SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	Mesilla State #2 Flow line					
Company:	COG Operating LLC					
Section, Township and Range	Unit H	Sec 16	T17S	R30E		
Lease Number:	API-30-015-31366					
County:	Eddy County					
GPS:	32.83502° N			103.96942° W		
Surface Owner:	State					
Mineral Owner:						
Directions:	In Loco Hills, from the intersection of Goat Roper Rd and 82, travel north on Goat Roper for 1.2 miles, turn right (east) and travel for 0.3 miles, turn right (south) and travel for 500', turn left (east) and travel for 500' to site on the south side of the lease road.					

Release Data:	
Date Released:	3/21/2012
Type Release:	Oil and Produced Water
Source of Contamination:	Steel flowline failure
Fluid Released:	14 bbls water 8 bbls oil
Fluids Recovered:	13 bbls water 6 bbls oil

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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	
>100 ft.	0	0
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:	**0**	

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

TETRA TECH

September 24, 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., Mesilla State #2, Unit H, Section 16, Township 17 South, Range 30 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Mesilla State #2 flow line located in Unit H, Section 16, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83502°, W 103.96942°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on March 21, 2012, and released approximately twenty-two (22) barrels of produced fluid from the flow line. To alleviate the problem, COG personnel repaired the flow line. A total of nineteen (19) barrels of standing fluids were recovered. The spill initiated south of the lease road affecting an area approximately 20' X 100' in the pasture. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 16. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 325' below surface. The groundwater data is shown in Figure 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 5,000 mg/kg.

Soil Assessment and Analytical Results

On March 28, 2012, Tetra Tech personnel inspected and sampled the spill area. Two (2) auger holes (AH-1 and AH-2) were installed using a stainless steel hand auger to assess the impacted soils. 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 hole (AH-1) exceeded the RRAL for TPH at 0-1', but declined below the RRAL at 1-1.5' below surface. Auger hole (AH-2) was not defined and exceeded the RRAL for TPH, benzene and total BTEX down to a depth of 2.5-3.0' below surface.

Elevated chloride concentrations were also detected in both auger holes. Auger hole (AH-1) declined with depth and was defined at 4-4.5' below surface. However, AH-2 was not vertically defined and showed a chloride bottom hole sample of 7,030 mg/kg at 2.5-3.0' below surface. Deeper samples were not collected due to a dense formation.

On April 24, 2012, Tetra Tech supervised the installation of one (1) borehole (BH-1) using an air rotary drilling rig to assess the soils. The borehole was installed in the area of AH-2 to a total depth of 10' below surface. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The borehole results are summarized in Table 1.

TETRA TECH

Referring to Table 1, the chloride impact was vertically defined in the shallow soils and significantly declined to <20.0 mg/kg at 2-3' below surface. In addition, the hydrocarbon impact was vertically defined and showed TPH and BTEX concentrations below the RRAL.

Remediation and Conclusion

On August 7, 2012, Tetra Tech personnel supervised the excavation of the spill area. The spill foot print and final excavation depths of the soil remediation were met as stated in the approved work plan. In order to remove the elevated hydrocarbon and chloride concentrations, the proposed excavation depths ranged from 2.5' to 3.0' below surface. Approximately 140 cubic yards were removed and disposed of at R360 facility. The excavated area was then backfilled with clean material to grade.

