SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	Texaco State BE Tank Battery					
Company:	COG Operating LLC					
Section, Township and Range	Unit B	Sec 16	T17S	R30E		
Lease Number:	(API#) 30-015-04181					
County:	Eddy County					
GPS:	32.83891° N			103.97546° W		
Surface Owner:	State					
Mineral Owner:						
Directions:	In Loco Hills at the intersection of Goat Roper Road and Hwy. 82 travel 1.39 miles to north on Goat Roper Road. Turn right traveling east approximatly 0.10 miles to the location on the right.					

Release Data:	
Date Released:	4/11/2012
Type Release:	Oil and Produced Water
Source of Contamination:	Fire Tube
Fluid Released:	4 bbls Oil / 8 bbls Produced Water
Fluids Recovered:	3 bbls Oil / 7 bbls Produced Water

Official Communication:			
Name:	Robert McNeill		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		1910 N. Big Spring
	600 W. Illinois Ave.		
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	rmcneil@conchoresources.com		ike.tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	0	0
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

November 18, 2013

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Closure Report for the COG Operating LLC., Texaco State BE Tank Battery, Section 16, Unit, Township 17 South, Range 30 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Texaco State BE Tank Battery, located in Unit B, Section 16, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83891°, W 103.97546°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on April 11, 2012, and released approximately for four (4) barrels of oil and eight (8) barrels of produced water from a damaged fire tube. Three (3) barrels of oil and seven (7) barrels of produced water were recovered. COG has replaced the fire tube to prevent a recurrence. The final C-141 form is enclosed in Appendix B.

Groundwater

No water wells were listed within Section 3. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 300' below surface. The groundwater data is shown in Appendix A.

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

Tetra Tech
1910 North Big Spring, Midland,TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

(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

Auger Holes

On June 6, 2012, Tetra Tech personnel inspected and sampled the spill area. Two (2) auger holes (AH-1 and AH-2) were installed using a stainless steel hand auger to assess the impacted soils. The auger holes were installed within the berm of the tank battery. The spill area measured approximately 10' x 45' located behind the heater treater and separator. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of 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 on Figure 3.

Referring to Table 1, AH-2 exceeded the RRAL for TPH and BTEX. AH-2 had a maximum TPH concentration of 12,520 mg/kg and a total BTEX of 163 mg/kg at 1-1.5' and declined below the RRAL at 2-2.5' to 4,070 mg/kg and 38.2 mg/kg, respectively.

A chloride impact was detected in both auger holes with maximum chloride concentration detected in the area of AH-1 of 9,180 mg/kg at 0-1.0'. At AH-1, the chloride concentrations declined with depth, but spiked at 5-5.5' below surface showing a bottom auger hole of 5,660 mg/kg at 8-8.5' below surface. Auger hole (AH-2) showed elevated chlorides throughout the auger hole. The chloride concentrations in both auger holes were not vertically defined in both auger holes.

Boreholes

On September 12, 2012, Tetra Tech supervised the installation of a bore hole (BH-1) between the two auger points previously installed (AH-1 and AH-2) using an air rotary drilling rig to attempt to define the chloride impacted soils. The borehole was installed to a maximum depth of 70.0' below surface. At approximately 70.0' below surface the subsurface soils (flowing sands) began to collapse the borehole and drilling with air rotary could not be continued. Referring to the Table 1, the chloride concentrations were not vertically defined and showed a bottom boreholes of 3,840 mg/kg at 69-70' below surface and appears to be a historical impact.

As discussed with Mike Bratcher with the NMOCD, the deeper impacted soil appears to be historical and drilling with a rotary rig could not complete the delineation. To properly close site, Mr. Bratcher recommended delineation of the site. Due the sandy formation, a hollow stem auger was proposed to define the extents.

On June 6, 2013, Tetra Tech supervised the installation of a soil boring (SB-1) near the location on the previously installed borehole (BH-1) using a hollow stem auger drilling rig. The soil boring was installed to a maximum depth of 110.0' below surface. At approximately 110.0' below surface, the subsurface soils (flowing sands) began to collapse in the borehole and drilling with a hollow stem auger could not be continued. The soil boring results are summarized in Table 1 and the location is shown on Figure 3. Copies of laboratory analysis chain-of-custody documentation are included in Appendix C.

Referring to Table 1, chloride concentrations did show declining chlorides with depth, but spiked at 69-70' of 2,920 mg/kg and at 89-90' of 3,560 mg/kg. The bottom hole sample at 109-110' showed a chloride of 6,140 mg/kg, which may be cross-contaminated from the upper soils.

Based on the results, the area remains vertically undefined at a depth of 110' below surface due to the flowing sand formation. Other drilling techniques to collect discrete samples at deeper depths do not appear to be available, or not available to this area.

Remediation

Based on the assessment, Tetra Tech prepared a work plan for review and approval. Between November 5 and November 6, 2013, Tetra Tech personnel supervised the removal of impacted material as highlighted (green) in Table 1 and shown on Figure 4. Due to the location and facility equipment, the areas of AH-1 and AH-2 were excavated to a depth of approximately 3.0' to 4.0' below surface and installed a 40 mil plastic liner to cap the remaining impact and prevent further migration of chlorides. Approximately 67 yards of contaminated soil was removed and transported offsite for proper disposal. The excavated areas were backfilled with clean backfilled material to grade.

TETRA TECH

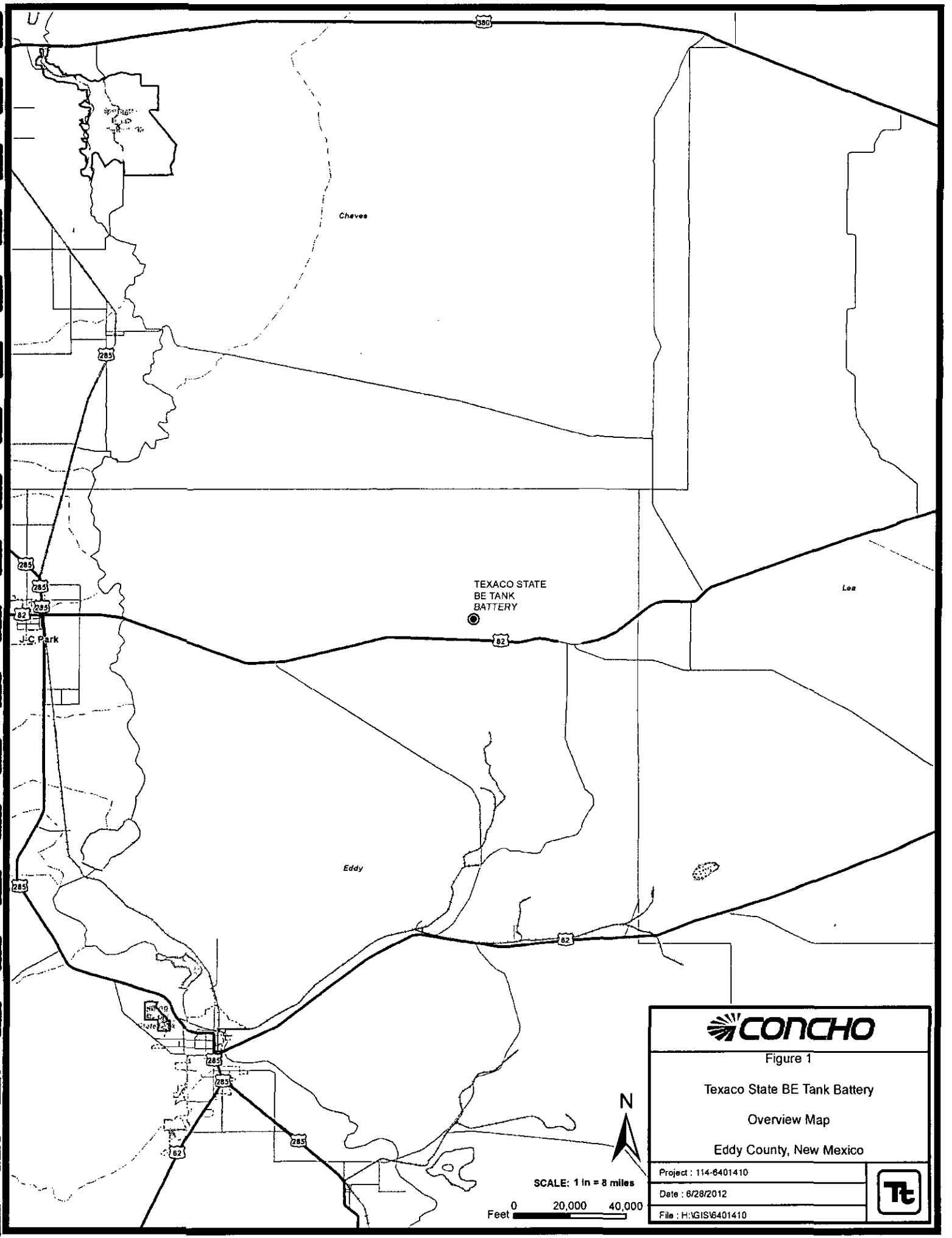
Based on the remediation activities performed at this location, COG requests closure for this site. The C-141(Final) is included in Appendix B. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Clair Gonzales,
Geologist

