SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	**GJ West Coop Unit Central Tank Battery**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit P**	**Sec. 16**	**T-17-S**	**R-29-E**		
Lease Number:	**API-30-015-36308**					
County:	**Eddy County**					
GPS:	**32.82882° N**			**104.07365° W**		
Surface Owner:	State					
Mineral Owner:						
Directions:	Intersection of Hwy 82 and CR-214, travel North on CR-214 0.4 mi, turn left 0.3 mi, turn right 0.3 mi to location on left.					

Release Data:	
Date Released:	6/9/2012
Type Release:	Produced Fluids
Source of Contamination:	Fire burned flowlines
Fluid Released:	10 bbls oil and 20 bbls of produced water
Fluids Recovered:	None

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Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300		1910 N. Big Spring
P.O. Box			
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		Ike.Tavarez@tetratech.com

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

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	1,000

TETRA TECH

October 18, 2012

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., GJ West Coop Unit Central Tank Battery, Located Unit P, Section 16, Township 17 South, Range 29 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 GJ West Coop Unit Central Tank Battery, Located Unit P, Section 16, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.82882°, W 104.07365°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Release Report, the leak was discovered on June 9, 2012, and released approximately ten (10) barrels (bbls) of oil and twenty (20) bbls of produced fluid due to a fire from a power line failure burning and damaging the flow lines. Due to the fire consuming most of the free fluids, COG was not able to recover any free fluids. The spill impacted a measuring approximately 60'x 120'. The spill occurred in the pasture and contained along the south edge of the lease road. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 16. Based on the site location and NMOCD groundwater map, the average depth to groundwater in this area is approximately 90' below surface. The average depth to ground water map is shown in Appendix B.

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

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg.

Soil Assessment and Analytical Results

On July 3, 2012 and October 30, 2012 Tetra Tech personnel inspected and sampled the spill area. Four auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. 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, auger holes (AH-1 and AH-3) samples at 3-3.5' exceeded the RRAL for TPH, with concentrations of 3,870 mg/kg and 2,255 mg/kg, respectively. The TPH detected in these areas were not vertically defined. In addition, AH-1 and AH-3 also exceeded the RRAL for total BTEX, but declined below the RRAL at 2.0' below surface.

Elevated chlorides were detected in all of the auger holes and concentrations declined with depth. A shallow impact was detected in the areas of AH-1 and AH-2, with chloride concentrations declining at depths of 3.0' and 1.0', respectively. Auger hole (AH-1) sample at 9-9.5 showed a chloride concentration of 2,140 mg/kg, which appears to be cross-contamination from the upper soils. The remaining auger holes (AH-3 and AH-4) did show a deeper impact the soils and significantly declined with depth at approximately 5.0' to 6.0' below surface.

TETRA TECH

Remediation and Conclusion

On August 30, 2012 thru September 5, 2012 Tetra Tech personnel supervised the excavation of the site. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4. The excavated areas measured approximately 20' x 30' (AH-1), 20' x 30' (AH-2) and 20' x 50' (AH-3 & AH-4) at depths of approximately 2.0', 1.0' and 4.0' below surface, respectively. The excavated areas and depths are highlighted in Table 1. Approximately 492 cubic yards of soil were excavated and transported to the R360 facility for proper disposal.

As discussed in the work plan, the TPH concentrations were not defined in the areas of AH-1 and AH-3. On September 6, 2012, Tetra Tech collected confirmation samples from the excavation bottoms in these areas. The sampling results are shown in Table1. The confirmation samples from AH-1 and AH-3 were below the RRAL for TPH with concentrations of <50.0 mg/kg. Once excavated to the appropriate depth, the excavations were then backfilled to grade with clean material.

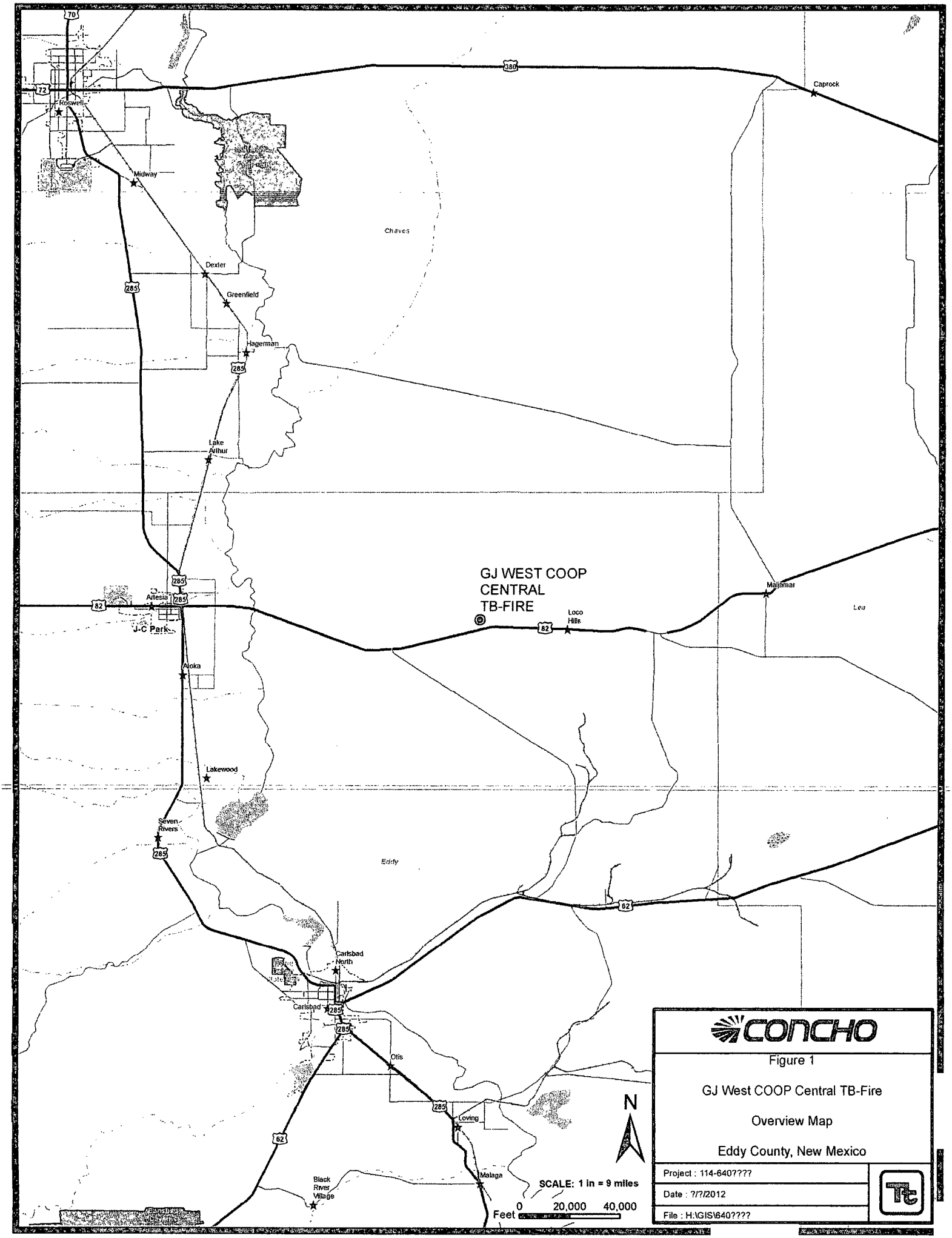
Based on the remedial activities performed, COG request closure of the site. A copy of the C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Senior Project Manager

cc: Pat Ellis – COG

FIGURES



CONCHO

Figure 1

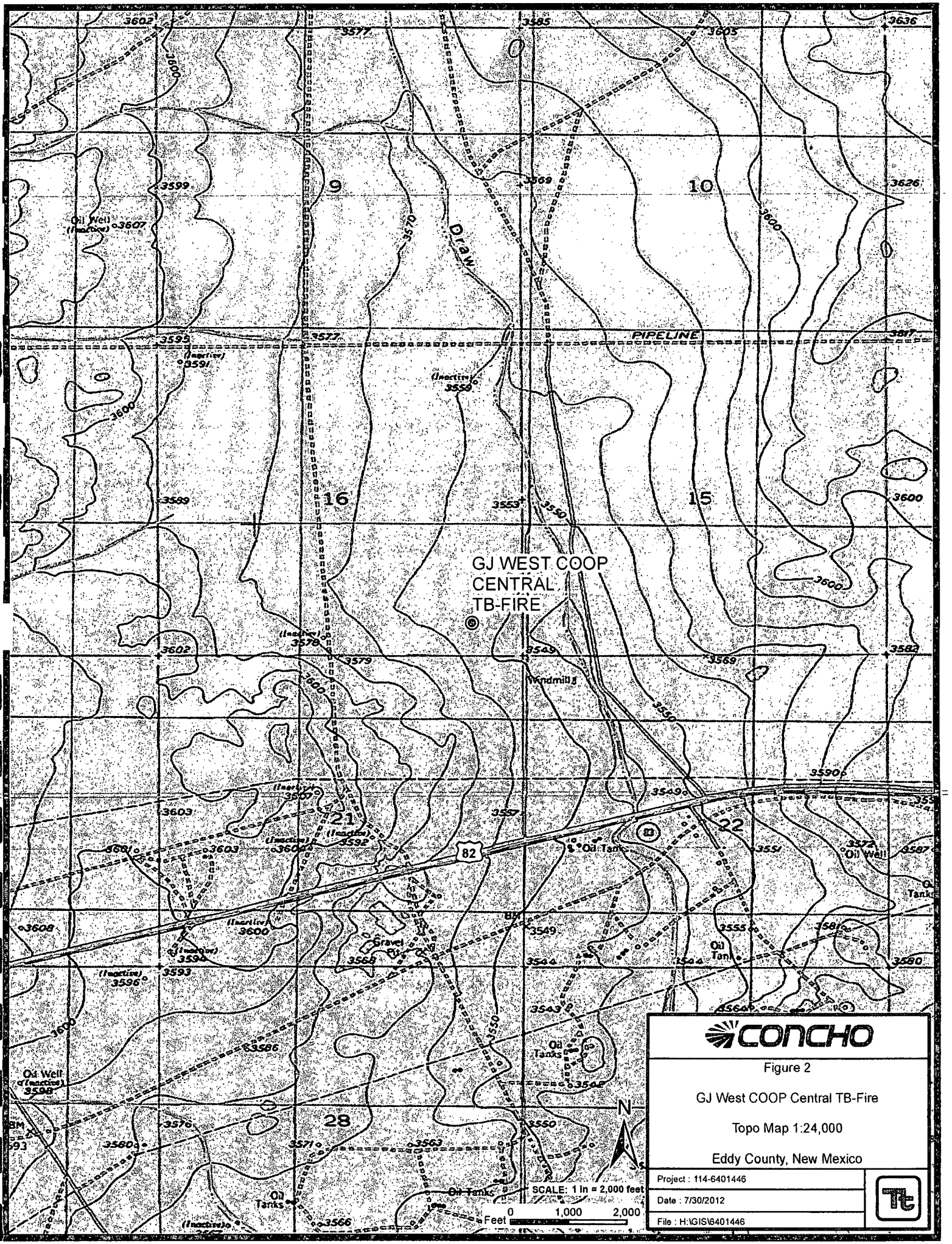
GJ West COOP Central TB-Fire

Overview Map

Eddy County, New Mexico

Project : 114-640????	
Date : ?/?/2012	
File : H:\GIS\640????	