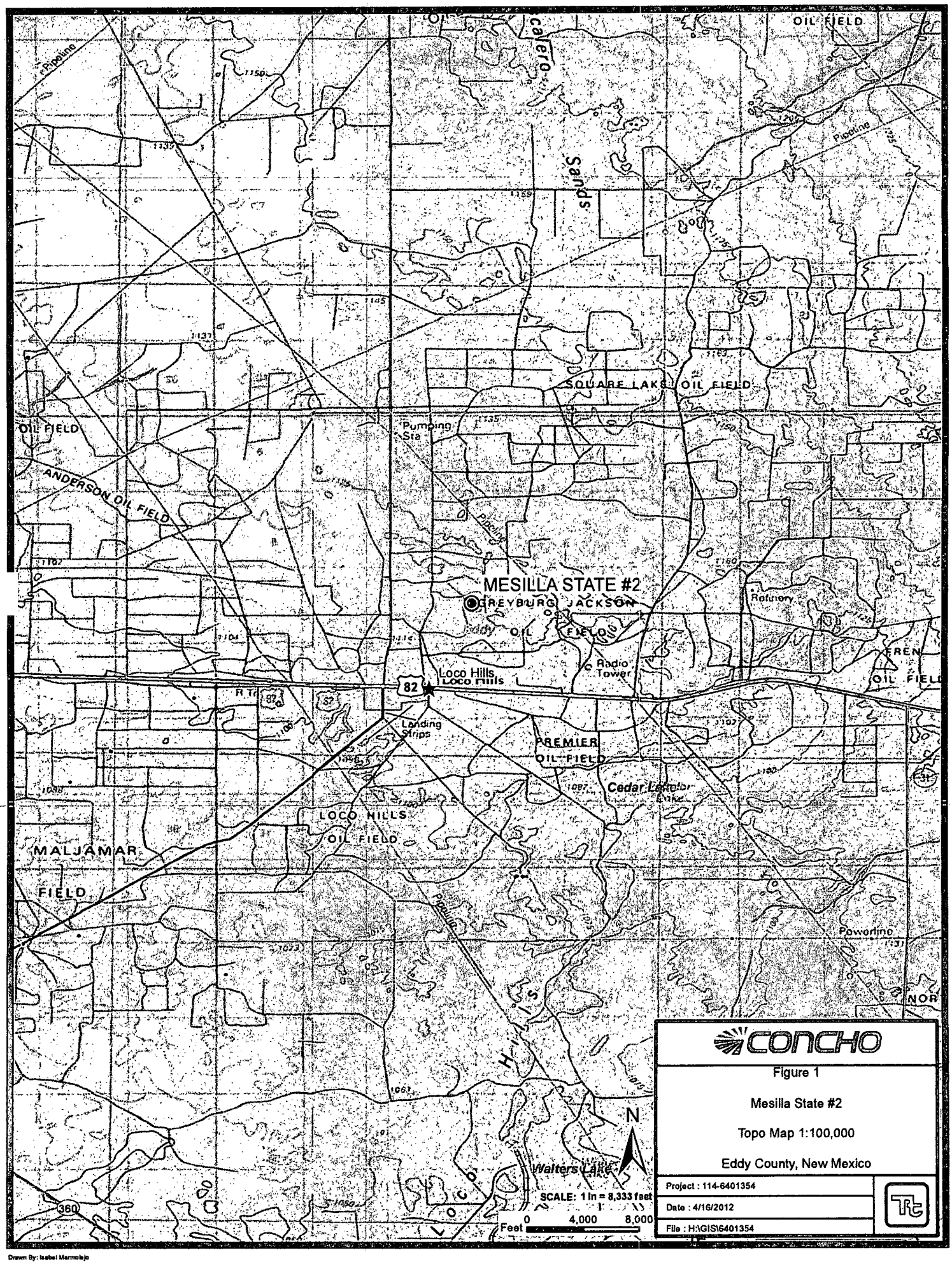
Based on the remediation activities performed at this location, COG requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Project Manager