cc: Robert McNeill – COG

Figures



CONCHO

Figure 1

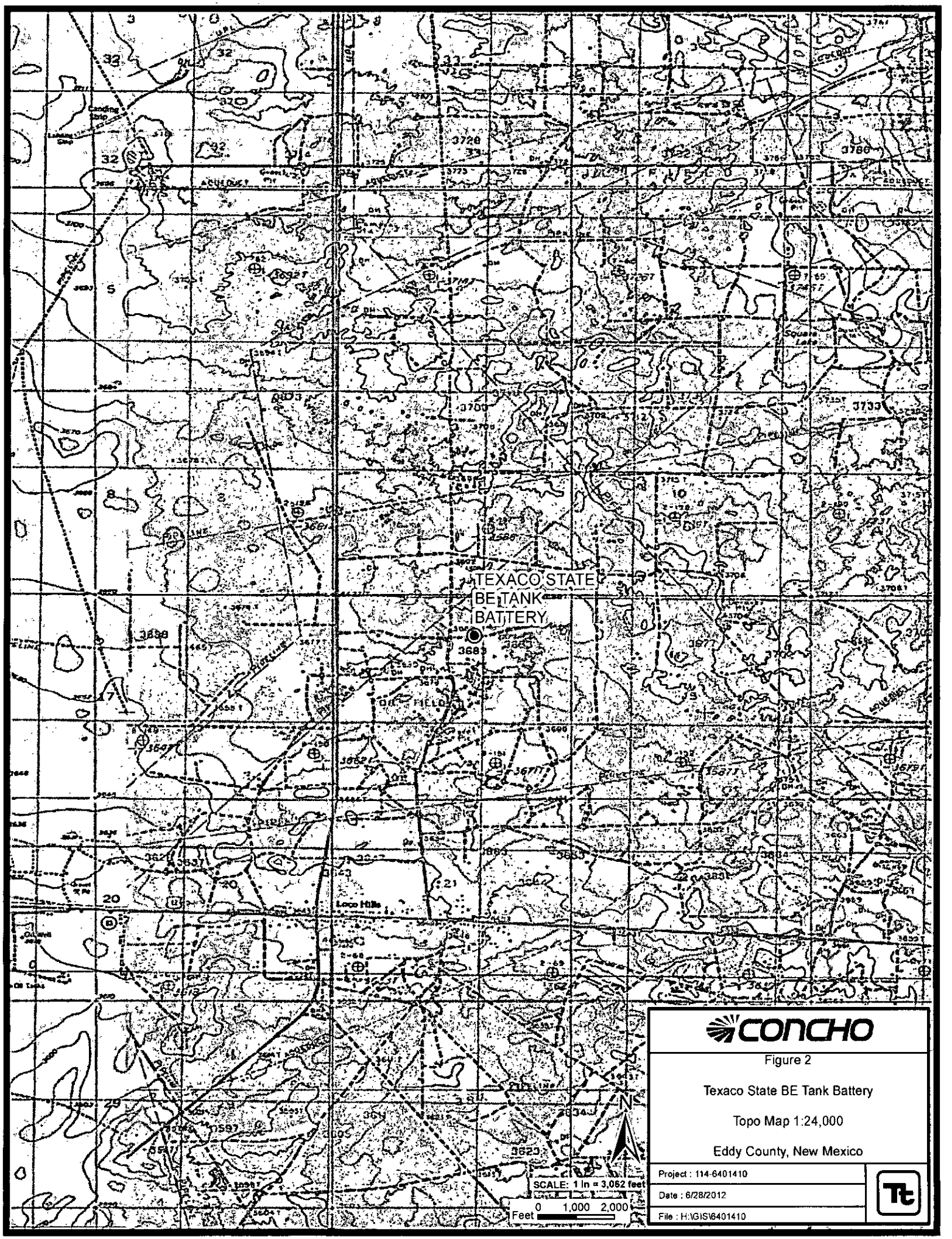
Texaco State BE Tank Battery

Overview Map

Eddy County, New Mexico

Project : 114-6401410	
Date : 6/28/2012	
File : H:\GIS\6401410	

Drawn By: Isabel Marmolejo



CONCHO

Figure 2

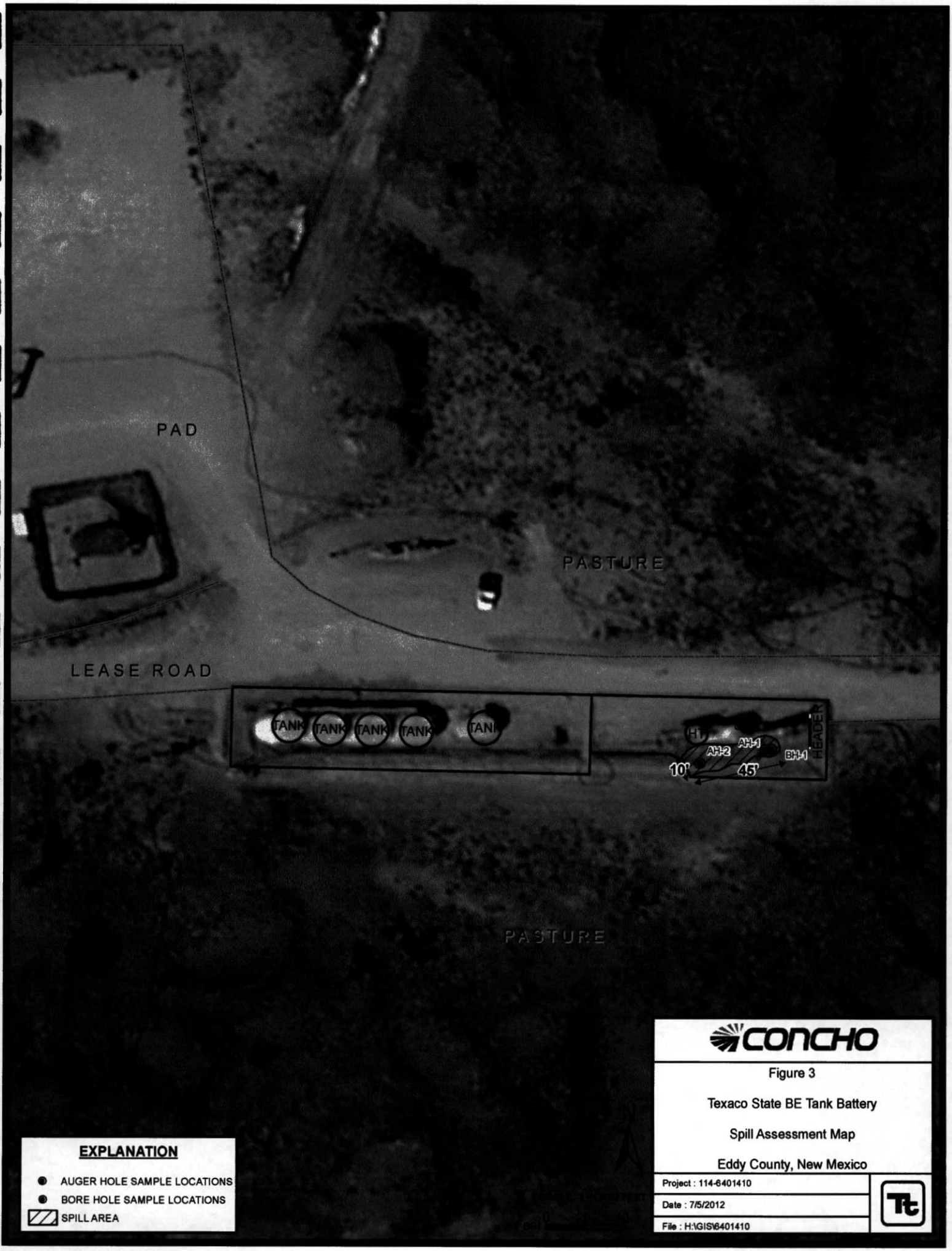
Texaco State BE Tank Battery

Topo Map 1:24,000

Eddy County, New Mexico

Project : 114-6401410	
Date : 6/28/2012	
File : H:\GIS\6401410	

Drawn By: Isabel Marmolejo



EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- BORE HOLE SAMPLE LOCATIONS
- SPILL AREA