Drawn By: Isabel Marmolejo



CONCHO

Figure 2

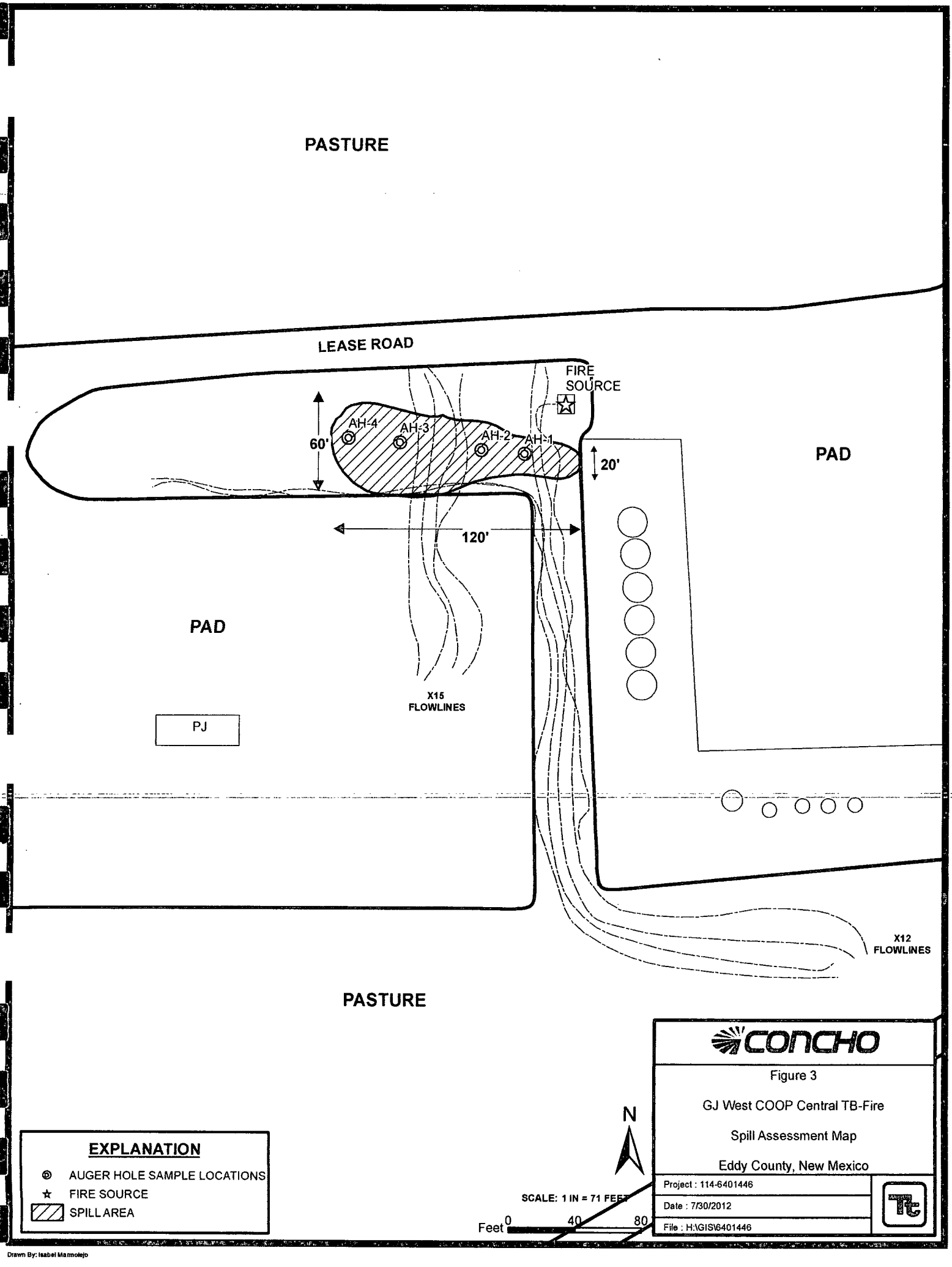
GJ West COOP Central TB-Fire

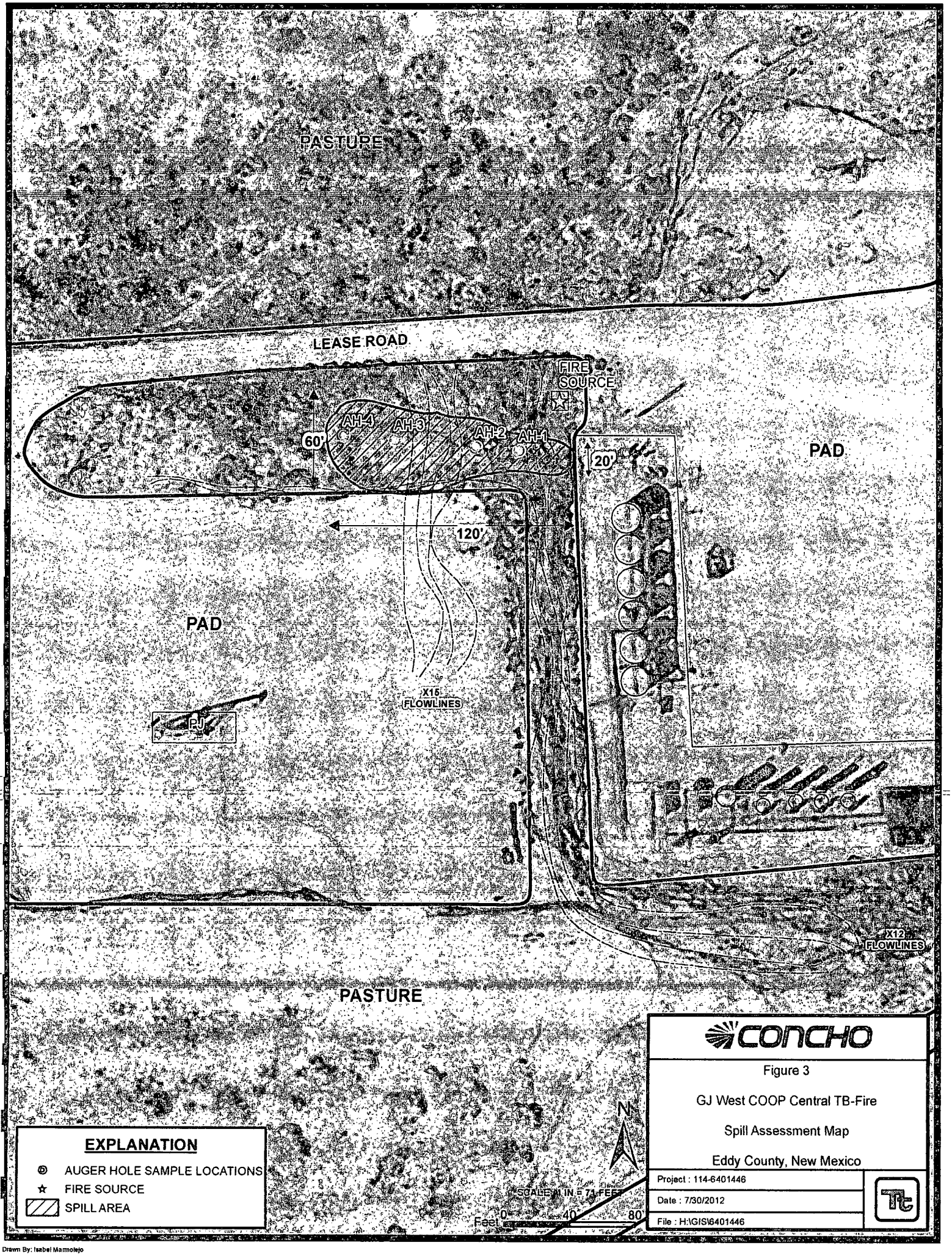
Topo Map 1:24,000

Eddy County, New Mexico

Project : 114-6401446	
Date : 7/30/2012	
File : H:\GIS\6401446	

Drawn By: Isabel Marmolejo


PASTURE
LEASE ROAD
FIRE SOURCE
AH-4
AH-3
AH-2
AH-1
60'
20'
PAD
120'
PAD
X15 FLOWLINES
PJ
X12 FLOWLINES
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
FIRE SOURCE
SPILL AREA
N
SCALE: 1 IN = 71 FEET
Feet 0 40 80
CONCHO
Figure 3
GJ West COOP Central TB-Fire
Spill Assessment Map
Eddy County, New Mexico
Project : 114-6401446
Date : 7/30/2012
File : H:\GIS\6401446
Drawn By: Isabel Marmolejo



