 10 Federal Flowline Leak

Project Id: 212C-MD-01152
Contact: Ike Tavarez
Project Location: Lea County, New Mexico

Date Received in Lab: Thu May-03-18 03:33 pm
Report Date: 08-MAY-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	584793-007		584793-008									
	Field Id:	South Sidewall #2		East Sidewall									
	Depth:												
	Matrix:	SOIL		SOIL									
	Sampled:	May-01-18 00:00		May-01-18 00:00									
Inorganic Anions by EPA 300/300.1	***Extracted:***	May-07-18 09:00		May-07-18 09:00									
	Analyzed:	May-07-18 11:35		May-07-18 11:40									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Chloride		<4.90	4.90	<4.92	4.92								

Jessica Kramer
Project Assistant

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

BS / BSD Recoveries

Project Name: BTA Vaca Draw 9418 10 Federal Flowline Leak

Work Order #: 584793 **Project ID:** 212C-MD-01152

Analyst: SCM **Date Prepared:** 05/04/2018 **Date Analyzed:** 05/04/2018

Lab Batch ID: 3049092 **Sample:** 7644136-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	274	110	250	265	106	3	90-110	20	

Analyst: SCM **Date Prepared:** 05/07/2018 **Date Analyzed:** 05/07/2018

Lab Batch ID: 3049308 **Sample:** 7644165-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	246	98	250	244	98	1	90-110	20	

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

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: BTA Vaca Draw 9418 10 Federal Flowline Leak

Work Order # : 584793 **Project ID:** 212C-MD-01152

Lab Batch ID: 3049092 **QC- Sample ID:** 584485-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/04/2018 **Date Prepared:** 05/04/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	349	248	595	99	248	592	98	1	90-110	20	

Lab Batch ID: 3049092 **QC- Sample ID:** 584791-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/04/2018 **Date Prepared:** 05/04/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	350	250	594	98	250	589	96	1	90-110	20	

Lab Batch ID: 3049308 **QC- Sample ID:** 584793-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/07/2018 **Date Prepared:** 05/07/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	228	91	250	243	97	6	90-110	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: BTA Vaca Draw 9418 10 Federal Flowline Leak

Work Order # : 584793 **Project ID:** 212C-MD-01152

Lab Batch ID: 3049308 **QC- Sample ID:** 584796-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/07/2018 **Date Prepared:** 05/07/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	40.3	249	297	103	249	297	103	0	90-110	20	

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

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

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

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

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

Analysis Request of Chain of Custody Record

Page 1 of 1

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

584793

Client Name: EOG	Site Manager: Ike Tavarez
Project Name: BTA Vaca Draw 9418 10 Federal Flowline Leak	
Project Location: (county, state) Lea County, New Mexico	Project #: 212C-MD-01152
Invoice to: Tetra Tech	
Receiving Laboratory: Xenco Midland Tx	Sampler Signature: Mike Carmona
Comments: 3 day Turn Around	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2018 DATE	TIME	MATRIX WATER	SOIL		PRESERVATIVE METHOD HCL	HNO_3	ICE	None		# CONTAINERS	FILTERED (Y/N)
	Bottom Hole #1 (1'-1.5'BEB)	4/30/2018			X				X			1	N
	North Sidewall #1	4/30/2018			X				X			1	N
	South Sidewall #1	4/30/2018			X				X			1	N
	West Sidewall	4/30/2018			X				X			1	N
	Bottom Hole #2 (1'-1.5'BEB)	5/1/2018			X				X			1	N
	North Sidewall #2	5/1/2018			X				X			1	N
	South Sidewall #2	5/1/2018			X				X			1	N
	East Sidewall	5/1/2018			X				X			1	N

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
															X							
															X							
															X							
															X							
															X							
															X							
															X							
															X							
															X							

Relinquished by: Date: 5-3-18 Time: 1533 — Received by: Date: 5/3/18 Time: 1533

Relinquished by: Date: Time: — Received by: Date: Time:

Relinquished by: Date: Time: — Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

[ ] STANDARD

[X] RUSH: Same Day 24 hr 48 hr (72 hr)

[ ] Rush Charges Authorized

[ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORI Temp: 0.1 IR ID:R-8

CF:(0-6: -0.2°C)

(6-23: +0.2°C)

Corrected Temp: 0.3

Final 1.000

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 05/03/2018 03:33:00 PM

Work Order #: 584793

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	6.3
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst:

PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 05/03/2018

Checklist reviewed by: Jessica Kramer Date: 05/03/2018