CONCHO

Figure 3

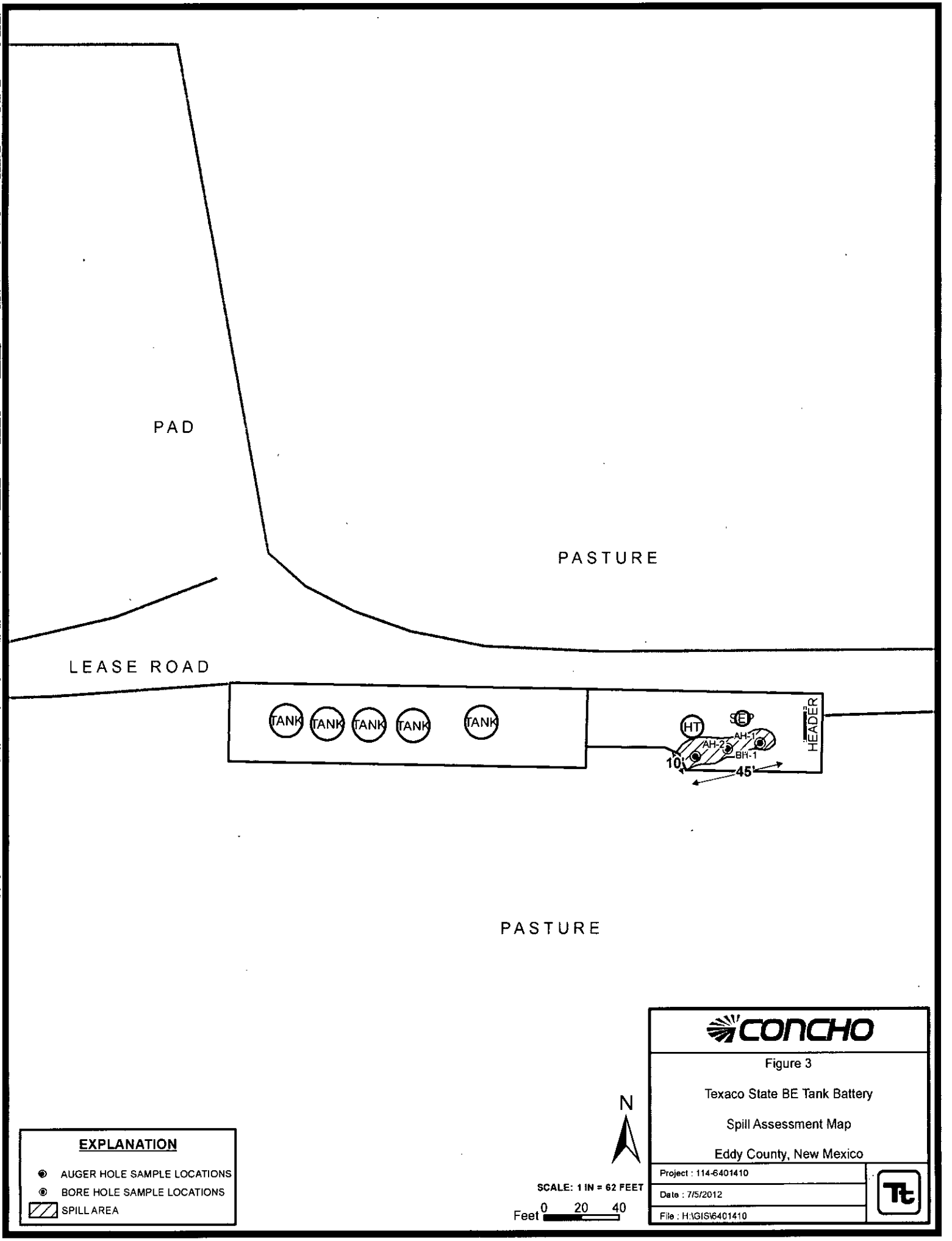
Texaco State BE Tank Battery

Spill Assessment Map

Eddy County, New Mexico

Project : 114-6401410	Tt
Date : 7/5/2012	
File : H:\GIS\6401410	

Drawn By: Isabel Mazmolejo



CONCHO

Figure 3

Texaco State BE Tank Battery

Spill Assessment Map

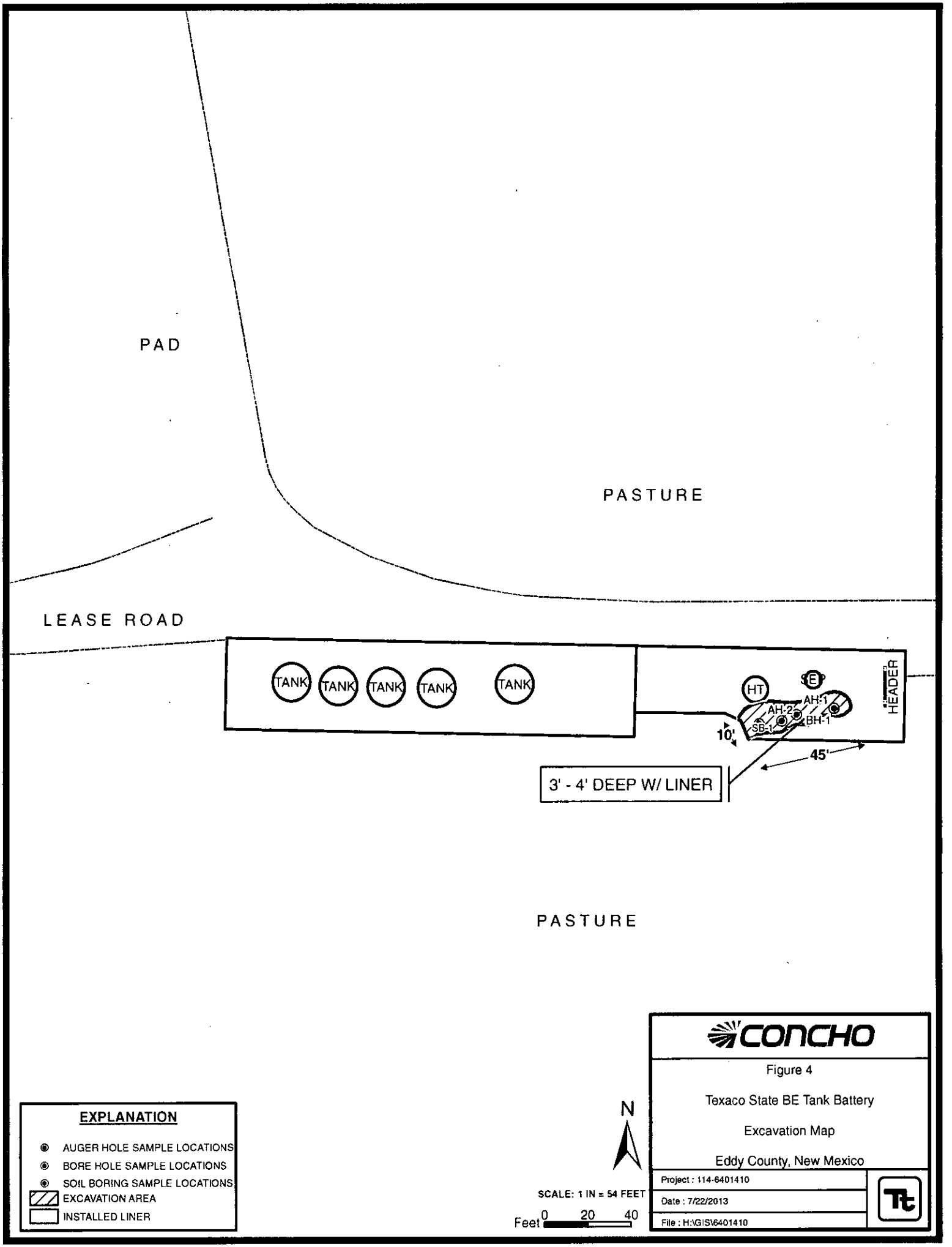
Eddy County, New Mexico

Project : 114-6401410

Date : 7/5/2012

File : H:\GIS\6401410

Drawn By: Isabel Marmolejo


PAD
PASTURE
LEASE ROAD
TANK
TANK
TANK
TANK
TANK
HT
AH-2
AH-1
BH-1
SB-1
HEADER
10'
45'
3' - 4' DEEP W/ LINER
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
BORE HOLE SAMPLE LOCATIONS
SOIL BORING SAMPLE LOCATIONS
EXCAVATION AREA
INSTALLED LINER
N
SCALE: 1 IN = 54 FEET
Feet 0 20 40
CONCHO
Figure 4
Texaco State BE Tank Battery
Excavation Map
Eddy County, New Mexico
Project : 114-6401410
Date : 7/22/2013
File : H:\GIS\6401410
Drawn By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
Texaco State BE Tank Battery
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (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	Total						
AH-1	6/1/2012	0-1		X	<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	9,180
	"	1-1.5		X	-	-	-	-	-	-	-	-	718
	"	2-2.5		X	-	-	-	-	-	-	-	-	526
	"	3-3.5		X	-	-	-	-	-	-	-	-	347
	"	4-4.5	X		-	-	-	-	-	-	-	-	540
	"	5-5.5	X		-	-	-	-	-	-	-	-	2,320
	"	6-6.5	X		-	-	-	-	-	-	-	-	2,770
	"	7-7.5	X		-	-	-	-	-	-	-	-	4,590
	"	8-8.5	X		-	-	-	-	-	-	-	-	5,660
BH-1	9/12/2012	0-1		X	-	-	-	-	-	-	-	-	35,500
	"	2-3		X	-	-	-	-	-	-	-	-	11,200
	"	4-5	X		-	-	-	-	-	-	-	-	555
	"	6-7	X		-	-	-	-	-	-	-	-	1,660
	"	9-10	X		-	-	-	-	-	-	-	-	3,910
	"	14-15	X		-	-	-	-	-	-	-	-	3,590
	"	19-20	X		-	-	-	-	-	-	-	-	4,520
	"	24-25	X		-	-	-	-	-	-	-	-	6,800
	"	29-30	X		-	-	-	-	-	-	-	-	7,540
	"	39-40	X		-	-	-	-	-	-	-	-	12,200
	"	49-50	X		-	-	-	-	-	-	-	-	4,620
	"	59-60	X		-	-	-	-	-	-	-	-	3,990
	"	69-70	X		-	-	-	-	-	-	-	-	3,840

Table 1
COG Operating LLC.
Texaco State BE Tank Battery
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (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	Total						
SB-1	6/6/2013	59-60	X		-	-	-	-	-	-	-	-	1,640
	"	69-70	X		-	-	-	-	-	-	-	-	2,920
	"	79-80	X		-	-	-	-	-	-	-	-	1,260
	"	89-90	X		-	-	-	-	-	-	-	-	3,560
	"	99-100	X		-	-	-	-	-	-	-	-	1,060
	"	109-110	X		-	-	-	-	-	-	-	-	6,140
AH-2	6/1/2012	0-1		X	2,730	5,750	8,480	<1.00	6.35	3.51	28.2	38.1	1,640
	"	1-1.5		X	2,520	10,000	12,520	4.05	53.9	28.6	76.9	163	2,280
	"	2-2.5		X	1,040	3,030	4,070	<1.00	12.7	1.19	24.3	38.2	478
	"	3-3.5		X	-	-	-	-	-	-	-	-	3,440
	"	4-4.5	X		-	-	-	-	-	-	-	-	8,620
	"	5-5.5	X		-	-	-	-	-	-	-	-	5,720
	"	6-6.5	X		-	-	-	-	-	-	-	-	3,760
	"	7-7.5	X		-	-	-	-	-	-	-	-	917
	"	8-8.5	X		-	-	-	-	-	-	-	-	4,690

(--) Not Analyzed

Excavation Depth

Liner

SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	Texaco State BE Tank Battery					
Company:	COG Operating LLC					
Section, Township and Range	Unit B	Sec 16	T17S	R30E		
Lease Number:	(API#) 30-015-04181					
County:	Eddy County					
GPS:	32.83891° N			103.97546° W		
Surface Owner:	State					
Mineral Owner:						
Directions:	In Loco Hills at the intersection of Goat Roper Road and Hwy. 82 travel 1.39 miles to north on Goat Roper Road. Turn right traveling east approximatly 0.10 miles to the location on the right.					

Release Data:	
Date Released:	4/11/2012
Type Release:	Oil and Produced Water
Source of Contamination:	Fire Tube
Fluid Released:	4 bbls Oil / 8 bbls Produced Water
Fluids Recovered:	3 bbls Oil / 7 bbls Produced Water

Official Communication:			
Name:	Robert McNeill		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		1910 N. Big Spring
	600 W. Illinois Ave.		
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	rmcneil@conchoresources.com		ike.tavarez@tetratech.com

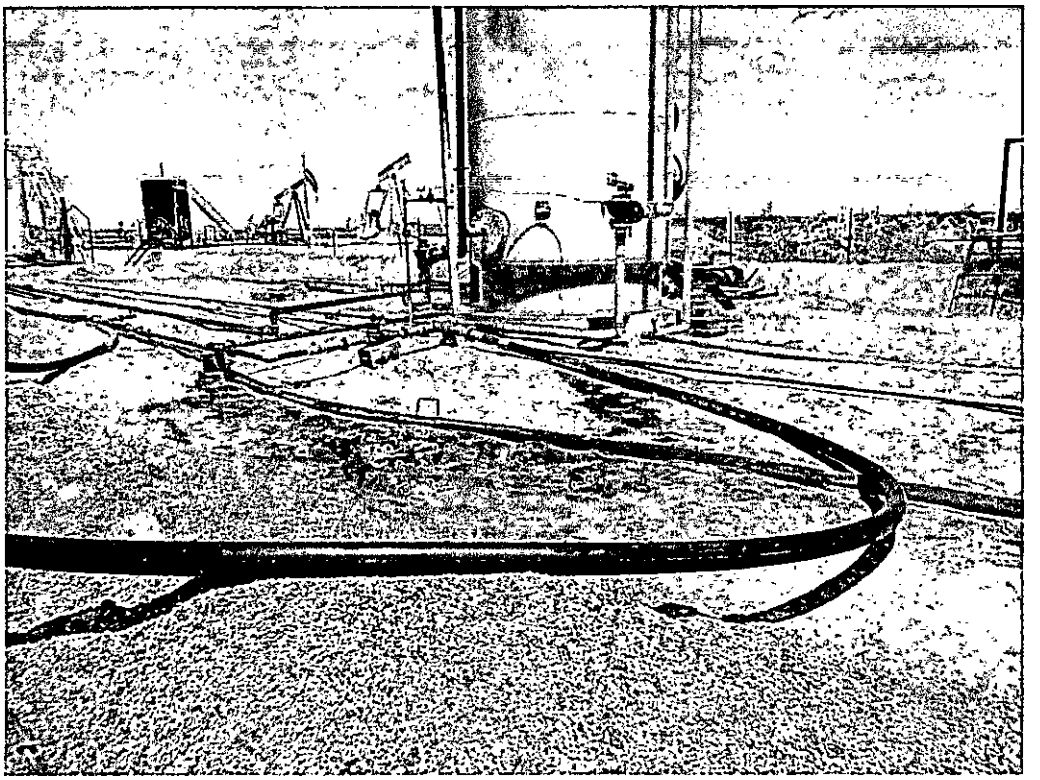
Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	0	0
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	***Ranking Score***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