CONCHO

Figure 3

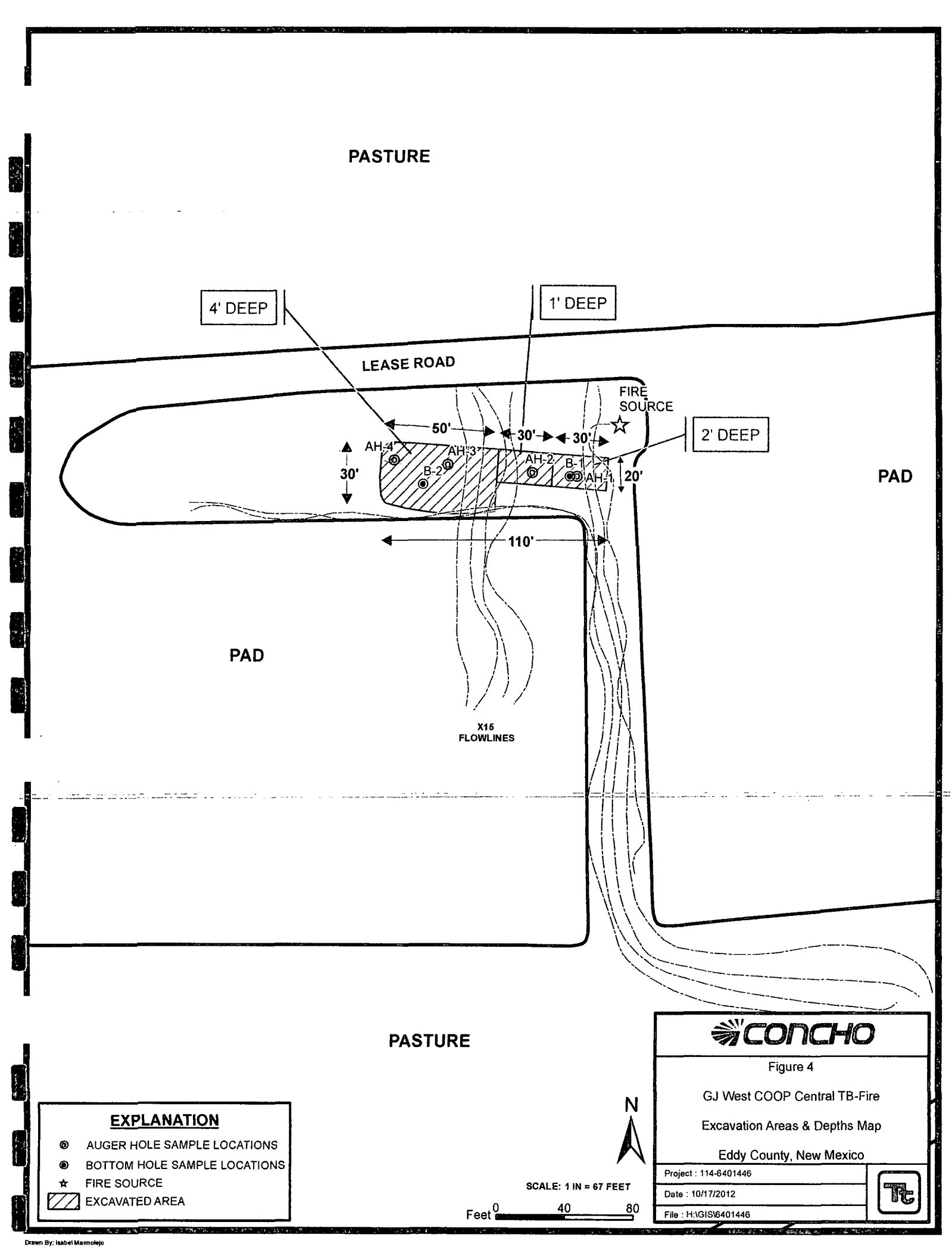
GJ West COOP Central TB-Fire

Spill Assessment Map

Eddy County, New Mexico

Project : 114-6401446	
Date : 7/30/2012	
File : H:\GIS\6401446	

Drawn By: Isabel Marmolejo


PASTURE
4' DEEP
1' DEEP
LEASE ROAD
FIRE SOURCE
2' DEEP
50'
30'
30'
AH-4
AH-3
AH-2
B-1
AH-1
B-2
30'
20'
PAD
110'
PAD
X15 FLOWLINES
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
BOTTOM HOLE SAMPLE LOCATIONS
FIRE SOURCE
EXCAVATED AREA
N
SCALE: 1 IN = 67 FEET
Feet 0 40 80
CONCHO
Figure 4
GJ West COOP Central TB-Fire
Excavation Areas & Depths Map
Eddy County, New Mexico
Project : 114-6401446
Date : 10/17/2012
File : H:\GIS\6401446
Drawn By: Isabel Marmolejo

TABLES

Table 1
COG Operating LLC.
GJ West COOP Central 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	7/3/2012	0-1		X	556.0	1,240	1,796	4.67	31.9	20.2	41.9	98.7	11,100
	"	1-1.5		X	-	-	-	1.76	38.3	25.8	42.4	108	8,430
	"	2-2.5		X	-	-	-	<0.0200	<0.0200	0.0246	0.0547	0.0793	5,120
	"	3-3.5	X		-	-	-	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	110
	"	4-4.5	X		-	-	-	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,200
	"	5-5.5	X		-	-	-	-	-	-	-	-	1,530
	"	6-6.5	X		-	-	-	-	-	-	-	-	505
	"	7-7.5	X		-	-	-	-	-	-	-	-	235
	"	8-8.5	X		-	-	-	-	-	-	-	-	280
	"	9-9.5	X		-	-	-	-	-	-	-	-	2,140
AH-1	09/06/2012	2' Bottom	X		<4.00	<50.0	<50.0	-	-	-	-	-	-
AH-2	7/3/2012	0-1		X	15.1	370	385	<0.0200	<0.0200	0.0511	0.131	0.182	6,830
	"	1-1.5	X		-	-	-	-	-	-	-	-	220
	"	2-2.5	X		-	-	-	-	-	-	-	-	35.0
	"	3-3.5	X		-	-	-	-	-	-	-	-	<20.0
AH-3	7/3/2012	0-1		X	729	941	1,670	0.838	16.5	15.9	32.3	65.5	14,600
	"	1-1.5		X	-	-	-	0.280	14.9	13.6	27.4	56.2	11,900
	"	2-2.5		X	-	-	-	<0.0200	<0.0200	0.182	0.509	0.691	9,200
	"	3-3.5		X	-	-	-	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	10,400
	"	4-4.5		X	-	-	-	-	-	-	-	-	6,250
	"	5-5.5	X		-	-	-	-	-	-	-	-	1,720
	"	6-6.5	X		-	-	-	-	-	-	-	-	29.8
AH-3	9/6/2012	4' Bottom	X		<4.00	<50.0	<50.0	-	-	-	-	-	-

Table 1
COG Operating LLC.
GJ West COOP Central 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-4	7/3/2012	0-1		X	560	393	953	<0.100	6.48	8.05	16.4	30.9	13,400
	"	1-1.5		X	-	-	-	-	-	-	-	-	10,300
	"	2-2.5		X	-	-	-	-	-	-	-	-	7,260
	"	3-3.5		X	-	-	-	-	-	-	-	-	4,320
	"	4-4.5		X	-	-	-	-	-	-	-	-	3,800
	"	5-5.5	X		-	-	-	-	-	-	-	-	1,490
	"	6-6.5	X		-	-	-	-	-	-	-	-	199
	"	7-7.5	X		-	-	-	-	-	-	-	-	54.8
	"	8-8.5	X		-	-	-	-	-	-	-	-	29.9

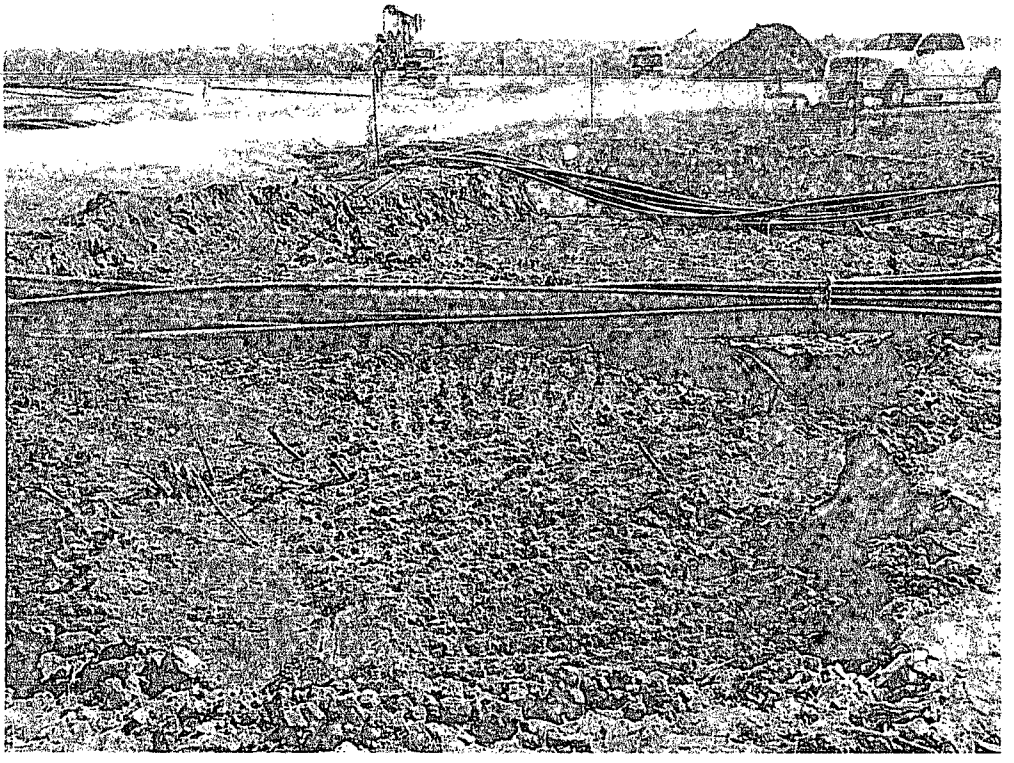
(--) Not Analyzed

Excavation Depths

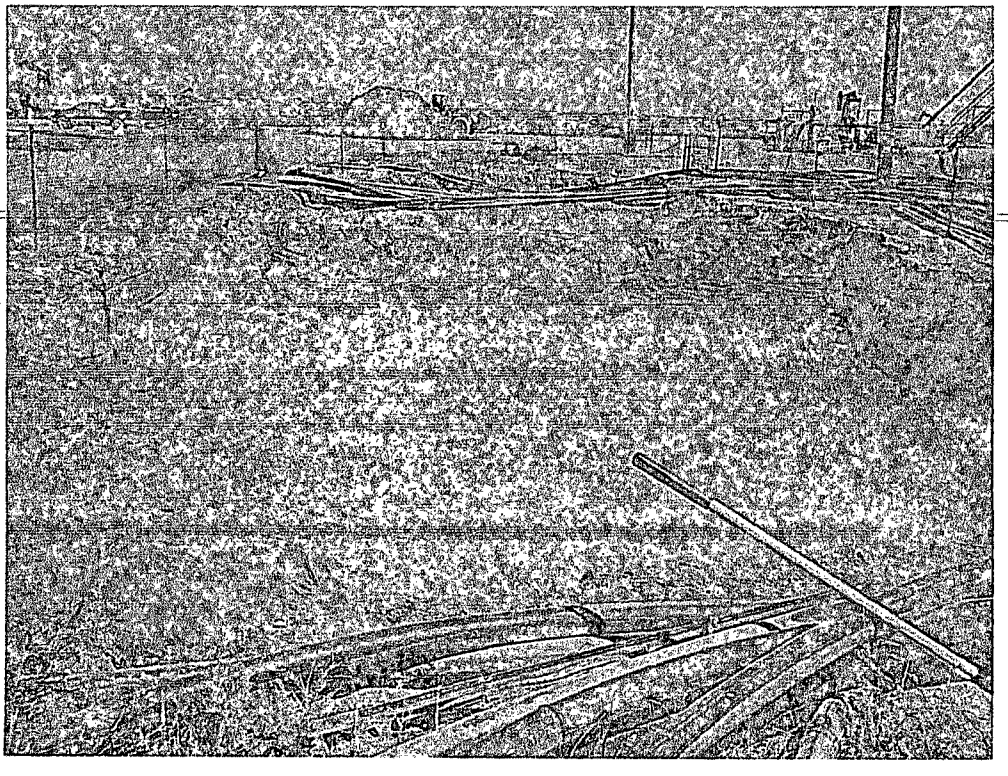
PHOTOGRAPHS

COG Operating LLC
GJ West Coop Central Tank Battery
Eddy County, New Mexico

TETRA TECH



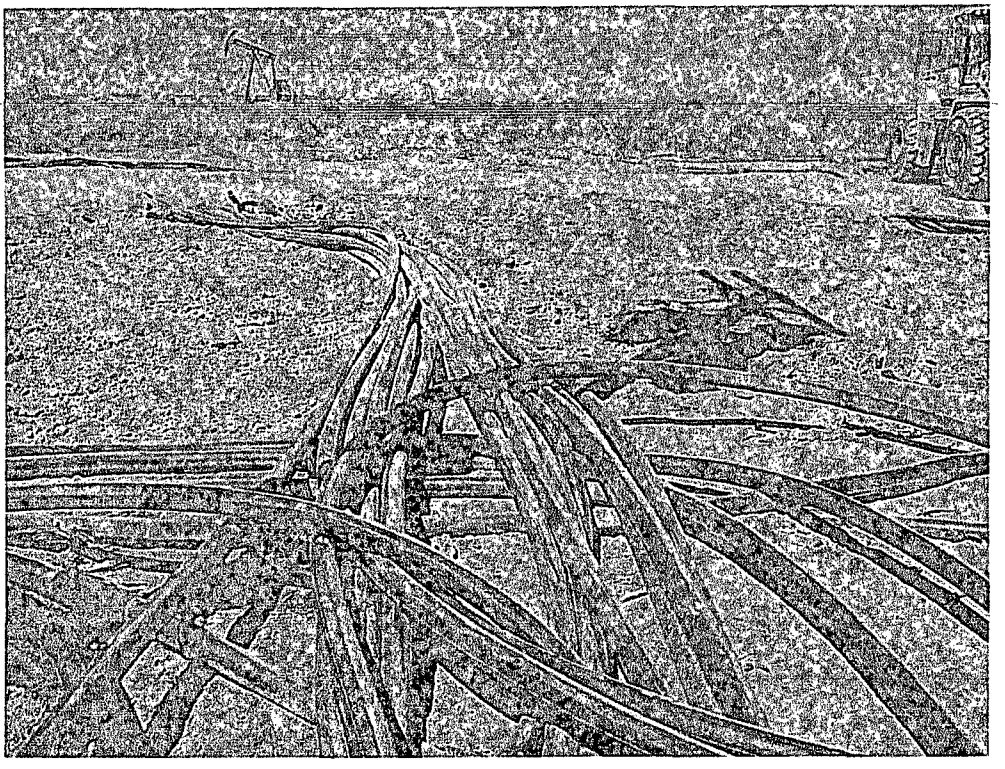
View Northeast – Excavations of AH-1 and AH-2.