cc: Pat Ellis – COG

Figures



CONCHO

Figure 1

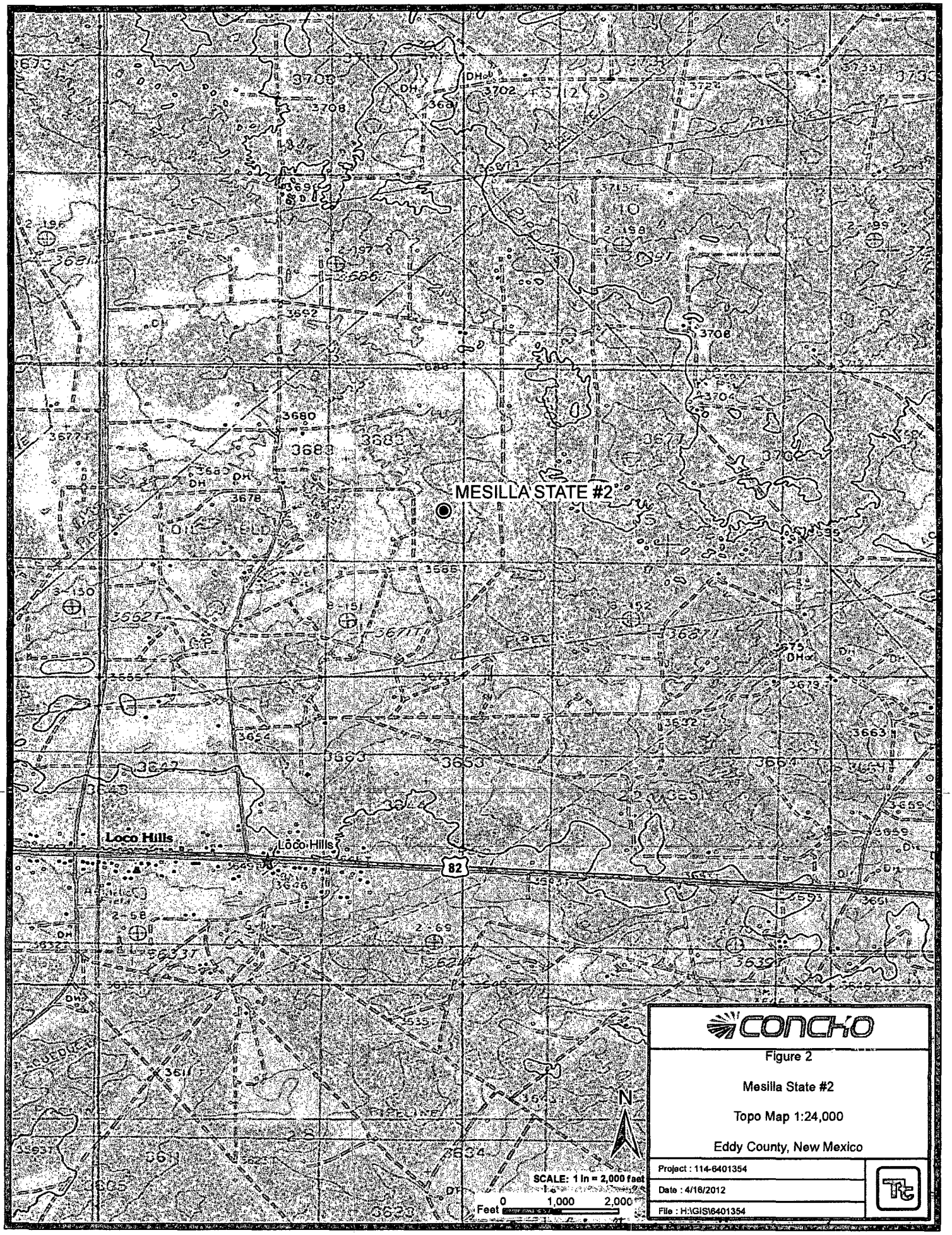
Mesilla State #2

Topo Map 1:100,000

Eddy County, New Mexico

Project : 114-6401354	
Date : 4/16/2012	
File : H:\GIS\6401354	

Drawn By: Isabel Marmolejo



CONCHO

Figure 2

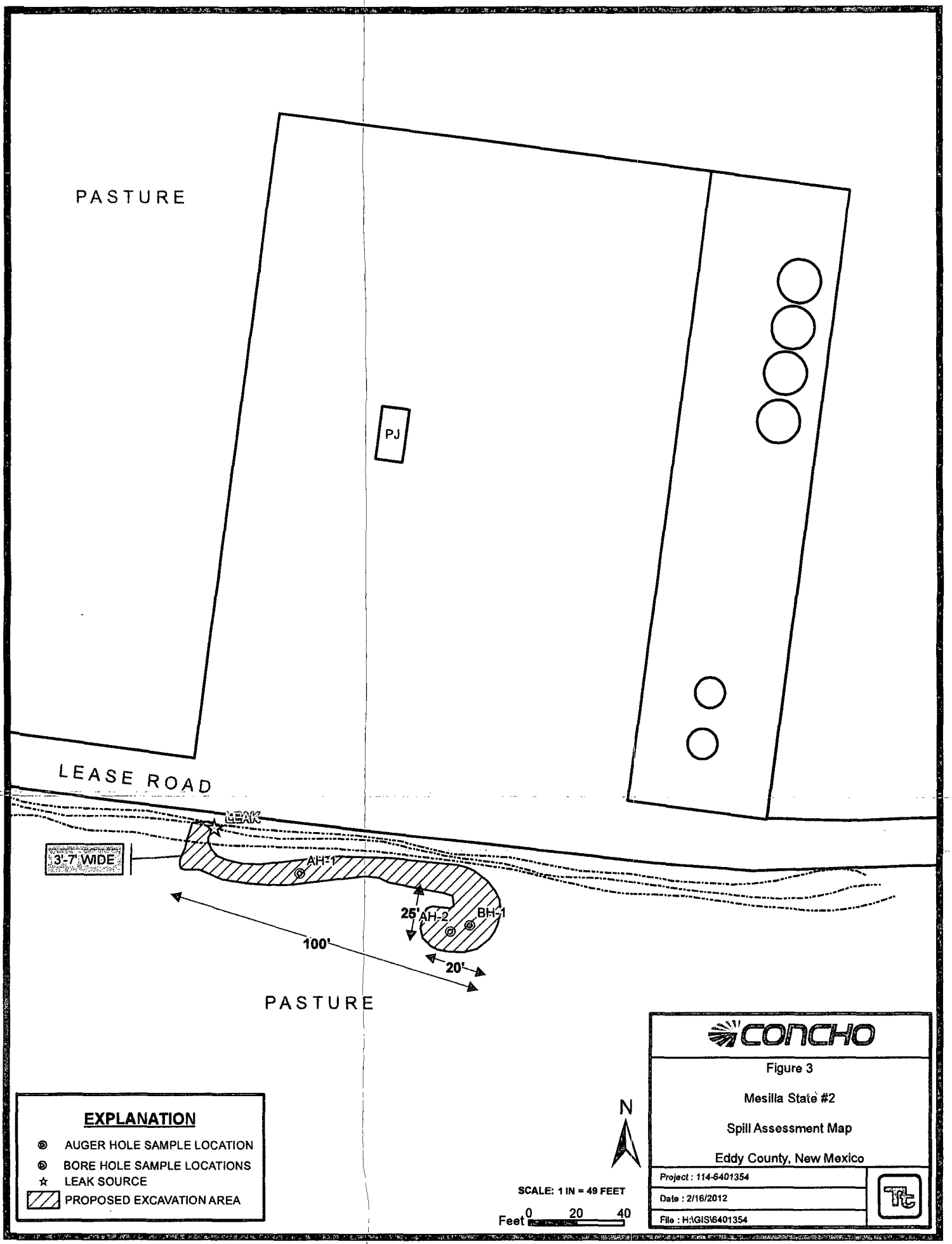
Mesilla State #2

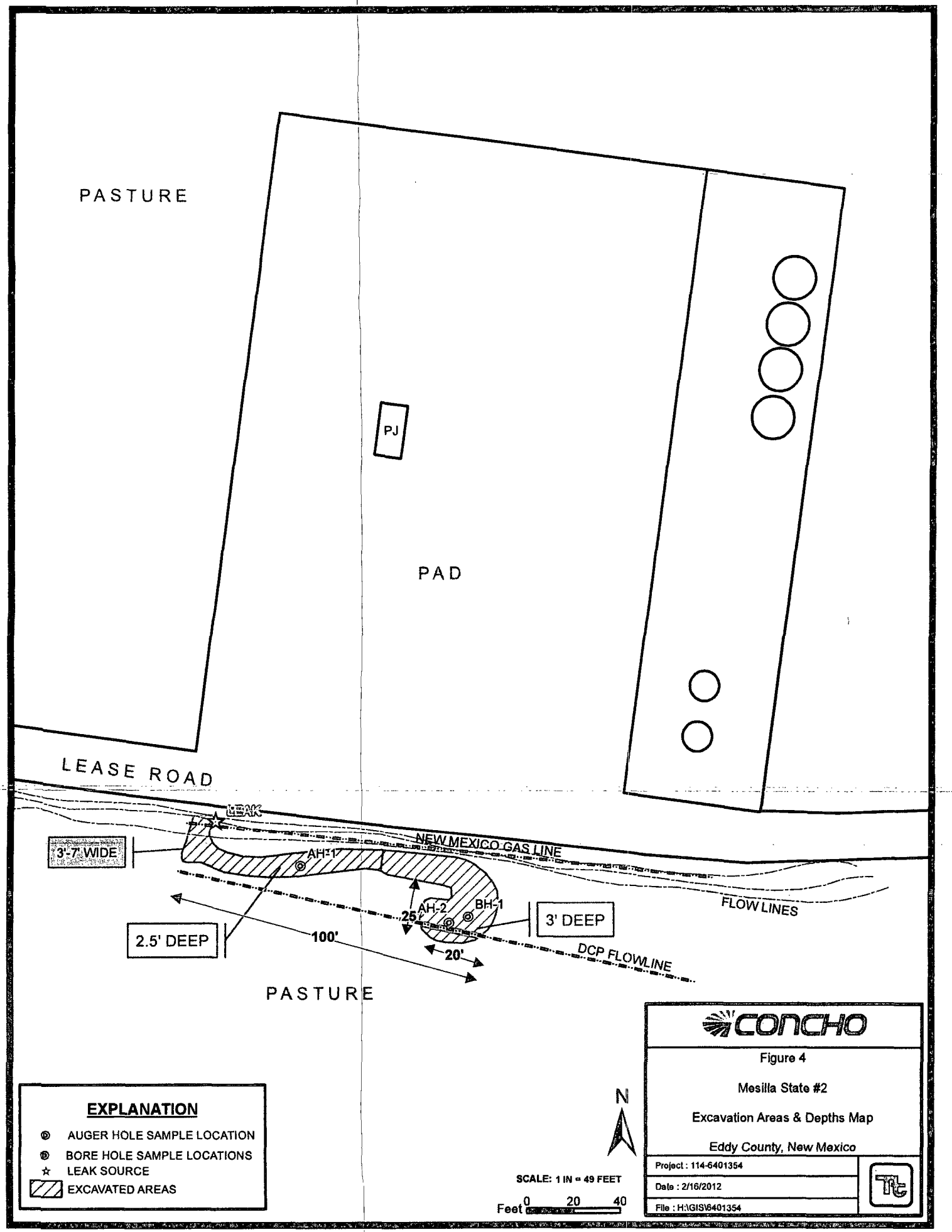
Topo Map 1:24,000

Eddy County, New Mexico

Project : 114-6401354	
Date : 4/16/2012	
File : H:\GIS\6401354	

Drawn By: Isabel Marmolejo


PASTURE
PJ
LEASE ROAD
LEAK