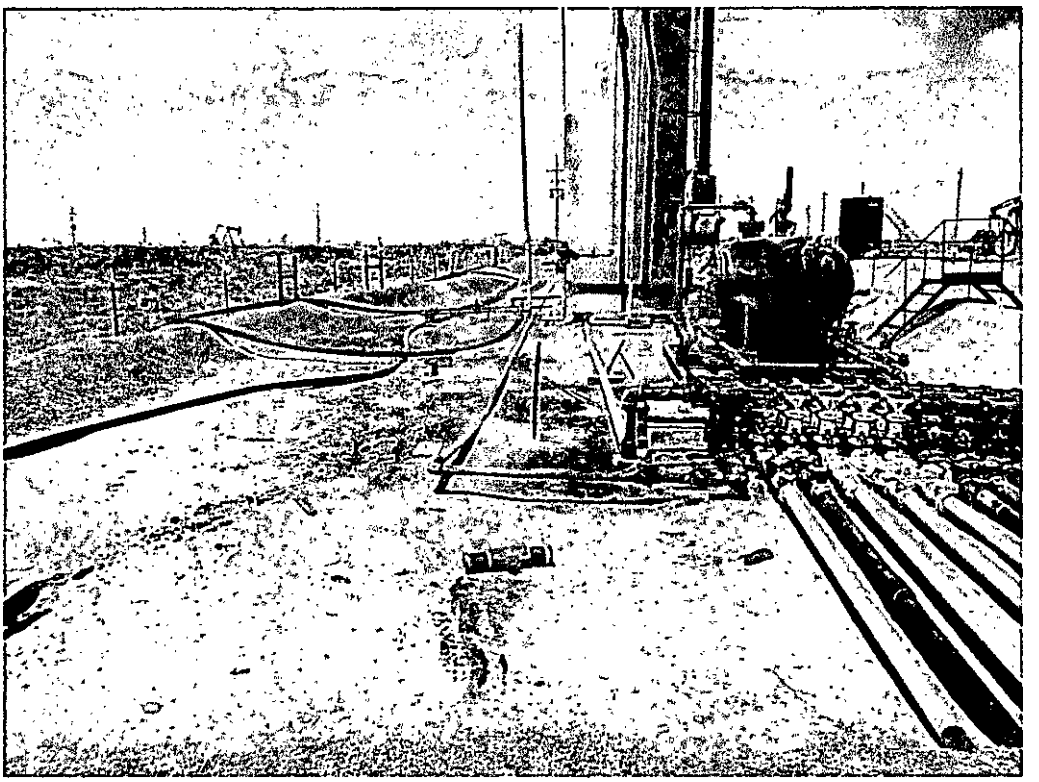
Photos

COG Operating LLC
Texaco State BE Tank Battery
Eddy County, New Mexico

TETRA TECH



View Southeast – Area of AH-2.



View West– Area of AH-1 and AH-2.

COG Operating LLC
Texaco State BE Tank Battery
Eddy County, New Mexico

TETRA TECH

Drilling of SB-1 with Hollow Stem Auger.

View West – Excavation area.

COG Operating LLC
Texaco State BE Tank Battery
Eddy County, New Mexico

TETRA TECH

View West – Lined excavation area.

View West – backfilled excavation area.

Appendix A

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 **COG Operating LLC**	Contact **Pat Ellis**
Address **550 W. Texas, Suite 1300 Midland, Texas 79701**	Telephone No. **(432) 685-4332**
Facility Name Electra North Federal Tank Battery	Facility Type **Tank Battery**

Surface Owner: State	Mineral Owner	Lease No. (API #) 30-015-04181 Texaco State BE #1 Well

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	16	17S	30E					Eddy

Latitude N 32.83891° **Longitude** W 103.97546°

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release 160 bbls	Volume Recovered 145 bbls
Source of Release: Fire tube	Date and Hour of Occurrence 3/13/10	Date and Hour of Discovery 3/13/2010
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom? Josh Russo	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.*

A hole developed in the fire tube at the heater treater inside the tank battery. This caused the heater to catch fire and burn a flow line. The fire tube has been replaced

Describe Area Affected and Cleanup Action Taken.*

Initially 12 bbls of fluid was released from the flow line and 10 bbls was recovered with a vacuum truck. The spill was contained inside the dike walls of the tank battery with the exception of a small overspray area outside of the dike. The overspray area has been treated with Micro-blaze. The area inside the dike was sampled, but not delineated at 110 feet below the surface. The area was excavated to approximately 3.0' – 4.0' and capped with clay.

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 COG)	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 11/18/2013 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

1410

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	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Texaco State BE Tank Battery	Facility Type	Tank Battery

Surface Owner State	Mineral Owner	Lease No. (API#) 30-015-04181 Texaco State BE #1 well

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	16	17S	30E					Eddy

32.838971 103.97546

Latitude 32 29.020 **Longitude** 104 13.607

NATURE OF RELEASE

Type of Release Oil and Produced water	Volume of Release 4bbls oil 8bbls pw	Volume Recovered 3bbls oil 7bbls pw
Source of Release Fire tube	Date and Hour of Occurrence 04/11/2012	Date and Hour of Discovery 04/11/2012 5:00 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A hole developed in the fire tube at the heater treater inside the tank battery. This caused the heater to catch fire and burn a flow line. The fire tube has been repaired.

Describe Area Affected and Cleanup Action Taken.*

Initially 12bbls of fluid were released from the flow line and we were able to recover 10bbls with a vacuum truck. The spill was contained inside the dike walls of the tank battery with exception of a small overspray area outside of the dike. The overspray area has been treated with Micro-blaze. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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: Josh Russo	Approved by District Supervisor:
Title: HSE Coordinator	Approval Date: / Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval: / Attached ☐
Date: 04/20/2012 Phone: 432-212-2399	

* Attach Additional Sheets If Necessary

Friday (5)

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Texaco State BE Tank Battery
Eddy County, New Mexico

16 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 220 dry	13
19 **110**	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 30 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

16 South 31 East

6	5	4	3	2 **290**	1
7	8	9	10	11	12 **288**
18	17	16	15	14 **113** **314**	13299
19	20	21	22	23	24
30	29	28	27	26	25
31 **290**	32	33	34	35	36

17 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 **76** **80**	23	24
30	29 **210** **208**	28	27	26	25
31	32	33	34	35 153	36

17 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16 Site	15	14	13
19	20 **80**	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 **SITE**	23	24
30	29	28	27	26	25
31	32	33	34 **271**	35	36 **SITE**

18 South 29 East

6	5	4	3	2	1
7	8	9	10 **95**	11	12
18	17	16	15	14	13
19	20	21	22	23	24 **158**
30	29	28	27	26	25
31	32	33	34	35	36

18 South 30 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

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 **400**
18	17	16	15	14 **317**	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 **261**	36

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Field water level
- New Mexico Water and Infrastructure Data System

Appendix C

Summary Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: June 12, 2012

Work Order: 12060502

Project Location: Eddy Co., NM
Project Name: COG/Texaco State BE Tank Battery
Project Number: 114-6401410

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
299912	AH-1 0-1'	soil	2012-06-01	00:00	2012-06-04
299913	AH-1 1-1.5'	soil	2012-06-01	00:00	2012-06-04
299914	AH-1 2-2.5'	soil	2012-06-01	00:00	2012-06-04
299915	AH-1 3-3.5'	soil	2012-06-01	00:00	2012-06-04
299916	AH-1 4-4.5'	soil	2012-06-01	00:00	2012-06-04
299917	AH-1 5-5.5'	soil	2012-06-01	00:00	2012-06-04
299918	AH-1 6-6.5'	soil	2012-06-01	00:00	2012-06-04
299919	AH-1 7-7.5'	soil	2012-06-01	00:00	2012-06-04
299920	AH-1 8-8.5'	soil	2012-06-01	00:00	2012-06-04
299921	AH-2 0-1'	soil	2012-06-01	00:00	2012-06-04
299922	AH-2 1-1.5'	soil	2012-06-01	00:00	2012-06-04
299923	AH-2 2-2.5'	soil	2012-06-01	00:00	2012-06-04
299924	AH-2 3-3.5'	soil	2012-06-01	00:00	2012-06-04
299925	AH-2 4-4.5'	soil	2012-06-01	00:00	2012-06-04
299926	AH-2 5-5.5'	soil	2012-06-01	00:00	2012-06-04
299927	AH-2 6-6.5'	soil	2012-06-01	00:00	2012-06-04
299928	AH-2 7-7.5'	soil	2012-06-01	00:00	2012-06-04
299929	AH-2 8-8.5'	soil	2012-06-01	00:00	2012-06-04

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
299912 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00 Qs
299921 - AH-2 0-1'	<1.00	**6.35**	**3.51**	**28.2**	**5750**	**2730** Qs
299922 - AH-2 1-1.5'	**4.05**	**53.9**	**28.6**	**76.9**	**10000**	**2520**
299923 - AH-2 2-2.5'	<1.00	**12.7**	**1.19**	**24.3**	**3030**	**1040**

Sample: 299912 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**9180**	mg/Kg	4

Sample: 299913 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**718**	mg/Kg	4

Sample: 299914 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**526**	mg/Kg	4

Sample: 299915 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**347**	mg/Kg	4

Sample: 299916 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**540**	mg/Kg	4

Sample: 299917 - AH-1 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**2320**	mg/Kg	4

Sample: 299918 - AH-1 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**2770**	mg/Kg	4

Sample: 299919 - AH-1 7-7.5'

Param	Flag	Result	Units	RL
Chloride		**4590**	mg/Kg	4

Sample: 299920 - AH-1 8-8.5'

Param	Flag	Result	Units	RL
Chloride		**5660**	mg/Kg	4

Sample: 299921 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**1640**	mg/Kg	4

Sample: 299922 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**2280**	mg/Kg	4

Sample: 299923 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**478**	mg/Kg	4

Sample: 299924 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**3440**	mg/Kg	4

Sample: 299925 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**8620**	mg/Kg	4

Sample: 299926 - AH-2 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**5720**	mg/Kg	4

Sample: 299927 - AH-2 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**3760**	mg/Kg	4

Sample: 299928 - AH-2 7-7.5'

Param	Flag	Result	Units	RL
Chloride		**917**	mg/Kg	4

Sample: 299929 - AH-2 8-8.5'

Param	Flag	Result	Units	RL
Chloride		**4690**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: June 12, 2012

Work Order: 12060502

Project Location: Eddy Co., NM
Project Name: COG/Texaco State BE Tank Battery
Project Number: 114-6401410