View east across – Excavation of AH-4.

COG Operating LLC
GJ West Coop Central Tank Battery
Eddy County, New Mexico

TETRA TECH



View North – Backfill

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 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	GJ West Coop Unit Central Tank Battery	Facility Type	Tank Battery

Surface Owner State	Mineral Owner	Lease No. (API#) 30-015-36308 Closest well location

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	16	17S	29E					Eddy

Latitude 32 49.737 **Longitude** 104 04.433

NATURE OF RELEASE

Type of Release Produced fluids	Volume of Release 10bbls oil 20bbls produced water	Volume Recovered 0bbls (fluid consumed in fire)
Source of Release Flowlines	Date and Hour of Occurrence 06/09/2012	Date and Hour of Discovery 06/09/2012 1:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher-OCD	
By Whom? Michelle Mullins	Date and Hour 06/10/2012 10:48 p.m.	
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 power line failure caused a fire to ignite around our GJ West Coop Unit Central Tank Battery. The fire burned several flowlines in the area which in turn caused produced fluid s to be released onto the ground. The power lines and affected flowlines are in the process of being repaired and/or replaced.

Describe Area Affected and Cleanup Action Taken.*

Initially an estimated 30bbls were released from the damaged flowlines. We were unable to recover any fluid; most of the released fluid was consumed by the fire. The burned area has been scraped and Micro-Blaze has been applied to any oil stained areas. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan for approval prior to any signification 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: 06/21/2012 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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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

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NMOCD ARTESIA

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, Texas 79701**	Telephone No.	**(432) 230-0077**
Facility Name	**GJ West Coop Unit Central Tank Battery**	Facility Type	**Tank Battery**

Surface Owner: State	Mineral Owner	Lease No. (API#) 30-015-36308 Closest Well Location

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	16	17S	29E					Eddy

Latitude N 32 49.737° **Longitude** W 104 04.433°

NATURE OF RELEASE

Type of Release: Produced Fluids	Volume of Release 10 bbls oil 20 bbls produced water	Volume Recovered 0 bbls oil (Fluids consumed in fire)
Source of Release: Flow lines	Date and Hour of Occurrence 06/09/2012	Date and Hour of Discovery 06/09/2012 1:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher -OCD	
By Whom? Michelle Mullins	Date and Hour 06/10/2012 10:48 p.m.	
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 Power line failure caused a fire to ignite at the GJ Coop Unit Central Tank Battery. The fire burned several flow lines in the area which in turn caused produced fluids to be released on the ground. The power lines and affected flow lines were repaired.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected the site and collected samples to define the spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. The site was then brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report and submitted it to NMOCD for review.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 10-18-12 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
COG - GJ West Coop Unit Central Tank Battery
Eddy County, New Mexico

16 South 28 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 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	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

17 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 **79**	23	24
30	29	28	27	26	25
31	32	33	34 **53**	35	36

17 South 29 East

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

17 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 28 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 ***65***	36

18 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	23	24
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

New Mexico State Engineers Well Reports
USGS Well Reports
NMOCD - Groundwater Data
Site Location - GJ West Coop Unit Central Tank Battery

APPENDIX C

Summary Report

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

Report Date: July 20, 2012

Work Order: 12070518

Project Location: Eddy Co., NM
Project Name: COG/GJ West COOP Central TB
Project Number: 114-6401446

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
302735	AH-1 0-1'	soil	2012-07-03	00:00	2012-07-05
302736	AH-1 1-1.5'	soil	2012-07-03	00:00	2012-07-05
302737	AH-1 2-2.5'	soil	2012-07-03	00:00	2012-07-05
302738	AH-1 3-3.5'	soil	2012-07-03	00:00	2012-07-05
302739	AH-1 4-4.5'	soil	2012-07-03	00:00	2012-07-05
302740	AH-1 5-5.5'	soil	2012-07-03	00:00	2012-07-05
302741	AH-1 6-6.5'	soil	2012-07-03	00:00	2012-07-05
302742	AH-1 7-7.5'	soil	2012-07-03	00:00	2012-07-05
302743	AH-1 8-8.5'	soil	2012-07-03	00:00	2012-07-05
302744	AH-1 9-9.5'	soil	2012-07-03	00:00	2012-07-05
302745	AH-2 0-1'	soil	2012-07-03	00:00	2012-07-05
302746	AH-2 1-1.5'	soil	2012-07-03	00:00	2012-07-05
302747	AH-2 2-2.5'	soil	2012-07-03	00:00	2012-07-05
302748	AH-2 3-3.5'	soil	2012-07-03	00:00	2012-07-05
302749	AH-3 0-1'	soil	2012-07-03	00:00	2012-07-05
302750	AH-3 1-1.5'	soil	2012-07-03	00:00	2012-07-05
302751	AH-3 2-2.5'	soil	2012-07-03	00:00	2012-07-05
302752	AH-3 3-3.5'	soil	2012-07-03	00:00	2012-07-05
302753	AH-3 4-4.5'	soil	2012-07-03	00:00	2012-07-05
302754	AH-3 5-5.5'	soil	2012-07-03	00:00	2012-07-05
302755	AH-3 6-6.5'	soil	2012-07-03	00:00	2012-07-05
302757	AH-4 0-1'	soil	2012-07-03	00:00	2012-07-05
302758	AH-4 1-1.5'	soil	2012-07-03	00:00	2012-07-05
302759	AH-4 2-2.5'	soil	2012-07-03	00:00	2012-07-05
302760	AH-4 3-3.5'	soil	2012-07-03	00:00	2012-07-05
302761	AH-4 4-4.5'	soil	2012-07-03	00:00	2012-07-05
302762	AH-4 5-5.5"	soil	2012-07-03	00:00	2012-07-05
302763	AH-4 6-6.5'	soil	2012-07-03	00:00	2012-07-05
302764	AH-4 7-7.5'	soil	2012-07-03	00:00	2012-07-05
302765	AH-4 8-8.5'	soil	2012-07-03	00:00	2012-07-05

Sample - Field Code	BTEX Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
302735 - AH-1 0-1'	**4.67**	**31.9**	**20.2**	**41.9**	**1240** Qs	**556** Qs
302736 - AH-1 1-1.5'	**1.76**	**38.3** Qs	**25.8** Qs	**42.4** Qs		
302737 - AH-1 2-2.5'	<0.0200 H	<0.0200	**0.0246**	**0.0547**		
302738 - AH-1 3-3.5'	<0.0200 H	<0.0200	<0.0200	<0.0200		
302739 - AH-1 4-4.5'	<0.0200 H	<0.0200	<0.0200	<0.0200		
302745 - AH-2 0-1'	<0.0200	<0.0200	**0.0511**	**0.131**	**370** Qs	**15.1** Qs
302749 - AH-3 0-1'	**0.838**	**16.5**	**15.9**	**32.3**	**941** Qs	**729** Qs
302750 - AH-3 1-1.5'	**0.280**	**14.9** Qs	**13.6** Qs	**27.4** Qs		
302751 - AH-3 2-2.5'	<0.0200 H	<0.0200	**0.182**	**0.509**		
302752 - AH-3 3-3.5'	<0.0200 H	<0.0200	<0.0200	<0.0200		
302757 - AH-4 0-1'	<0.100 [1]	**6.48**	**8.05**	**16.4**	**393** Qs	**560** Je,Qs

Sample: 302735 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**11100**	mg/Kg	4

Sample: 302736 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**8430**	mg/Kg	4

Sample: 302737 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**5120**	mg/Kg	4

Sample: 302738 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**110**	mg/Kg	4

Sample: 302739 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**1200**	mg/Kg	4

Sample: 302740 - AH-1 5-5.5'

[1] Dilution due to excessive hydrocarbons.

Param	Flag	Result	Units	RL
Chloride		**1530**	mg/Kg	4

Sample: 302741 - AH-1 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**505**	mg/Kg	4

Sample: 302742 - AH-1 7-7.5'

Param	Flag	Result	Units	RL
Chloride		**235**	mg/Kg	4

Sample: 302743 - AH-1 8-8.5'

Param	Flag	Result	Units	RL
Chloride		**280**	mg/Kg	4

Sample: 302744 - AH-1 9-9.5'

Param	Flag	Result	Units	RL
Chloride		**2140**	mg/Kg	4

Sample: 302745 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**6830**	mg/Kg	4

Sample: 302746 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**220**	mg/Kg	4

Sample: 302747 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**35.0**	mg/Kg	4

Sample: 302748 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 302749 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**14600**	mg/Kg	4

Sample: 302750 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**11900**	mg/Kg	4

Sample: 302751 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**9200**	mg/Kg	4

Sample: 302752 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**10400**	mg/Kg	4

Sample: 302753 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**6250**	mg/Kg	4

Sample: 302754 - AH-3 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**1720**	mg/Kg	4

Sample: 302755 - AH-3 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**29.8**	mg/Kg	4

Sample: 302757 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**13400**	mg/Kg	4

Sample: 302758 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**10300**	mg/Kg	4

Sample: 302759 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**7260**	mg/Kg	4

Sample: 302760 - AH-4 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**4320**	mg/Kg	4

Sample: 302761 - AH-4 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**3800**	mg/Kg	4

Sample: 302762 - AH-4 5-5.5"

Param	Flag	Result	Units	RL
Chloride		**1490**	mg/Kg	4

Sample: 302763 - AH-4 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**199**	mg/Kg	4

Sample: 302764 - AH-4 7-7.5'

Param	Flag	Result	Units	RL
Chloride		**54.8**	mg/Kg	4

Sample: 302765 - AH-4 8-8.5'

Param	Flag	Result	Units	RL
Chloride		**29.9**	mg/Kg	4

TRACEANALYSIS, INC.

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(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
(Corrected Report)

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

Report Date: July 20, 2012

Work Order: 12070518

Project Location: Eddy Co., NM
Project Name: COG/GJ West COOP Central TB
Project Number: 114-6401446

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
302735	AH-1 0-1'	soil	2012-07-03	00:00	2012-07-05
302736	AH-1 1-1.5'	soil	2012-07-03	00:00	2012-07-05
302737	AH-1 2-2.5'	soil	2012-07-03	00:00	2012-07-05
302738	AH-1 3-3.5'	soil	2012-07-03	00:00	2012-07-05
302739	AH-1 4-4.5'	soil	2012-07-03	00:00	2012-07-05
302740	AH-1 5-5.5'	soil	2012-07-03	00:00	2012-07-05
302741	AH-1 6-6.5'	soil	2012-07-03	00:00	2012-07-05
302742	AH-1 7-7.5'	soil	2012-07-03	00:00	2012-07-05
302743	AH-1 8-8.5'	soil	2012-07-03	00:00	2012-07-05
302744	AH-1 9-9.5'	soil	2012-07-03	00:00	2012-07-05
302745	AH-2 0-1'	soil	2012-07-03	00:00	2012-07-05
302746	AH-2 1-1.5'	soil	2012-07-03	00:00	2012-07-05
302747	AH-2 2-2.5'	soil	2012-07-03	00:00	2012-07-05
302748	AH-2 3-3.5'	soil	2012-07-03	00:00	2012-07-05
302749	AH-3 0-1'	soil	2012-07-03	00:00	2012-07-05
302750	AH-3 1-1.5'	soil	2012-07-03	00:00	2012-07-05

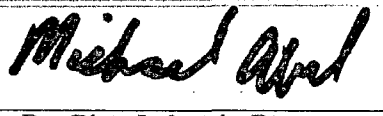
Sample	Description	Matrix	Date Taken	Time Taken	Date Received
302751	AH-3 2-2.5'	soil	2012-07-03	00:00	2012-07-05
302752	AH-3 3-3.5'	soil	2012-07-03	00:00	2012-07-05
302753	AH-3 4-4.5'	soil	2012-07-03	00:00	2012-07-05
302754	AH-3 5-5.5'	soil	2012-07-03	00:00	2012-07-05
302755	AH-3 6-6.5'	soil	2012-07-03	00:00	2012-07-05
302757	AH-4 0-1'	soil	2012-07-03	00:00	2012-07-05
302758	AH-4 1-1.5'	soil	2012-07-03	00:00	2012-07-05
302759	AH-4 2-2.5'	soil	2012-07-03	00:00	2012-07-05
302760	AH-4 3-3.5'	soil	2012-07-03	00:00	2012-07-05
302761	AH-4 4-4.5'	soil	2012-07-03	00:00	2012-07-05
302762	AH-4 5-5.5"	soil	2012-07-03	00:00	2012-07-05
302763	AH-4 6-6.5'	soil	2012-07-03	00:00	2012-07-05
302764	AH-4 7-7.5'	soil	2012-07-03	00:00	2012-07-05
302765	AH-4 8-8.5'	soil	2012-07-03	00:00	2012-07-05

Report Corrections (Work Order 12070518)

- 7/18/12: Removed 48-hour flag from BTEX.

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 44 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/GJ West COOP Central TB were received by TraceAnalysis, Inc. on 2012-07-05 and assigned to work order 12070518. Samples for work order 12070518 were received intact at a temperature of 4.0 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	78843	2012-07-11 at 15:36	92978	2012-07-11 at 15:36
BTEX	S 8021B	78932	2012-07-16 at 08:30	93092	2012-07-16 at 08:30
BTEX	S 8021B	78995	2012-07-18 at 09:28	93169	2012-07-18 at 09:28
Chloride (Titration)	SM 4500-Cl B	78690	2012-07-06 at 08:44	92800	2012-07-06 at 14:52
Chloride (Titration)	SM 4500-Cl B	78690	2012-07-06 at 08:44	92801	2012-07-06 at 14:53
Chloride (Titration)	SM 4500-Cl B	78690	2012-07-06 at 08:44	92802	2012-07-06 at 14:54
Chloride (Titration)	SM 4500-Cl B	78690	2012-07-06 at 08:44	92803	2012-07-06 at 14:55
TPH DRO - NEW	S 8015 D	78748	2012-07-09 at 09:00	92862	2012-07-09 at 11:00
TPH GRO	S 8015 D	78843	2012-07-11 at 15:36	92979	2012-07-11 at 15:36

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 12070518 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: 302735 - AH-1 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	92978	Date Analyzed:	2012-07-11	Analyzed By:	ZLM
Prep Batch:	78843	Sample Preparation:	2012-07-11	Prepared By:	ZLM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**4.67**	mg/Kg	10	0.0200
Toluene		1	**31.9**	mg/Kg	10	0.0200
Ethylbenzene		1	**20.2**	mg/Kg	10	0.0200
Xylene		1	**41.9**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.95	mg/Kg	10	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	7.00	mg/Kg	10	2.00	350	70 - 130

Sample: 302735 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92800	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**11100**	mg/Kg	10	4.00

Sample: 302735 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	92862	Date Analyzed:	2012-07-09	Analyzed By:	CW
Prep Batch:	78748	Sample Preparation:	2012-07-09	Prepared By:	CW

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qs	2	**1240**	mg/Kg	5	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		218	mg/Kg	5	100	218	49.3 - 157.5

Sample: 302735 - AH-1 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	92979	Date Analyzed:	2012-07-11	Analyzed By:	ZLM
Prep Batch:	78843	Sample Preparation:	2012-07-11	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**556**	mg/Kg	10	2.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		1.08	mg/Kg	10	2.00	54	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		12.9	mg/Kg	10	2.00	645	70 - 130

Sample: 302736 - AH-1 1-1.5'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93092	Date Analyzed:	2012-07-16	Analyzed By:	ZLM
Prep Batch:	78932	Sample Preparation:	2012-07-16	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**1.76**	mg/Kg	10	0.0200
Toluene	Qs	1	**38.3**	mg/Kg	10	0.0200
Ethylbenzene	Qs	1	**25.8**	mg/Kg	10	0.0200
Xylene	Qs	1	**42.4**	mg/Kg	10	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				17.2	mg/Kg	10	20.0	86	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		28.4	mg/Kg	10	20.0	142	70 - 130

Sample: 302736 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92800	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**8430**	mg/Kg	10	4.00

Sample: 302737 - AH-1 2-2.5'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93169	Date Analyzed:	2012-07-18	Analyzed By:	ZLM
Prep Batch:	78995	Sample Preparation:	2012-07-18	Prepared By:	ZLM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	H,U	1	<0.0200	mg/Kg	1	0.0200
Toluene		1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	B	1	**0.0246**	mg/Kg	1	0.0200
Xylene	B	1	**0.0547**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.95	mg/Kg	1	2.00	98	70 - 130

Sample: 302737 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92800	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**5120**	mg/Kg	10	4.00

Sample: 302738 - AH-1 3-3.5'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93169	Date Analyzed:	2012-07-18	Analyzed By:	ZLM
Prep Batch:	78995	Sample Preparation:	2012-07-18	Prepared By:	ZLM

Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	H,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)			1.88	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.87	mg/Kg	1	2.00	94	70 - 130

Sample: 302738 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92800	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			**110**	mg/Kg	5	4.00

Sample: 302739 - AH-1 4-4.5'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93169	Date Analyzed:	2012-07-18	Analyzed By:	ZLM
Prep Batch:	78995	Sample Preparation:	2012-07-18	Prepared By:	ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			1.86	mg/Kg	1	2.00	93	70 - 130

Sample: 302739 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92800	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1200**	mg/Kg	5	4.00

Sample: 302740 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92800	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1530**	mg/Kg	10	4.00

Sample: 302741 - AH-1 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92800	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**505**	mg/Kg	5	4.00

Sample: 302742 - AH-1 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92800	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**235**	mg/Kg	5	4.00

Sample: 302743 - AH-1 8-8.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92801	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**280**	mg/Kg	5	4.00

Sample: 302744 - AH-1 9-9.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92801	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2140**	mg/Kg	5	4.00

Sample: 302745 - AH-2 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	92978	Date Analyzed:	2012-07-11	Analyzed By:	ZLM
Prep Batch:	78843	Sample Preparation:	2012-07-11	Prepared By:	ZLM

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene		1	<0.0200		mg/Kg	1	0.0200
Toluene	U	1	<0.0200		mg/Kg	1	0.0200
Ethylbenzene		1	**0.0511**		mg/Kg	1	0.0200
Xylene		1	**0.131**		mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.31	mg/Kg	1	2.00	116	70 - 130
4-Bromofluorobenzene (4-BFB)			2.48	mg/Kg	1	2.00	124	70 - 130

Sample: 302745 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92801	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**6830**		mg/Kg	10	4.00

Sample: 302745 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	92862	Date Analyzed:	2012-07-09	Analyzed By:	CW
Prep Batch:	78748	Sample Preparation:	2012-07-09	Prepared By:	CW

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Qs	2	**370**		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			157	mg/Kg	1	100	157	49.3 - 157.5

Sample: 302745 - AH-2 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	92979	Date Analyzed:	2012-07-11	Analyzed By:	ZLM
Prep Batch:	78843	Sample Preparation:	2012-07-11	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**15.1**	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.83	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.16	mg/Kg	1	2.00	158	70 - 130

Sample: 302746 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92801	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**220**	mg/Kg	5	4.00

Sample: 302747 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92801	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**35.0**	mg/Kg	5	4.00

Sample: 302748 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92801	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 302749 - AH-3 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	92978	Date Analyzed:	2012-07-11	Analyzed By:	ZLM
Prep Batch:	78843	Sample Preparation:	2012-07-11	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.838**	mg/Kg	10	0.0200
Toluene		1	**16.5**	mg/Kg	10	0.0200
Ethylbenzene		1	**15.9**	mg/Kg	10	0.0200
Xylene		1	**32.3**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	10	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	7.03	mg/Kg	10	2.00	352	70 - 130

Sample: 302749 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92801	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**14600**	mg/Kg	10	4.00

Sample: 302749 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	92862	Date Analyzed:	2012-07-09	Analyzed By:	CW
Prep Batch:	78748	Sample Preparation:	2012-07-09	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	2	**941**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		178	mg/Kg	1	100	178	49.3 - 157.5

Sample: 302749 - AH-3 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	92979	Date Analyzed:	2012-07-11	Analyzed By:	ZLM
Prep Batch:	78843	Sample Preparation:	2012-07-11	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**729**	mg/Kg	10	2.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		0.916	mg/Kg	10	2.00	46	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		10.8	mg/Kg	10	2.00	540	70 - 130

Sample: 302750 - AH-3 1-1.5'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93092	Date Analyzed:	2012-07-16	Analyzed By:	ZLM
Prep Batch:	78932	Sample Preparation:	2012-07-16	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.280**	mg/Kg	10	0.0200
Toluene	Qs	1	**14.9**	mg/Kg	10	0.0200
Ethylbenzene	Qs	1	**13.6**	mg/Kg	10	0.0200
Xylene	Qs	1	**27.4**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			17.1	mg/Kg	10	20.0	86	70 - 130
4-Bromofluorobenzene (4-BFB)			25.5	mg/Kg	10	20.0	128	70 - 130

Sample: 302750 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92801	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**11900**	mg/Kg	10	4.00

Sample: 302751 - AH-3 2-2.5'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93169	Date Analyzed:	2012-07-18	Analyzed By:	ZLM
Prep Batch:	78995	Sample Preparation:	2012-07-18	Prepared By:	ZLM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	H,U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene		1	**0.182**	mg/Kg	1	0.0200
Xylene		1	**0.509**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.90	mg/Kg	1	2.00	95	70 - 130
4-Bromofluorobenzene (4-BFB)			2.18	mg/Kg	1	2.00	109	70 - 130

Sample: 302751 - AH-3 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92801	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**9200**	mg/Kg	10	4.00

Sample: 302752 - AH-3 3-3.5'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93169	Date Analyzed:	2012-07-18	Analyzed By:	ZLM
Prep Batch:	78995	Sample Preparation:	2012-07-18	Prepared By:	ZLM

Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	B,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	JB	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.89	mg/Kg	1	2.00	94	70 - 130