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
299912	AH-1 0-1'	soil	2012-06-01	00:00	2012-06-04
299913	AH-1 1-1.5'	soil	2012-06-01	00:00	2012-06-04
299914	AH-1 2-2.5'	soil	2012-06-01	00:00	2012-06-04
299915	AH-1 3-3.5'	soil	2012-06-01	00:00	2012-06-04
299916	AH-1 4-4.5'	soil	2012-06-01	00:00	2012-06-04
299917	AH-1 5-5.5'	soil	2012-06-01	00:00	2012-06-04
299918	AH-1 6-6.5'	soil	2012-06-01	00:00	2012-06-04
299919	AH-1 7-7.5'	soil	2012-06-01	00:00	2012-06-04
299920	AH-1 8-8.5'	soil	2012-06-01	00:00	2012-06-04
299921	AH-2 0-1'	soil	2012-06-01	00:00	2012-06-04
299922	AH-2 1-1.5'	soil	2012-06-01	00:00	2012-06-04
299923	AH-2 2-2.5'	soil	2012-06-01	00:00	2012-06-04
299924	AH-2 3-3.5'	soil	2012-06-01	00:00	2012-06-04
299925	AH-2 4-4.5'	soil	2012-06-01	00:00	2012-06-04
299926	AH-2 5-5.5'	soil	2012-06-01	00:00	2012-06-04
299927	AH-2 6-6.5'	soil	2012-06-01	00:00	2012-06-04
299928	AH-2 7-7.5'	soil	2012-06-01	00:00	2012-06-04
299929	AH-2 8-8.5'	soil	2012-06-01	00:00	2012-06-04

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 37 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project COG/Texaco State BE Tank Battery were received by TraceAnalysis, Inc. on 2012-06-04 and assigned to work order 12060502. Samples for work order 12060502 were received intact at a temperature of 2.6 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	77967	2012-06-06 at 08:30	91895	2012-06-06 at 09:20
BTEX	S 8021B	78016	2012-06-08 at 14:30	91972	2012-06-08 at 15:06
Chloride (Titration)	SM 4500-Cl B	78015	2012-06-08 at 09:59	91995	2012-06-11 at 14:24
Chloride (Titration)	SM 4500-Cl B	78015	2012-06-08 at 09:59	91997	2012-06-11 at 14:25
Chloride (Titration)	SM 4500-Cl B	78015	2012-06-08 at 09:59	92013	2012-06-12 at 08:25
TPH DRO - NEW	S 8015 D	78010	2012-06-07 at 15:30	91950	2012-06-07 at 15:00
TPH DRO - NEW	S 8015 D	78030	2012-06-09 at 11:00	91976	2012-06-09 at 14:05
TPH GRO	S 8015 D	77967	2012-06-06 at 08:30	91896	2012-06-06 at 09:47
TPH GRO	S 8015 D	78016	2012-06-08 at 14:30	91973	2012-06-08 at 15:32

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12060502 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 299912 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91895	Date Analyzed:	2012-06-06	Analyzed By:	AG
Prep Batch:	77967	Sample Preparation:	2012-06-06	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.29	mg/Kg	1	2.00	114	70 - 135.4
4-Bromofluorobenzene (4-BFB)			3.16	mg/Kg	1	2.00	158	53.6 - 158.9

Sample: 299912 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91995	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**9180**	mg/Kg	10	4.00

Sample: 299912 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91950	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	Sample Preparation:	2012-06-07	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			97.8	mg/Kg	1	100	98	55.1 - 135.7

Sample: 299912 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91896	Date Analyzed:	2012-06-06	Analyzed By:	AG
Prep Batch:	77967	Sample Preparation:	2012-06-06	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs,U	1	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.31	mg/Kg	1	2.00	116	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.36	mg/Kg	1	2.00	168	45.1 - 162.2

Sample: 299913 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91997	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**718**	mg/Kg	5	4.00

Sample: 299914 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91997	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

continued ...

sample 299914 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**526**	mg/Kg	5	4.00

Sample: 299915 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91997	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**347**	mg/Kg	5	4.00

Sample: 299916 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91997	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**540**	mg/Kg	5	4.00

Sample: 299917 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91997	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2320**	mg/Kg	10	4.00

Sample: 299918 - AH-1 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91997	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2770**	mg/Kg	10	4.00

Sample: 299919 - AH-1 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91997	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4590**	mg/Kg	10	4.00

Sample: 299920 - AH-1 8-8.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91997	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**5660**	mg/Kg	10	4.00

Sample: 299921 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91895	Date Analyzed:	2012-06-06	Analyzed By:	AG
Prep Batch:	77967	Sample Preparation:	2012-06-06	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	<1.00	mg/Kg	50	0.0200
Toluene		1	**6.35**	mg/Kg	50	0.0200
Ethylbenzene		1	**3.51**	mg/Kg	50	0.0200
Xylene		1	**28.2**	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			56.8	mg/Kg	50	50.0	114	70 - 135.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	88.6	mg/Kg	50	50.0	177	53.6 - 158.9

Sample: 299921 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91997	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1640**	mg/Kg	10	4.00

Sample: 299921 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91950	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	Sample Preparation:	2012-06-07	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**5750**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	527	mg/Kg	5	100	527	55.1 - 135.7

Sample: 299921 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91896	Date Analyzed:	2012-06-06	Analyzed By:	AG
Prep Batch:	77967	Sample Preparation:	2012-06-06	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**2730**	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			56.9	mg/Kg	50	50.0	114	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	112	mg/Kg	50	50.0	224	45.1 - 162.2

Sample: 299922 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91972	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**4.05**	mg/Kg	100	0.0200
Toluene		1	**53.9**	mg/Kg	100	0.0200
Ethylbenzene		1	**28.6**	mg/Kg	100	0.0200
Xylene		1	**76.9**	mg/Kg	100	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			99.6	mg/Kg	100	100	100	70 - 135.4
4-Bromofluorobenzene (4-BFB)			109	mg/Kg	100	100	109	53.6 - 158.9

Sample: 299922 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91997	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

continued ...

sample 299922 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2280**	mg/Kg	5	4.00

Sample: 299922 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91950	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	Sample Preparation:	2012-06-07	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**10000**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	625	mg/Kg	5	100	625	55.1 - 135.7

Sample: 299922 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91973	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**2520**	mg/Kg	100	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			85.4	mg/Kg	100	100	85	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			84.9	mg/Kg	100	100	85	45.1 - 162.2

Sample: 299923 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91972	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<1.00	mg/Kg	50	0.0200
Toluene		1	**12.7**	mg/Kg	50	0.0200
Ethylbenzene		1	**1.19**	mg/Kg	50	0.0200
Xylene		1	**24.3**	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			49.1	mg/Kg	50	50.0	98	70 - 135.4
4-Bromofluorobenzene (4-BFB)			50.9	mg/Kg	50	50.0	102	53.6 - 158.9

Sample: 299923 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92013	Date Analyzed:	2012-06-12	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**478**	mg/Kg	5	4.00

Sample: 299923 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91976	Date Analyzed:	2012-06-09	Analyzed By:	AG
Prep Batch:	78030	Sample Preparation:	2012-06-09	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**3030**	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane Qsr	Qsr		373	mg/Kg	10	100	373	55.1 - 135.7

Sample: 299923 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91973	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	Sample Preparation:	2012-06-08	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**1040**	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			42.0	mg/Kg	50	50.0	84	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			43.6	mg/Kg	50	50.0	87	45.1 - 162.2

Sample: 299924 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92013	Date Analyzed:	2012-06-12	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3440**	mg/Kg	10	4.00

Sample: 299925 - AH-2 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92013	Date Analyzed:	2012-06-12	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**8620**	mg/Kg	10	4.00

Sample: 299926 - AH-2 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92013	Date Analyzed:	2012-06-12	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**5720**	mg/Kg	10	4.00

Sample: 299927 - AH-2 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92013	Date Analyzed:	2012-06-12	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3760**	mg/Kg	10	4.00

Sample: 299928 - AH-2 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92013	Date Analyzed:	2012-06-12	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**917**	mg/Kg	5	4.00

Sample: 299929 - AH-2 8-8.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92013	Date Analyzed:	2012-06-12	Analyzed By:	AR
Prep Batch:	78015	Sample Preparation:	2012-06-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4690**	mg/Kg	10	4.00

Method Blanks

Method Blank (1) QC Batch: 91895

QC Batch:	91895	Date Analyzed:	2012-06-06	Analyzed By:	AG
Prep Batch:	77967	QC Preparation:	2012-06-06	Prepared By:	AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00470	mg/Kg	0.02
Toluene		1	<0.00980	mg/Kg	0.02
Ethylbenzene		1	<0.00500	mg/Kg	0.02
Xylene		1	<0.0170	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.61	mg/Kg	1	2.00	80	51.3 - 122.4

Method Blank (1) QC Batch: 91896

QC Batch:	91896	Date Analyzed:	2012-06-06	Analyzed By:	AG
Prep Batch:	77967	QC Preparation:	2012-06-06	Prepared By:	AG

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<1.22	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.90	mg/Kg	1	2.00	95	78.6 - 131
4-Bromofluorobenzene (4-BFB)			1.62	mg/Kg	1	2.00	81	51 - 130

Method Blank (1) QC Batch: 91950

QC Batch:	91950	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	QC Preparation:	2012-06-07	Prepared By:	AG

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.7	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			119	mg/Kg	1	100	119	61.6 - 141.2

Method Blank (1) QC Batch: 91972

QC Batch: 91972 | Date Analyzed: 2012-06-08 | Analyzed By: AG
Prep Batch: 78016 | QC Preparation: 2012-06-08 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00470	mg/Kg	0.02
Toluene		1	<0.00980	mg/Kg	0.02
Ethylbenzene		1	<0.00500	mg/Kg	0.02
Xylene		1	<0.0170	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.86	mg/Kg	1	2.00	93	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.52	mg/Kg	1	2.00	76	51.3 - 122.4

Method Blank (1) QC Batch: 91973

QC Batch: 91973 | Date Analyzed: 2012-06-08 | Analyzed By: AG
Prep Batch: 78016 | QC Preparation: 2012-06-08 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<1.22	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	78.6 - 131
4-Bromofluorobenzene (4-BFB)			1.11	mg/Kg	1	2.00	56	51 - 130

Method Blank (1) QC Batch: 91976

QC Batch:	91976	Date Analyzed:	2012-06-09	Analyzed By:	AG
Prep Batch:	78030	QC Preparation:	2012-06-09	Prepared By:	AG

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.7	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			137	mg/Kg	1	100	137	61.6 - 141.2

Method Blank (1) QC Batch: 91995

QC Batch:	91995	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	QC Preparation:	2012-06-08	Prepared By:	AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 91997

QC Batch:	91997	Date Analyzed:	2012-06-11	Analyzed By:	AR
Prep Batch:	78015	QC Preparation:	2012-06-08	Prepared By:	AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 92013