Sample: 302752 - AH-3 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92801	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			**10400**	mg/Kg	10	4.00

Sample: 302753 - AH-3 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92802	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			**6250**	mg/Kg	10	4.00

Sample: 302754 - AH-3 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92802	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**1720**		mg/Kg	10	4.00

Sample: 302755 - AH-3 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92802	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**29.8**		mg/Kg	5	4.00

Sample: 302757 - AH-4 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	92978	Date Analyzed:	2012-07-11	Analyzed By:	ZLM
Prep Batch:	78843	Sample Preparation:	2012-07-11	Prepared By:	ZLM

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene	1	1	<0.100		mg/Kg	5	0.0200
Toluene		1	**6.48**		mg/Kg	5	0.0200
Ethylbenzene		1	**8.05**		mg/Kg	5	0.0200
Xylene		1	**16.4**		mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	5	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.69	mg/Kg	5	2.00	134	70 - 130

Sample: 302757 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92802	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**13400**	mg/Kg	10	4.00

Sample: 302757 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	92862	Date Analyzed:	2012-07-09	Analyzed By:	CW
Prep Batch:	78748	Sample Preparation:	2012-07-09	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	2	**393**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			151	mg/Kg	1	100	151	49.3 - 157.5

Sample: 302757 - AH-4 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	92979	Date Analyzed:	2012-07-11	Analyzed By:	ZLM
Prep Batch:	78843	Sample Preparation:	2012-07-11	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Je,Qs	1	**560**	mg/Kg	5	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.44	mg/Kg	5	2.00	72	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	27.9	mg/Kg	5	2.00	1395	70 - 130

Sample: 302758 - AH-4 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92802	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**10300**	mg/Kg	10	4.00

Sample: 302759 - AH-4 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92802	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**7260**	mg/Kg	10	4.00

Sample: 302760 - AH-4 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92802	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**4320**	mg/Kg	10	4.00

Sample: 302761 - AH-4 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92802	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3800**	mg/Kg	10	4.00

Sample: 302762 - AH-4 5-5.5"

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92802	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1490**	mg/Kg	10	4.00

Sample: 302763 - AH-4 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92802	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**199**	mg/Kg	5	4.00

Sample: 302764 - AH-4 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92803	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**54.8**	mg/Kg	5	4.00

Sample: 302765 - AH-4 8-8.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92803	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	Sample Preparation:	2012-07-06	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**29.9**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 92800

QC Batch:	92800	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	QC Preparation:	2012-07-06	Prepared By:	AR

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

Method Blank (1) QC Batch: 92801

QC Batch:	92801	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	QC Preparation:	2012-07-06	Prepared By:	AR

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

Method Blank (1) QC Batch: 92802

QC Batch:	92802	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	QC Preparation:	2012-07-06	Prepared By:	AR

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

Method Blank (1) QC Batch: 92803

QC Batch:	92803	Date Analyzed:	2012-07-06	Analyzed By:	AR
Prep Batch:	78690	QC Preparation:	2012-07-06	Prepared By:	AR

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

Method Blank (1) QC Batch: 92862

QC Batch: 92862 Date Analyzed: 2012-07-09 Analyzed By: CW
Prep Batch: 78748 QC Preparation: 2012-07-09 Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		2	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			130	mg/Kg	1	100	130	52 - 160.8

Method Blank (1) QC Batch: 92978

QC Batch: 92978 Date Analyzed: 2012-07-11 Analyzed By: ZLM
Prep Batch: 78843 QC Preparation: 2012-07-11 Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00365	mg/Kg	0.02
Toluene		1	<0.00816	mg/Kg	0.02
Ethylbenzene		1	<0.00560	mg/Kg	0.02
Xylene		1	0.0126	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.96	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Method Blank (1) QC Batch: 92979

QC Batch: 92979 Date Analyzed: 2012-07-11 Analyzed By: ZLM
Prep Batch: 78843 QC Preparation: 2012-07-11 Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	0.540	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.65	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.94	mg/Kg	1	2.00	97	70 - 130

Method Blank (1) QC Batch: 93092

QC Batch: 93092 | Date Analyzed: 2012-07-16 | Analyzed By: ZLM
Prep Batch: 78932 | QC Preparation: 2012-07-16 | Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00365	mg/Kg	0.02
Toluene		1	<0.00816	mg/Kg	0.02
Ethylbenzene		1	0.0119	mg/Kg	0.02
Xylene		1	0.0420	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			1.89	mg/Kg	1	2.00	94	70 - 130

Method Blank (1) QC Batch: 93169

QC Batch: 93169 | Date Analyzed: 2012-07-18 | Analyzed By: ZLM
Prep Batch: 78995 | QC Preparation: 2012-07-18 | Prepared By: ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00365	mg/Kg	0.02
Toluene		1	<0.00816	mg/Kg	0.02
Ethylbenzene		1	0.0113	mg/Kg	0.02
Xylene		1	0.0399	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.80	mg/Kg	1	2.00	90	70 - 130

continued ...

method blank continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)			1.82	mg/Kg	1	2.00	91	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 92800 | Date Analyzed: 2012-07-06 | Analyzed By: AR
Prep Batch: 78690 | QC Preparation: 2012-07-06 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	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			2720	mg/Kg	1	2500	<3.85	109	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: 92801 | Date Analyzed: 2012-07-06 | Analyzed By: AR
Prep Batch: 78690 | QC Preparation: 2012-07-06 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2640	mg/Kg	1	2500	<3.85	106	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			2770	mg/Kg	1	2500	<3.85	111	85 - 115	5	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: 92802 | Date Analyzed: 2012-07-06 | Analyzed By: AR
Prep Batch: 78690 | QC Preparation: 2012-07-06 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	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			2680	mg/Kg	1	2500	<3.85	107	85 - 115	2	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: 92803 | Date Analyzed: 2012-07-06 | Analyzed By: AR
Prep Batch: 78690 | QC Preparation: 2012-07-06 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2580	mg/Kg	1	2500	<3.85	103	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			2690	mg/Kg	1	2500	<3.85	108	85 - 115	4	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: 92862 | Date Analyzed: 2012-07-09 | Analyzed By: CW
Prep Batch: 78748 | QC Preparation: 2012-07-09 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	263	mg/Kg	1	250	<14.5	105	62 - 128.3

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		2	263	mg/Kg	1	250	<14.5	105	62 - 128.3	0	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	129	129	mg/Kg	1	100	129	129	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 92978 Date Analyzed: 2012-07-11 Analyzed By: ZLM
Prep Batch: 78843 QC Preparation: 2012-07-11 Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.06	mg/Kg	1	2.00	<0.00365	103	75.4 - 120
Toluene		1	2.04	mg/Kg	1	2.00	<0.00816	102	74.9 - 120
Ethylbenzene		1	2.06	mg/Kg	1	2.00	<0.00560	103	78.1 - 120
Xylene		1	6.19	mg/Kg	1	6.00	0.0126	103	77.3 - 120

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	2.07	mg/Kg	1	2.00	<0.00365	104	75.4 - 120	0	20
Toluene		1	2.07	mg/Kg	1	2.00	<0.00816	104	74.9 - 120	1	20
Ethylbenzene		1	2.09	mg/Kg	1	2.00	<0.00560	104	78.1 - 120	1	20
Xylene		1	6.27	mg/Kg	1	6.00	0.0126	104	77.3 - 120	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
Trifluorotoluene (TFT)	2.01	2.04	mg/Kg	1	2.00	100	102	70 - 130
4-Bromofluorobenzene (4-BFB)	2.06	2.09	mg/Kg	1	2.00	103	104	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 92979 Date Analyzed: 2012-07-11 Analyzed By: ZLM
Prep Batch: 78843 QC Preparation: 2012-07-11 Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.7	mg/Kg	1	20.0	0.54	84	68.9 - 120

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	17.9	mg/Kg	1	20.0	0.54	90	68.9 - 120	7	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)	1.68	1.80	mg/Kg	1	2.00	84	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1.95	2.02	mg/Kg	1	2.00	98	101	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93092 Date Analyzed: 2012-07-16 Analyzed By: ZLM
Prep Batch: 78932 QC Preparation: 2012-07-16 Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.05	mg/Kg	1	2.00	<0.00365	102	75.4 - 120
Toluene		1	2.00	mg/Kg	1	2.00	<0.00816	100	74.9 - 120
Ethylbenzene		1	2.03	mg/Kg	1	2.00	0.0119	102	78.1 - 120
Xylene		1	6.27	mg/Kg	1	6.00	0.042	104	77.3 - 120

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	2.00	mg/Kg	1	2.00	<0.00365	100	75.4 - 120	2	20
Toluene		1	1.95	mg/Kg	1	2.00	<0.00816	98	74.9 - 120	2	20
Ethylbenzene		1	1.97	mg/Kg	1	2.00	0.0119	98	78.1 - 120	3	20
Xylene		1	6.10	mg/Kg	1	6.00	0.042	102	77.3 - 120	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)	1.86	1.90	mg/Kg	1	2.00	93	95	70 - 130
4-Bromofluorobenzene (4-BFB)	1.86	1.86	mg/Kg	1	2.00	93	93	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93169 Date Analyzed: 2012-07-18 Analyzed By: ZLM
Prep Batch: 78995 QC Preparation: 2012-07-18 Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.01	mg/Kg	1	2.00	<0.00365	100	75.4 - 120
Toluene		1	2.00	mg/Kg	1	2.00	<0.00816	100	74.9 - 120
Ethylbenzene		1	2.05	mg/Kg	1	2.00	0.0113	102	78.1 - 120
Xylene		1	6.36	mg/Kg	1	6.00	0.0399	106	77.3 - 120

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	2.00	mg/Kg	1	2.00	<0.00365	100	75.4 - 120	0	20
Toluene		1	1.97	mg/Kg	1	2.00	<0.00816	98	74.9 - 120	2	20
Ethylbenzene		1	2.02	mg/Kg	1	2.00	0.0113	101	78.1 - 120	2	20
Xylene		1	6.26	mg/Kg	1	6.00	0.0399	104	77.3 - 120	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)	1.80	1.79	mg/Kg	1	2.00	90	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1.85	1.89	mg/Kg	1	2.00	92	94	70 - 130

Matrix Spike (MS-1) Spiked Sample: 302742

QC Batch: 92800 | Date Analyzed: 2012-07-06 | Analyzed By: AR
Prep Batch: 78690 | QC Preparation: 2012-07-06 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2880	mg/Kg	5	2500	235	106	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			3010	mg/Kg	5	2500	235	111	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: 302752

QC Batch: 92801 | Date Analyzed: 2012-07-06 | Analyzed By: AR
Prep Batch: 78690 | QC Preparation: 2012-07-06 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			12700	mg/Kg	10	2500	10400	92	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			12900	mg/Kg	10	2500	10400	100	79.4 - 120.6	2	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: 302763

QC Batch: 92802 | Date Analyzed: 2012-07-06 | Analyzed By: AR
Prep Batch: 78690 | QC Preparation: 2012-07-06 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2740	mg/Kg	5	2500	199	102	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			2870	mg/Kg	5	2500	199	107	79.4 - 120.6	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: 302773

QC Batch: 92803 | Date Analyzed: 2012-07-06 | Analyzed By: AR
Prep Batch: 78690 | QC Preparation: 2012-07-06 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2770	mg/Kg	5	2500	<19.2	111	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			2860	mg/Kg	5	2500	<19.2	114	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: 302733

QC Batch: 92862 | Date Analyzed: 2012-07-09 | Analyzed By: CW
Prep Batch: 78748 | QC Preparation: 2012-07-09 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	Qs	Qs 2	372	mg/Kg	1	250	221	60	45.5 - 127

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	Qs	Qs 2	375	mg/Kg	1	250	221	62	45.5 - 127	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	137	135	mg/Kg	1	100	137	135	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 302733

QC Batch: 92978 | Date Analyzed: 2012-07-11 | Analyzed By: ZLM
Prep Batch: 78843 | QC Preparation: 2012-07-11 | Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.96	mg/Kg	1	2.00	0.223	87	37.6 - 142
Toluene		1	2.11	mg/Kg	1	2.00	0.259	92	38.6 - 153
Ethylbenzene		1	2.64	mg/Kg	1	2.00	0.41	112	36.7 - 172
Xylene		1	7.81	mg/Kg	1	6.00	0.944	114	36.7 - 173

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	2.04	mg/Kg	1	2.00	0.223	91	37.6 - 142	4	20
Toluene		1	2.18	mg/Kg	1	2.00	0.259	96	38.6 - 153	3	20
Ethylbenzene		1	2.42	mg/Kg	1	2.00	0.41	100	36.7 - 172	9	20
Xylene		1	7.26	mg/Kg	1	6.00	0.944	105	36.7 - 173	7	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	2.29	mg/Kg	1	2	108	114	70 - 130

continued ...

matrix spikes continued ...

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.14	2.52	mg/Kg	1	2	157	126	70 - 130

Matrix Spike (MS-1) Spiked Sample: 302733

QC Batch: 92979 | Date Analyzed: 2012-07-11 | Analyzed By: ZLM
Prep Batch: 78843 | QC Preparation: 2012-07-11 | Prepared By: ZLM

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	1	117	mg/Kg	1	20.0	66.2	254	70 - 130

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	107	mg/Kg	1	20.0	66.2	204	70 - 130	9	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)			1.61	1.23	mg/Kg	1	2	80	62	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.35	2.06	mg/Kg	1	2	168	103	70 - 130

Matrix Spike (MS-1) Spiked Sample: 302750

QC Batch: 93092 | Date Analyzed: 2012-07-16 | Analyzed By: ZLM
Prep Batch: 78932 | QC Preparation: 2012-07-16 | Prepared By: ZLM

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene			1	2.33	mg/Kg	10	2.00	0.28	102	37.6 - 142
Toluene	Qs	Qs	1	9.90	mg/Kg	10	2.00	14.9	-250	38.6 - 153
Ethylbenzene	Qs	Qs	1	11.3	mg/Kg	10	2.00	13.6	-115	36.7 - 172
Xylene	Qs	Qs	1	25.8	mg/Kg	10	6.00	27.4	-25	36.7 - 173

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	2.29	mg/Kg	10	2.00	0.28	100	37.6 - 142	2	20

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Toluene	Qs	Qs	1	10.2	mg/Kg	10	2.00	14.9	-235	38.6 - 153	3	20
Ethylbenzene	Qs	Qs	1	12.1	mg/Kg	10	2.00	13.6	-75	36.7 - 172	7	20
Xylene	Qs	Qs	1	27.4	mg/Kg	10	6.00	27.4	0	36.7 - 173	6	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)	21.0	20.8	mg/Kg	10	20	105	104	70 - 130
4-Bromofluorobenzene (4-BFB)	24.2	24.6	mg/Kg	10	20	121	123	70 - 130

Matrix Spike (MS-1) Spiked Sample: 304016

QC Batch: 93169 | Date Analyzed: 2012-07-18 | Analyzed By: ZLM
Prep Batch: 78995 | QC Preparation: 2012-07-18 | Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.94	mg/Kg	1	2.00	<0.00365	97	37.6 - 142
Toluene		1	2.05	mg/Kg	1	2.00	<0.00816	102	38.6 - 153
Ethylbenzene		1	2.19	mg/Kg	1	2.00	<0.00560	110	36.7 - 172
Xylene		1	6.80	mg/Kg	1	6.00	0.0141	113	36.7 - 173

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	1.73	mg/Kg	1	2.00	<0.00365	86	37.6 - 142	11	20
Toluene		1	1.82	mg/Kg	1	2.00	<0.00816	91	38.6 - 153	12	20
Ethylbenzene		1	1.96	mg/Kg	1	2.00	<0.00560	98	36.7 - 172	11	20
Xylene		1	6.08	mg/Kg	1	6.00	0.0141	101	36.7 - 173	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)	2.00	2.01	mg/Kg	1	2	100	100	70 - 130
4-Bromofluorobenzene (4-BFB)	1.87	1.92	mg/Kg	1	2	94	96	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 92800 | Date Analyzed: 2012-07-06 | 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	99.8	100	85 - 115	2012-07-06

Standard (CCV-2)

QC Batch: 92800 | Date Analyzed: 2012-07-06 | 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	2012-07-06

Standard (CCV-1)

QC Batch: 92801 | Date Analyzed: 2012-07-06 | 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	2012-07-06

Standard (CCV-2)

QC Batch: 92801 | Date Analyzed: 2012-07-06 | 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	99.6	100	85 - 115	2012-07-06

Standard (CCV-1)

QC Batch: 92802 Date Analyzed: 2012-07-06 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	99.7	100	85 - 115	2012-07-06

Standard (CCV-2)

QC Batch: 92802 Date Analyzed: 2012-07-06 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	2012-07-06

Standard (CCV-1)

QC Batch: 92803 Date Analyzed: 2012-07-06 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	2012-07-06

Standard (CCV-2)

QC Batch: 92803 Date Analyzed: 2012-07-06 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	99.4	99	85 - 115	2012-07-06

Standard (CCV-1)

QC Batch: 92862 Date Analyzed: 2012-07-09 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	251	100	80 - 120	2012-07-09

Standard (CCV-2)

QC Batch: 92862 Date Analyzed: 2012-07-09 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	257	103	80 - 120	2012-07-09

Standard (CCV-3)

QC Batch: 92862 Date Analyzed: 2012-07-09 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	243	97	80 - 120	2012-07-09

Standard (CCV-4)

QC Batch: 92862 Date Analyzed: 2012-07-09 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	248	99	80 - 120	2012-07-09

Standard (CCV-1)

QC Batch: 92978 Date Analyzed: 2012-07-11 Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.106	106	80 - 120	2012-07-11
Toluene		1	mg/kg	0.100	0.104	104	80 - 120	2012-07-11
Ethylbenzene		1	mg/kg	0.100	0.106	106	80 - 120	2012-07-11
Xylene		1	mg/kg	0.300	0.316	105	80 - 120	2012-07-11

Standard (CCV-2)

QC Batch: 92978 Date Analyzed: 2012-07-11 Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0979	98	80 - 120	2012-07-11
Toluene		1	mg/kg	0.100	0.0957	96	80 - 120	2012-07-11
Ethylbenzene		1	mg/kg	0.100	0.0965	96	80 - 120	2012-07-11
Xylene		1	mg/kg	0.300	0.292	97	80 - 120	2012-07-11

Standard (CCV-3)

QC Batch: 92978 Date Analyzed: 2012-07-11 Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0963	96	80 - 120	2012-07-11
Toluene		1	mg/kg	0.100	0.0974	97	80 - 120	2012-07-11
Ethylbenzene		1	mg/kg	0.100	0.0968	97	80 - 120	2012-07-11
Xylene		1	mg/kg	0.300	0.287	96	80 - 120	2012-07-11

Standard (CCV-1)

QC Batch: 92979 Date Analyzed: 2012-07-11 Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.889	89	80 - 120	2012-07-11

Standard (CCV-2)

QC Batch: 92979 | Date Analyzed: 2012-07-11 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.09	109	80 - 120	2012-07-11

Standard (CCV-3)

QC Batch: 92979 | Date Analyzed: 2012-07-11 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO	2	1	mg/Kg	2.00	1.61	80	80 - 120	2012-07-11

Standard (CCV-1)

QC Batch: 93092 | Date Analyzed: 2012-07-16 | Analyzed By: ZLM

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	2012-07-16
Toluene		1	mg/kg	0.100	0.101	101	80 - 120	2012-07-16
Ethylbenzene		1	mg/kg	0.100	0.102	102	80 - 120	2012-07-16
Xylene		1	mg/kg	0.300	0.315	105	80 - 120	2012-07-16

Standard (CCV-2)

QC Batch: 93092 | Date Analyzed: 2012-07-16 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.103	103	80 - 120	2012-07-16
Toluene		1	mg/kg	0.100	0.0994	99	80 - 120	2012-07-16
Ethylbenzene		1	mg/kg	0.100	0.101	101	80 - 120	2012-07-16
Xylene		1	mg/kg	0.300	0.318	106	80 - 120	2012-07-16

Standard (CCV-1)

QC Batch: 93169 Date Analyzed: 2012-07-18 Analyzed By: ZLM

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	2012-07-18
Toluene		1	mg/kg	0.100	0.0998	100	80 - 120	2012-07-18
Ethylbenzene		1	mg/kg	0.100	0.104	104	80 - 120	2012-07-18
Xylene		1	mg/kg	0.300	0.323	108	80 - 120	2012-07-18

Standard (CCV-2)

QC Batch: 93169 Date Analyzed: 2012-07-18 Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.103	103	80 - 120	2012-07-18
Toluene		1	mg/kg	0.100	0.101	101	80 - 120	2012-07-18
Ethylbenzene		1	mg/kg	0.100	0.102	102	80 - 120	2012-07-18
Xylene		1	mg/kg	0.300	0.315	105	80 - 120	2012-07-18

Standard (CCV-3)

QC Batch: 93169 Date Analyzed: 2012-07-18 Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0986	99	80 - 120	2012-07-18
Toluene		1	mg/kg	0.100	0.0962	96	80 - 120	2012-07-18
Ethylbenzene		1	mg/kg	0.100	0.101	101	80 - 120	2012-07-18
Xylene		1	mg/kg	0.300	0.305	102	80 - 120	2012-07-18

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	T104704219-12-8	Lubbock
2	NELAP	T104704392-12-4	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

Result Comments

1 Dilution due to excessive hydrocarbons.
2 CCV was double-spiked.

Attachments

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

Analysis Request of Chain of Custody Record

PAGE: 1 of 4

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640 1446

PROJECT NAME: GJ West COOP Central TB- Eddy Co. NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TX1005 (Ext. to C35)	TPH 8015 MOD	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
302735	6/3/12					AH-1 '0-1'	1				X		X	X	X											X				
736						AH-1 '1-1.5'								X																
737						AH-1 '2-2.5'								X																
738						AH-1 '3-3.5'								X																
739						AH-1 '4-4.5'								X																
740						AH-1 '5-5.5'																								
741						AH-1 '6-6.5'																								
742						AH-1 '7-7.5'																								
743						AH-1 '8-8.5'																								
744						AH-1 '9-9.5'																								

RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature) Jeanne Fitch	Date: 7-5-12 Time: 1115
SAMPLED BY: (Print & Initial) Kim Davis	Date: 6/3/12 Time: 7		
RELINQUISHED BY: (Signature) Jeanne Fitch	Date: 7-5-12 Time: 1310	RECEIVED BY: (Signature) Akron	Date: 7512 Time: 1310
SAMPLE SHIPPED BY: (Circle) FEDEX HAND DELIVERED BUS UPS	AIRBILL #: OTHER:		
RELINQUISHED BY: (Signature) Akron	Date: 7-5-12 Time: 1310	RECEIVED BY: (Signature)	Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez	Results by:		
RECEIVING LABORATORY: Trace Analysis	RECEIVED BY: (Signature)		
ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE:	DATE: 07/09/12 TIME: 0800		RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED: 4°C	REMARKS: If TPH > 5,000 mg/kg Run deeper samples If total BTEX > 50 mg/kg Run deeper samples - or if Benzene > 10 mg/kg		