QC Batch:	92013	Date Analyzed:	2012-06-12	Analyzed By:	AR
Prep Batch:	78015	QC Preparation:	2012-06-08	Prepared By:	AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 91895 | Date Analyzed: 2012-06-06 | Analyzed By: AG
Prep Batch: 77967 | QC Preparation: 2012-06-06 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.12	mg/Kg	1	2.00	<0.00470	106	86.5 - 124.9
Toluene		1	2.04	mg/Kg	1	2.00	<0.00980	102	84.7 - 122.5
Ethylbenzene		1	1.85	mg/Kg	1	2.00	<0.00500	92	79.4 - 118.9
Xylene		1	5.37	mg/Kg	1	6.00	<0.0170	90	77.5 - 119

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.18	mg/Kg	1	2.00	<0.00470	109	86.5 - 124.9	3	20
Toluene		1	2.09	mg/Kg	1	2.00	<0.00980	104	84.7 - 122.5	2	20
Ethylbenzene		1	1.89	mg/Kg	1	2.00	<0.00500	94	79.4 - 118.9	2	20
Xylene		1	5.50	mg/Kg	1	6.00	<0.0170	92	77.5 - 119	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.93	1.86	mg/Kg	1	2.00	96	93	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.24	2.02	mg/Kg	1	2.00	112	101	65.4 - 149.9

Laboratory Control Spike (LCS-1)

QC Batch: 91896 | Date Analyzed: 2012-06-06 | Analyzed By: AG
Prep Batch: 77967 | QC Preparation: 2012-06-06 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.9	mg/Kg	1	20.0	<1.22	74	65.3 - 105.7

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	16.3	mg/Kg	1	20.0	<1.22	82	65.3 - 105.7	9	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.88	1.93	mg/Kg	1	2.00	94	96	79 - 131.2
4-Bromofluorobenzene (4-BFB)	1.89	1.94	mg/Kg	1	2.00	94	97	56.4 - 136.6

Laboratory Control Spike (LCS-1)

QC Batch: 91950 | Date Analyzed: 2012-06-07 | Analyzed By: AG
Prep Batch: 78010 | QC Preparation: 2012-06-07 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	246	mg/Kg	1	250	<15.7	98	66.9 - 119.9

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	249	mg/Kg	1	250	<15.7	100	66.9 - 119.9	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	94.0	94.4	mg/Kg	1	100	94	94	76.8 - 140.2

Laboratory Control Spike (LCS-1)

QC Batch: 91972 | Date Analyzed: 2012-06-08 | Analyzed By: AG
Prep Batch: 78016 | QC Preparation: 2012-06-08 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.00	mg/Kg	1	2.00	<0.00470	100	86.5 - 124.9

continued ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Toluene		1	1.95	mg/Kg	1	2.00	<0.00980	98	84.7 - 122.5
Ethylbenzene		1	1.97	mg/Kg	1	2.00	<0.00500	98	79.4 - 118.9
Xylene		1	5.80	mg/Kg	1	6.00	<0.0170	97	77.5 - 119

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.02	mg/Kg	1	2.00	<0.00470	101	86.5 - 124.9	1	20
Toluene		1	2.02	mg/Kg	1	2.00	<0.00980	101	84.7 - 122.5	4	20
Ethylbenzene		1	2.03	mg/Kg	1	2.00	<0.00500	102	79.4 - 118.9	3	20
Xylene		1	5.97	mg/Kg	1	6.00	<0.0170	100	77.5 - 119	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.02	2.08	mg/Kg	1	2.00	101	104	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.23	2.34	mg/Kg	1	2.00	112	117	65.4 - 149.9

Laboratory Control Spike (LCS-1)

QC Batch: 91973 | Date Analyzed: 2012-06-08 | Analyzed By: AG
Prep Batch: 78016 | QC Preparation: 2012-06-08 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.7	mg/Kg	1	20.0	<1.22	74	65.3 - 105.7

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	14.3	mg/Kg	1	20.0	<1.22	72	65.3 - 105.7	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.85	1.81	mg/Kg	1	2.00	92	90	79 - 131.2
4-Bromofluorobenzene (4-BFB)	1.65	1.54	mg/Kg	1	2.00	82	77	56.4 - 136.6

Laboratory Control Spike (LCS-1)

QC Batch: 91976 | Date Analyzed: 2012-06-09 | Analyzed By: AG
Prep Batch: 78030 | QC Preparation: 2012-06-09 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	256	mg/Kg	1	250	<15.7	102	66.9 - 119.9

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	264	mg/Kg	1	250	<15.7	106	66.9 - 119.9	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	104	103	mg/Kg	1	100	104	103	76.8 - 140.2

Laboratory Control Spike (LCS-1)

QC Batch: 91995 | Date Analyzed: 2012-06-11 | Analyzed By: AR
Prep Batch: 78015 | QC Preparation: 2012-06-08 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2620	mg/Kg	1	2500	<3.85	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2700	mg/Kg	1	2500	<3.85	108	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 91997 | Date Analyzed: 2012-06-11 | Analyzed By: AR
Prep Batch: 78015 | QC Preparation: 2012-06-08 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2590	mg/Kg	1	2500	<3.85	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2760	mg/Kg	1	2500	<3.85	110	85 - 115	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 92013 | Date Analyzed: 2012-06-12 | Analyzed By: AR
Prep Batch: 78015 | QC Preparation: 2012-06-08 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2500	mg/Kg	1	2500	<3.85	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2620	mg/Kg	1	2500	<3.85	105	85 - 115	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 299882

QC Batch: 91895 | Date Analyzed: 2012-06-06 | Analyzed By: AG
Prep Batch: 77967 | QC Preparation: 2012-06-06 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.95	mg/Kg	1	2.00	0.0175	97	69.3 - 159.2
Toluene		1	1.94	mg/Kg	1	2.00	0.0538	94	68.7 - 157
Ethylbenzene		1	1.90	mg/Kg	1	2.00	<0.00500	95	71.6 - 158.2
Xylene		1	5.36	mg/Kg	1	6.00	0.02	89	70.8 - 159.8

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.08	mg/Kg	1	2.00	0.0175	103	69.3 - 159.2	6	20
Toluene		1	2.07	mg/Kg	1	2.00	0.0538	101	68.7 - 157	6	20
Ethylbenzene		1	2.01	mg/Kg	1	2.00	<0.00500	100	71.6 - 158.2	6	20
Xylene		1	5.66	mg/Kg	1	6.00	0.02	94	70.8 - 159.8	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.29	2.18	mg/Kg	1	2	114	109	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	2.39	2.18	mg/Kg	1	2	120	109	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 299886

QC Batch: 91896 | Date Analyzed: 2012-06-06 | Analyzed By: AG
Prep Batch: 77967 | QC Preparation: 2012-06-06 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	1	32.6	mg/Kg	1	20.0	<1.22	163	28.2 - 157.2

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qs	Qs	1	39.2	mg/Kg	1	20.0	<1.22	196	28.2 - 157.2	18	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	2.63	2.39	mg/Kg	1	2	132	120	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	4.25	3.89	mg/Kg	1	2	212	194	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 299890

QC Batch: 91950 | Date Analyzed: 2012-06-07 | Analyzed By: AG
Prep Batch: 78010 | QC Preparation: 2012-06-07 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	246	mg/Kg	1	250	<15.7	98	36.1 - 147.2

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	219	mg/Kg	1	250	<15.7	88	36.1 - 147.2	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	91.3	88.0	mg/Kg	1	100	91	88	78.3 - 131.6

Matrix Spike (MS-1) Spiked Sample: 299940

QC Batch: 91972 | Date Analyzed: 2012-06-08 | Analyzed By: AG
Prep Batch: 78016 | QC Preparation: 2012-06-08 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.94	mg/Kg	1	2.00	<0.00470	97	69.3 - 159.2
Toluene		1	1.98	mg/Kg	1	2.00	<0.00980	99	68.7 - 157
Ethylbenzene		1	2.17	mg/Kg	1	2.00	<0.00500	108	71.6 - 158.2
Xylene		1	6.34	mg/Kg	1	6.00	<0.0170	106	70.8 - 159.8

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.82	mg/Kg	1	2.00	<0.00470	91	69.3 - 159.2	6	20
Toluene		1	1.84	mg/Kg	1	2.00	<0.00980	92	68.7 - 157	7	20
Ethylbenzene		1	1.96	mg/Kg	1	2.00	<0.00500	98	71.6 - 158.2	10	20
Xylene		1	5.68	mg/Kg	1	6.00	<0.0170	95	70.8 - 159.8	11	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.11	2.36	mg/Kg	1	2	106	118	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	2.25	2.31	mg/Kg	1	2	112	116	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 299880

QC Batch: 91973 | Date Analyzed: 2012-06-08 | Analyzed By: AG
Prep Batch: 78016 | QC Preparation: 2012-06-08 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	29.1	mg/Kg	1	20.0	1.87	136	28.2 - 157.2

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	29.2	mg/Kg	1	20.0	1.87	146	28.2 - 157.2	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.15	2.12	mg/Kg	1	2	108	106	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	2.25	2.42	mg/Kg	1	2	112	121	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 299946

QC Batch: 91976 | Date Analyzed: 2012-06-09 | Analyzed By: AG
Prep Batch: 78030 | QC Preparation: 2012-06-09 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	243	mg/Kg	1	250	16.8	90	36.1 - 147.2

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	240	mg/Kg	1	250	16.8	89	36.1 - 147.2	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	98.4	99.1	mg/Kg	1	100	98	99	78.3 - 131.6

Matrix Spike (MS-1) Spiked Sample: 299912

QC Batch: 91995 | Date Analyzed: 2012-06-11 | Analyzed By: AR
Prep Batch: 78015 | QC Preparation: 2012-06-08 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			11700	mg/Kg	10	2500	9180	101	79.4 - 120.6

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			12100	mg/Kg	10	2500	9180	117	79.4 - 120.6	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 299922

QC Batch: 91997 | Date Analyzed: 2012-06-11 | Analyzed By: AR
Prep Batch: 78015 | QC Preparation: 2012-06-08 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4640	mg/Kg	10	2500	2280	94	79.4 - 120.6

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			4810	mg/Kg	10	2500	2280	101	79.4 - 120.6	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 299932

QC Batch: 92013 | Date Analyzed: 2012-06-12 | Analyzed By: AR
Prep Batch: 78015 | QC Preparation: 2012-06-08 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	mg/Kg	5	2500	<19.2	105	79.4 - 120.6

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2810	mg/Kg	5	2500	<19.2	112	79.4 - 120.6	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-2)

QC Batch: 91895 | Date Analyzed: 2012-06-06 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0987	99	80 - 120	2012-06-06
Toluene		1	mg/kg	0.100	0.0937	94	80 - 120	2012-06-06
Ethylbenzene		1	mg/kg	0.100	0.0851	85	80 - 120	2012-06-06
Xylene		1	mg/kg	0.300	0.243	81	80 - 120	2012-06-06

Standard (CCV-3)