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

Add BTEX 302735 738 Add BTEX 302736 302751 302750

Midland - DRO/GRO

1010 10310

Analysis Request of Chain of Custody Record

PAGE: 2 of 4

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.: 114-6401446

PROJECT NAME: GJ West Roof Central TB - Eddy Co. NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
745	6/3/12				1	AH-2 '0-1'	1				X	
746						AH-2 '1-1.5'						
747						AH-2 '2-2.5'						
748						AH-2 '3-3.5'						
749						AH-3 '0-1'						
750						AH-3 '1-1.5'						
751						AH-3 '2-2.5'						
752						AH-3 '3-3.5'						
753						AH-3 '4-4.5'						
754						AH-3 '5-5.5'						

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B; TPH TX1005 (Ext. to C35); 8015 MOD.; 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:	RECEIVED BY: (Signature) Jaime Fitch — Date: 7-5-12 Time: 1115
RELINQUISHED BY: (Signature) Jaime Fitch	Date: 7-5-12 Time: 1310	RECEIVED BY: (Signature) AKom — Date: 7.5.12 Time: 1310
RELINQUISHED BY: (Signature) AKom	Date: 7-5-12 Time: 1310	RECEIVED BY: (Signature) — Date: Time:
RECEIVING LABORATORY: Trace Analysis		RECEIVED BY: (Signature) Sandra McCoy
ADDRESS:		DATE: 07/09/12 TIME: 0800
CITY: STATE: ZIP:		
CONTACT: PHONE:		

SAMPLED BY: (Print & Initial) Kim Dorey — Date: 6/3/12 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

SAMPLE CONDITION WHEN RECEIVED: 4°C

REMARKS: IF TPH > 5,000 mg/kg Run deeper sample
IF total BTEX > 50 mg/kg Run deeper sample

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

1SC 10510

Analysis Request of Chain of Custody Record

PAGE: 3 4

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG
SITE MANAGER: Ike Tavarez
PROJECT NO.: 114-6401446
PROJECT NAME: GJ West Coop Central TB Eddy Co. NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	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
755	7/3/12		1			AH-3 '6-6.5'	1				X														X				
756						AH-3 '7-7.5'																			HOLD				
757						AH-4 '0-1'							X	X											X				
758						AH-4 '1-1.5'																							
759						AH-4 '2-2.5'																							
760						AH-4 '3-3.5'																							
761						AH-4 '4-4.5'																							
762						AH-4 '5-5.5'																							
763						AH-4 '6-6.5'																							
764	↓		↓			AH-4 '7-7.5'	↓				↓														↓				

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Jeanne Fitch Date: 7-5-12 Time: 1115
SAMPLED BY: (Print & Initial) Kevin O'Brien Date: 7/3/12 Time:

RELINQUISHED BY: (Signature) Jeanne Fitch Date: 7-5-12 Time: 1310
RECEIVED BY: (Signature) [signature] Date: 7-5-12 Time: 1310
SAMPLE SHIPPED BY: (Circle) FEDEX BUS AIRBILL #:
(HAND DELIVERED) UPS OTHER:

RELINQUISHED BY: (Signature) [signature] Date: 7-5-12 Time: 1310
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:

RECEIVING LABORATORY: Trace Analysis
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) [signature]
DATE: 07/09/12 TIME: 0800
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4°C
REMARKS: If TPH > 5,000 mg/kg run deeper sample
If total BTEX > 50 mg/kg Run deeper sample

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

Analysis Request of Chain of Custody Record

PAGE: 4 OF: 4

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.: 114-6401446
PROJECT NAME: (?) West COOP Central TB Eddy Co. NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	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
765	7/3/12 (JMF)		1			AH-4 (8-8.5')	1				X														X				

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Kianne Fitch Date: 7-5-12 Time: 1115

RELINQUISHED BY: (Signature) Kianne Fitch Date: 7-5-12 Time: 1310
RECEIVED BY: (Signature) AKOM Date: 7-5-12 Time: 1316

RELINQUISHED BY: (Signature) AKOM Date: 7-5-12 Time: 1316
RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Kim Dorey Date: 7/3/12 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 Analysis
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) [signature] DATE: 07/09/12 TIME: 0800

SAMPLE CONDITION WHEN RECEIVED: 4°C

REMARKS: If TPH >5,000 mg/kg Run deeper sample
If total BTEX >50 mg/kg Run deeper sample.

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 14, 2012

Work Order: 12091212

Project Location: Eddy Co., NM
Project Name: COG/GJ West Co-op Central TB
Project Number: 114-6401446

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
309005	AH-1 2' Bottom	soil	2012-09-06	00:00	2012-09-11
309009	AH-3 4' Bottom	soil	2012-09-06	00:00	2012-09-11

Sample - Field Code	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
309005 - AH-1 2' Bottom	<50.0	<4.00
309009 - AH-3 4' Bottom	<50.0	<4.00

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 14, 2012

Work Order: 12091212

Project Location: Eddy Co., NM
Project Name: COG/GJ West Co-op Central TB
Project Number: 114-6401446

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
309005	AH-1 2' Bottom	soil	2012-09-06	00:00	2012-09-11
309009	AH-3 4' Bottom	soil	2012-09-06	00:00	2012-09-11

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.

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

Report Contents

Case Narrative

Samples for project COG/GJ West Co-op Central TB were received by TraceAnalysis, Inc. on 2012-09-11 and assigned to work order 12091212. Samples for work order 12091212 were received intact at a temperature of 2.1 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH DRO - NEW	S 8015 D	80327	2012-09-13 at 10:00	94785	2012-09-14 at 10:05
TPH GRO	S 8015 D	80319	2012-09-13 at 07:34	94774	2012-09-13 at 07:34

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 12091212 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: 309005 - AH-1 2' Bottom

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94785	Date Analyzed:	2012-09-14	Analyzed By:	CM
Prep Batch:	80327	Sample Preparation:	2012-09-13	Prepared By:	CM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	70 - 130

Sample: 309005 - AH-1 2' Bottom

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94774	Date Analyzed:	2012-09-13	Analyzed By:	JS
Prep Batch:	80319	Sample Preparation:	2012-09-13	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
GRO	U	1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.21	mg/Kg	1	2.00	110	70 - 130
4-Bromofluorobenzene (4-BFB)			2.20	mg/Kg	1	2.00	110	70 - 130

Sample: 309009 - AH-3 4' Bottom

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94785	Date Analyzed:	2012-09-14	Analyzed By:	CM
Prep Batch:	80327	Sample Preparation:	2012-09-13	Prepared By:	CM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	70 - 130

Sample: 309009 - AH-3 4' Bottom

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94774	Date Analyzed:	2012-09-13	Analyzed By:	JS
Prep Batch:	80319	Sample Preparation:	2012-09-13	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.06	mg/Kg	1	2.00	103	70 - 130
4-Bromofluorobenzene (4-BFB)			2.11	mg/Kg	1	2.00	106	70 - 130

Method Blanks

Method Blank (1) QC Batch: 94774

QC Batch: 94774 | Date Analyzed: 2012-09-13 | Analyzed By: JS
Prep Batch: 80319 | QC Preparation: 2012-09-13 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.359	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	70 - 130
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	70 - 130

Method Blank (1) QC Batch: 94785

QC Batch: 94785 | Date Analyzed: 2012-09-14 | Analyzed By: CM
Prep Batch: 80327 | QC Preparation: 2012-09-13 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.3	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 94774 | Date Analyzed: 2012-09-13 | Analyzed By: JS
Prep Batch: 80319 | QC Preparation: 2012-09-13 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	20.5	mg/Kg	1	20.0	<0.359	102	68.9 - 120

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	20.6	mg/Kg	1	20.0	<0.359	103	68.9 - 120	0	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	2.02	mg/Kg	1	2.00	101	101	70 - 130
4-Bromofluorobenzene (4-BFB)	2.07	2.02	mg/Kg	1	2.00	104	101	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94785 | Date Analyzed: 2012-09-14 | Analyzed By: CM
Prep Batch: 80327 | QC Preparation: 2012-09-13 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	206	mg/Kg	1	250	<15.3	82	70 - 130

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	219	mg/Kg	1	250	<15.3	88	70 - 130	6	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	95.9	101	mg/Kg	1	100	96	101	70 - 130

Matrix Spike (MS-1) Spiked Sample: 309005

QC Batch: 94774 Date Analyzed: 2012-09-13 Analyzed By: JS
Prep Batch: 80319 QC Preparation: 2012-09-13 Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	21.3	mg/Kg	1	20.0	<0.359	106	68.9 - 120

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	20.0	mg/Kg	1	20.0	<0.359	100	68.9 - 120	6	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)	2.08	1.90	mg/Kg	1	2	104	95	70 - 130
4-Bromofluorobenzene (4-BFB)	2.40	2.29	mg/Kg	1	2	120	114	70 - 130

Matrix Spike (MS-1) Spiked Sample: 309005

QC Batch: 94785 Date Analyzed: 2012-09-14 Analyzed By: CM
Prep Batch: 80327 QC Preparation: 2012-09-13 Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	205	mg/Kg	1	250	<15.3	82	70 - 130

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	198	mg/Kg	1	250	<15.3	79	70 - 130	4	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	102	100	mg/Kg	1	100	102	100	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 94774 | Date Analyzed: 2012-09-13 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.05	105	80 - 120	2012-09-13

Standard (CCV-2)

QC Batch: 94774 | Date Analyzed: 2012-09-13 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.974	97	80 - 120	2012-09-13

Standard (CCV-3)

QC Batch: 94774 | Date Analyzed: 2012-09-13 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.948	95	80 - 120	2012-09-13

Standard (CCV-1)

QC Batch: 94785 | Date Analyzed: 2012-09-14 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	201	80	80 - 120	2012-09-14

Standard (CCV-2)

QC Batch: 94785 | Date Analyzed: 2012-09-14 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	258	103	80 - 120	2012-09-14

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	T104704219-12-8	Lubbock

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.

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG
SITE MANAGER: Ike Tavarez
PROJECT NO.: 114-640144L
PROJECT NAME: COG / GJ West Coop Central TB
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
369005	9/6		S		X	AH-1 2' Bottom	1				X	
006						3'-3.5'						
007						4'-4.5'						
008						5'-5.5'						
009						AH-3 4' Bottom						
010						5'-5.5'						
011						6'-6.5'						
012						7'-7.5'						

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	TPH 8015 MOD (Ext. to C35)	TX1005	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																
	X																

RELINQUISHED BY: (Signature) Date: 9/7/12 Time:
RECEIVED BY: (Signature) Date: 9-11-12 Time: 1645

RELINQUISHED BY: (Signature) Date: 9-11-12 Time: 1645
RECEIVED BY: (Signature) Date: 9/11/12 Time: 16:45

RELINQUISHED BY: (Signature) Date: 9/12/12 Time: 10:30
RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) JT Date: Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS
OTHER: Jonestar
AIRBILL #: 7911 3913

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) 4A
DATE: 9-13-12 TIME: 9:15

SAMPLE CONDITION WHEN RECEIVED: 2-1 AH

REMARKS: If total TPH exceeds 1,000, run dry per samples

RUSH 48 by 9/11/12

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

Mike Lubbock-acd