QC Batch: 91895 | Date Analyzed: 2012-06-06 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.102	102	80 - 120	2012-06-06
Toluene		1	mg/kg	0.100	0.103	103	80 - 120	2012-06-06
Ethylbenzene		1	mg/kg	0.100	0.104	104	80 - 120	2012-06-06
Xylene		1	mg/kg	0.300	0.322	107	80 - 120	2012-06-06

Standard (CCV-2)

QC Batch: 91896 | Date Analyzed: 2012-06-06 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.901	90	80 - 120	2012-06-06

Standard (CCV-3)

QC Batch: 91896 | Date Analyzed: 2012-06-06 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.10	110	80 - 120	2012-06-06

Standard (CCV-2)

QC Batch: 91950 Date Analyzed: 2012-06-07 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	242	97	80 - 120	2012-06-07

Standard (CCV-3)

QC Batch: 91950 Date Analyzed: 2012-06-07 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	223	89	80 - 120	2012-06-07

Standard (CCV-4)

QC Batch: 91950 Date Analyzed: 2012-06-07 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	247	99	80 - 120	2012-06-07

Standard (CCV-1)

QC Batch: 91972 Date Analyzed: 2012-06-08 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.100	100	80 - 120	2012-06-08
Toluene		1	mg/kg	0.100	0.100	100	80 - 120	2012-06-08
Ethylbenzene		1	mg/kg	0.100	0.100	100	80 - 120	2012-06-08
Xylene		1	mg/kg	0.300	0.306	102	80 - 120	2012-06-08

Standard (CCV-2)

QC Batch: 91972 Date Analyzed: 2012-06-08 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0959	96	80 - 120	2012-06-08
Toluene		1	mg/kg	0.100	0.0925	92	80 - 120	2012-06-08
Ethylbenzene		1	mg/kg	0.100	0.0911	91	80 - 120	2012-06-08
Xylene		1	mg/kg	0.300	0.270	90	80 - 120	2012-06-08

Standard (CCV-3)

QC Batch: 91972 Date Analyzed: 2012-06-08 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0906	91	80 - 120	2012-06-08
Toluene		1	mg/kg	0.100	0.0882	88	80 - 120	2012-06-08
Ethylbenzene		1	mg/kg	0.100	0.0854	85	80 - 120	2012-06-08
Xylene		1	mg/kg	0.300	0.253	84	80 - 120	2012-06-08

Standard (CCV-1)

QC Batch: 91973 Date Analyzed: 2012-06-08 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.824	82	80 - 120	2012-06-08

Standard (CCV-2)

QC Batch: 91973 Date Analyzed: 2012-06-08 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.813	81	80 - 120	2012-06-08

Standard (CCV-3)

QC Batch: 91973 Date Analyzed: 2012-06-08 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.813	81	80 - 120	2012-06-08

Standard (CCV-1)

QC Batch: 91976 Date Analyzed: 2012-06-09 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	263	105	80 - 120	2012-06-09

Standard (CCV-2)

QC Batch: 91976 Date Analyzed: 2012-06-09 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	256	102	80 - 120	2012-06-09

Standard (CCV-1)

QC Batch: 91995 Date Analyzed: 2012-06-11 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.8	99	85 - 115	2012-06-11

Standard (CCV-2)

QC Batch: 91995 Date Analyzed: 2012-06-11 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-06-11

Standard (CCV-1)

QC Batch: 91997 Date Analyzed: 2012-06-11 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	102	102	85 - 115	2012-06-11

Standard (CCV-2)

QC Batch: 91997 Date Analyzed: 2012-06-11 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.5	98	85 - 115	2012-06-11

Standard (CCV-1)

QC Batch: 92013 Date Analyzed: 2012-06-12 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-06-12

Standard (CCV-2)

QC Batch: 92013 | Date Analyzed: 2012-06-12 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.3	99	85 - 115	2012-06-12

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-11-3	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

12060502

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640 1410

PROJECT NAME: Texaco State BE Tank Battery
Eddy Co., NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
912	6/1		S		X	AH-1 0-1'	1				X		X	X											X				
913						1-1.5'	1				X														X				
914						2-2.5'	1				X														X				
915						3-3.5'	1				X														X				
916						4-4.5'	1				X														X				
917						5-5.5'	1				X														X				
918						6-6.5'	1				X														X				
919						7-7.5'	1				X														X				
920						8-8.5'	1				X														X				
921						AH-2 0-1'	1				X		X	X											X				

RELINQUISHED BY: (Signature) Date: 6/4/12 Time: 2:30 PM
RECEIVED BY: (Signature) Date: 6/4/12 Time: 15:30

SAMPLED BY: (Print & Initial) Kim Date: 6/4/12 Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #:
OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RECEIVING LABORATORY: TRACE
ADDRESS:
CITY: MIDLAND STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 2.6°

REMARKS: If TPH > 5,000 mg/kg or Total BTEX > 50 mg/kg Run deeper samples

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

1206502

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 2

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640 14110

PROJECT NAME: Texaco State BE Tank Battery
Eddy Co., NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
922	6/1		S		X	AH-2 1-1.5'	1				X													X				
923						2-2.5'	1				X													X				
924						3-3.5'	1				X													X				
925						4-4.5'	1				X													X				
926						5-5.5'	1				X													X				
927						6-6.5'	1				X													X				
928						7-7.5'	1				X													X				
929						8-8.5'	1				X													X				

ANALYSIS REQUEST
(Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Date: 6/6/12 Time: 8:30 AM — RECEIVED BY: (Signature) Date: 6/6/12 Time: 15:30

RELINQUISHED BY: (Signature) Date: Time: — RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time: — RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Kim Date: 6/4/12 Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS
AIRBILL #:
OTHER:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: TRACE
ADDRESS:
CITY: MIDLAND STATE: TX ZIP:
CONTACT: PHONE: DATE: TIME:
RECEIVED BY: (Signature)

SAMPLE CONDITION WHEN RECEIVED: 2.6

REMARKS: If TPH > 5,000 mg/kg or Total BTEX > 50 mg/kg — Run deeper Samples

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Summary Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: June 25, 2013

Work Order: 13061820

Project Location: Eddy Co., NM
Project Name: COG/Texaco State BE Tank Battery
Project Number: 114-6401410

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
332526	SB-1 59-60'	soil	2013-06-06	00:00	2013-06-18
332527	SB-1 69-70'	soil	2013-06-06	00:00	2013-06-18
332528	SB-1 79-80'	soil	2013-06-06	00:00	2013-06-18
332529	SB-1 89-90'	soil	2013-06-06	00:00	2013-06-18
332530	SB-1 99-100'	soil	2013-06-06	00:00	2013-06-18
332531	SB-1 109-110'	soil	2013-06-06	00:00	2013-06-18

Sample: 332526 - SB-1 59-60'

Param	Flag	Result	Units	RL
Chloride		**1640**	mg/Kg	4

Sample: 332527 - SB-1 69-70'

Param	Flag	Result	Units	RL
Chloride		**2920**	mg/Kg	4

Sample: 332528 - SB-1 79-80'

Param	Flag	Result	Units	RL
Chloride		**1260**	mg/Kg	4

Sample: 332529 - SB-1 89-90'

Param	Flag	Result	Units	RL
Chloride		**3560**	mg/Kg	4

Sample: 332530 - SB-1 99-100'

Param	Flag	Result	Units	RL
Chloride		**1060**	mg/Kg	4

Sample: 332531 - SB-1 109-110'

Param	Flag	Result	Units	RL
Chloride		**6140**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: June 25, 2013

Work Order: 13061820

Project Location: Eddy Co., NM
Project Name: COG/Texaco State BE Tank Battery
Project Number: 114-6401410

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
332526	SB-1 59-60'	soil	2013-06-06	00:00	2013-06-18
332527	SB-1 69-70'	soil	2013-06-06	00:00	2013-06-18
332528	SB-1 79-80'	soil	2013-06-06	00:00	2013-06-18
332529	SB-1 89-90'	soil	2013-06-06	00:00	2013-06-18
332530	SB-1 99-100'	soil	2013-06-06	00:00	2013-06-18
332531	SB-1 109-110'	soil	2013-06-06	00:00	2013-06-18

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Michael Abel

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project COG/Texaco State BE Tank Battery were received by TraceAnalysis, Inc. on 2013-06-18 and assigned to work order 13061820. Samples for work order 13061820 were received intact at a temperature of 4.3 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	86840	2013-06-21 at 13:49	102555	2013-06-24 at 12:40

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13061820 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 332526 - SB-1 59-60'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102555	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1640**	mg/Kg	10	4.00

Sample: 332527 - SB-1 69-70'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102555	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**2920**	mg/Kg	10	4.00

Sample: 332528 - SB-1 79-80'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102555	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1260**	mg/Kg	10	4.00

Sample: 332529 - SB-1 89-90'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102555	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3560**	mg/Kg	10	4.00

Sample: 332530 - SB-1 99-100'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102555	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1060**	mg/Kg	10	4.00

Sample: 332531 - SB-1 109-110'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102555	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	Sample Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6140**	mg/Kg	10	4.00

Method Blanks

Method Blank (1) QC Batch: 102555

QC Batch:	102555	Date Analyzed:	2013-06-24	Analyzed By:	AR
Prep Batch:	86840	QC Preparation:	2013-06-21	Prepared By:	AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 102555 | Date Analyzed: 2013-06-24 | Analyzed By: AR
Prep Batch: 86840 | QC Preparation: 2013-06-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2690	mg/Kg	1	2500	<3.85	108	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2610	mg/Kg	1	2500	<3.85	104	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 332535

QC Batch: 102555 | Date Analyzed: 2013-06-24 | Analyzed By: AR
Prep Batch: 86840 | QC Preparation: 2013-06-21 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3540	mg/Kg	10	2500	1220	93	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3900	mg/Kg	10	2500	1220	107	78.9 - 121	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-1)

QC Batch: 102555 Date Analyzed: 2013-06-24 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-06-24

Standard (CCV-2)

QC Batch: 102555 Date Analyzed: 2013-06-24 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.9	100	85 - 115	2013-06-24

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

3061820

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640410

PROJECT NAME: Texaco State BE Tank Battery
Eddy Co NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	Chloride
332526	6/6		S	X		SB-1 59-60'	1						X
527						69-70'							
528						79-80'							
529						89-90'							
530						99-100'							
531						109-110'							
~~532~~													

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B; TPH 8015 MOD. TX1005 (Ext. to C35); PAH 8270; RCRA Metals Ag As Ba Cd Cr Pb Hg Se; TCLP Metals Ag As Ba Cd Vr Pd Hg Se; TCLP Volatiles; TCLP Semi Volatiles; RCI; GC.MS Vol. 8240/8260/624; GC.MS Semi. Vol. 8270/625; PCB's 8080/608; Pest. 808/608; Chloride; Gamma Spec.; Alpha Beta (Air); PLM (Asbestos); Major Anions/Cations, pH, TDS

RELINQUISHED BY: (Signature)	Date: 6-18-13 Time: 1112	RECEIVED BY: (Signature)	Date: 6/18/13 Time: 1112
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) TF — Date: 6-6-13 Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

TETRA TECH CONTACT PERSON: Ike

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Xenco — RECEIVED BY: (Signature)

ADDRESS: Midland CITY: STATE: TX ZIP:

CONTACT: PHONE: DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED: +30

REMARKS: Midland - all

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Summary Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: September 24, 2012

Work Order: 12091432

Project Location: Eddy Co., NM
Project Name: COG/Texaco State BE Tank Battery
Project Number: 114-6401410

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
309391	Bore Hole 1 0-1'	soil	2012-09-12	00:00	2012-09-14
309392	Bore Hole 1 2-3'	soil	2012-09-12	00:00	2012-09-14
309393	Bore Hole 1 4-5'	soil	2012-09-12	00:00	2012-09-14
309394	Bore Hole 1 6-7'	soil	2012-09-12	00:00	2012-09-14
309395	Bore Hole 1 9-10'	soil	2012-09-12	00:00	2012-09-14
309396	Bore Hole 1 14-15'	soil	2012-09-12	00:00	2012-09-14
309397	Bore Hole 1 19-20'	soil	2012-09-12	00:00	2012-09-14
309398	Bore Hole 1 24-25'	soil	2012-09-12	00:00	2012-09-14
309399	Bore Hole 1 29-30'	soil	2012-09-12	00:00	2012-09-14
309400	Bore Hole 1 39-40'	soil	2012-09-12	00:00	2012-09-14
309401	Bore Hole 1 49-50'	soil	2012-09-12	00:00	2012-09-14
309402	Bore Hole 1 59-60'	soil	2012-09-12	00:00	2012-09-14
309403	Bore Hole 1 69-70'	soil	2012-09-12	00:00	2012-09-14

Sample: 309391 - Bore Hole 1 0-1'

Param	Flag	Result	Units	RL
Chloride		**35500**	mg/Kg	4

Sample: 309392 - Bore Hole 1 2-3'

Param	Flag	Result	Units	RL
Chloride		**11200**	mg/Kg	4

Sample: 309393 - Bore Hole 1 4-5'

Param	Flag	Result	Units	RL
Chloride		**555**	mg/Kg	4

Sample: 309394 - Bore Hole 1 6-7'

Param	Flag	Result	Units	RL
Chloride		**1660**	mg/Kg	4

Sample: 309395 - Bore Hole 1 9-10'

Param	Flag	Result	Units	RL
Chloride		**3910**	mg/Kg	4

Sample: 309396 - Bore Hole 1 14-15'

Param	Flag	Result	Units	RL
Chloride		**3590**	mg/Kg	4

Sample: 309397 - Bore Hole 1 19-20'

Param	Flag	Result	Units	RL
Chloride		**4520**	mg/Kg	4

Sample: 309398 - Bore Hole 1 24-25'

Param	Flag	Result	Units	RL
Chloride		**6800**	mg/Kg	4

Sample: 309399 - Bore Hole 1 29-30'

Param	Flag	Result	Units	RL
Chloride		**7540**	mg/Kg	4

Sample: 309400 - Bore Hole 1 39-40'

Param	Flag	Result	Units	RL
Chloride		**12200**	mg/Kg	4

Sample: 309401 - Bore Hole 1 49-50'

Param	Flag	Result	Units	RL
Chloride		**4620**	mg/Kg	4

Sample: 309402 - Bore Hole 1 59-60'

Param	Flag	Result	Units	RL
Chloride		**3990**	mg/Kg	4

Sample: 309403 - Bore Hole 1 69-70'

Param	Flag	Result	Units	RL
Chloride		**3840**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: September 24, 2012

Work Order: 12091432

Project Location: Eddy Co., NM
Project Name: COG/Texaco State BE Tank Battery
Project Number: 114-6401410

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
309391	Bore Hole 1 0-1'	soil	2012-09-12	00:00	2012-09-14
309392	Bore Hole 1 2-3'	soil	2012-09-12	00:00	2012-09-14
309393	Bore Hole 1 4-5'	soil	2012-09-12	00:00	2012-09-14
309394	Bore Hole 1 6-7'	soil	2012-09-12	00:00	2012-09-14
309395	Bore Hole 1 9-10'	soil	2012-09-12	00:00	2012-09-14
309396	Bore Hole 1 14-15'	soil	2012-09-12	00:00	2012-09-14
309397	Bore Hole 1 19-20'	soil	2012-09-12	00:00	2012-09-14
309398	Bore Hole 1 24-25'	soil	2012-09-12	00:00	2012-09-14
309399	Bore Hole 1 29-30'	soil	2012-09-12	00:00	2012-09-14
309400	Bore Hole 1 39-40'	soil	2012-09-12	00:00	2012-09-14
309401	Bore Hole 1 49-50'	soil	2012-09-12	00:00	2012-09-14
309402	Bore Hole 1 59-60'	soil	2012-09-12	00:00	2012-09-14
309403	Bore Hole 1 69-70'	soil	2012-09-12	00:00	2012-09-14

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project COG/Texaco State BE Tank Battery were received by TraceAnalysis, Inc. on 2012-09-14 and assigned to work order 12091432. Samples for work order 12091432 were received intact at a temperature of 16.4 C. Samples were received on ice.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	80570	2012-09-20 at 10:37	95108	2012-09-24 at 16:05
Chloride (Titration)	SM 4500-Cl B	80570	2012-09-20 at 10:37	95109	2012-09-24 at 16:06

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12091432 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 309391 - Bore Hole 1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95108	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**35500**	mg/Kg	10	4.00

Sample: 309392 - Bore Hole 1 2-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95108	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**11200**	mg/Kg	10	4.00

Sample: 309393 - Bore Hole 1 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95108	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**555**	mg/Kg	5	4.00

Sample: 309394 - Bore Hole 1 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95108	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1660**	mg/Kg	10	4.00

Sample: 309395 - Bore Hole 1 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95108	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**3910**	mg/Kg	10	4.00

Sample: 309396 - Bore Hole 1 14-15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95108	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**3590**	mg/Kg	10	4.00

Sample: 309397 - Bore Hole 1 19-20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95108	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4520**	mg/Kg	10	4.00

Sample: 309398 - Bore Hole 1 24-25'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95108	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6800**	mg/Kg	10	4.00

Sample: 309399 - Bore Hole 1 29-30'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95108	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**7540**	mg/Kg	10	4.00

Sample: 309400 - Bore Hole 1 39-40'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95108	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**12200**	mg/Kg	10	4.00

Sample: 309401 - Bore Hole 1 49-50'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95109	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4620**	mg/Kg	10	4.00

Sample: 309402 - Bore Hole 1 59-60'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95109	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3990**	mg/Kg	10	4.00

Sample: 309403 - Bore Hole 1 69-70'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95109	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	Sample Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3840**	mg/Kg	10	4.00

Method Blanks

Method Blank (1) QC Batch: 95108

QC Batch:	95108	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	QC Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 95109

QC Batch:	95109	Date Analyzed:	2012-09-24	Analyzed By:	AR
Prep Batch:	80570	QC Preparation:	2012-09-20	Prepared By:	AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 95108 | Date Analyzed: 2012-09-24 | Analyzed By: AR
Prep Batch: 80570 | QC Preparation: 2012-09-20 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2600	mg/Kg	1	2500	<3.85	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2530	mg/Kg	1	2500	<3.85	101	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 95109 | Date Analyzed: 2012-09-24 | Analyzed By: AR
Prep Batch: 80570 | QC Preparation: 2012-09-20 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2680	mg/Kg	1	2500	<3.85	107	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2610	mg/Kg	1	2500	<3.85	104	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 309400

QC Batch: 95108 | Date Analyzed: 2012-09-24 | Analyzed By: AR
Prep Batch: 80570 | QC Preparation: 2012-09-20 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			14900	mg/Kg	10	2500	12200	108	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			15100	mg/Kg	10	2500	12200	116	78.9 - 121	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 309410

QC Batch: 95109 | Date Analyzed: 2012-09-24 | Analyzed By: AR
Prep Batch: 80570 | QC Preparation: 2012-09-20 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2450	mg/Kg	5	2500	82.7	95	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2510	mg/Kg	5	2500	82.7	97	78.9 - 121	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-1)

QC Batch: 95108 | Date Analyzed: 2012-09-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.1	99	85 - 115	2012-09-24

Standard (CCV-2)

QC Batch: 95108 | Date Analyzed: 2012-09-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-09-24

Standard (CCV-1)

QC Batch: 95109 | Date Analyzed: 2012-09-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-09-24

Standard (CCV-2)

QC Batch: 95109 | Date Analyzed: 2012-09-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.7	99	85 - 115	2012-09-24

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

12091432

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640410

PROJECT NAME: Texaco State BE Tank Battery
Eddy Co NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
309391	9/12		S		X	Bore Hole 1	0-1'	1				
392							2-3'	1				
393							4-5'					
394							6-7'					
395							9-10'					
396							14-15'					
397							19-20'					
398							24-25'					
399							29-30'					
400							39-40'					

ANALYSIS REQUEST
(Circle or Specify Method No.)

BTEX 8021B
TPH 8015 MOD. TX1005 (Ext. to C35)
PAH 8270
RCRA Metals Ag As Ba Cd Cr Pb Hg Se
TCLP Metals Ag As Ba Cd Vr Pd Hg Se
TCLP Volatiles
TCLP Semi Volatiles
RCI
GC.MS Vol. 8240/8260/624
GC.MS Semi. Vol. 8270/625
PCB's 8080/608
Pest. 808/608
Chloride X
Gamma Spec.
Alpha Beta (Air)
PLM (Asbestos)
Major Anions/Cations, pH, TDS

RELINQUISHED BY: (Signature) — Date: 9-14-12 Time: 1235
RECEIVED BY: (Signature) — Date: 9/14/12 Time: 1235

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:

SAMPLED BY: (Print & Initial) TF — Date: 9-12-12 Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS

AIRBILL #:
OTHER:

TETRA TECH CONTACT PERSON: Ike

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED: 16 4° intact

REMARKS: Midland - all

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

12091432

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6401410

PROJECT NAME: Texaco State BE Tank Battery Eddy Co NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
401	9/12		S		X	Bore Hole 1 @ 49-50'	1					
402	↓		↓		↓	59-60'	↓					
403	↓		↓		↓	69-70'	↓					

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
												✓				
												✓				
												X				

RELINQUISHED BY: (Signature) Date: 9-14-12 Time: 1235 RECEIVED BY: (Signature) Date: 9/14/12 Time: 1235

SAMPLED BY: (Print & Initial) TF Date: 9-12-12 Time:

RELINQUISHED BY: (Signature) Date: Time: RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time: RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: Ike

Results by:

RECEIVING LABORATORY: Trace RECEIVED BY: (Signature)

ADDRESS: CITY: Midland STATE: TX ZIP: CONTACT: PHONE: DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 16.4 intact

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.