3'-7' WIDE
AH-1
AH-2
BH-1
25'
100'
20'
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATION
BORE HOLE SAMPLE LOCATIONS
LEAK SOURCE
PROPOSED EXCAVATION AREA
N
SCALE: 1 IN = 49 FEET
Feet 0 20 40
CONCHO
Figure 3
Mesilla State #2
Spill Assessment Map
Eddy County, New Mexico
Project : 114-6401354
Date : 2/16/2012
File : H:\GIS\6401354
Drawn By: Isabel Marmolejo


PASTURE
PJ
PAD
LEASE ROAD
LEAK
NEW MEXICO GAS LINE
3'-7' WIDE
AH-1
AH-2
BH-1
25'
3' DEEP
2.5' DEEP
100'
20'
FLOW LINES
DCP FLOWLINE
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATION
BORE HOLE SAMPLE LOCATIONS
LEAK SOURCE
EXCAVATED AREAS
N
SCALE: 1 IN = 49 FEET
Feet 0 20 40
CONCHO
Figure 4
Mesilla State #2
Excavation Areas & Depths Map
Eddy County, New Mexico
Project : 114-6401354
Date : 2/16/2012
File : H:\GIS\6401354
Drawn By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
Mesilla State #2
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	3/28/2012	0-1		X	821	4,190	5,011	1.64	13.6	8.40	14.0	37.6	241
	"	1-1.5		X	4.36	<50.0	4.36	-	-	-	-	-	1,430
	"	2-2.5		X	-	-	-	-	-	-	-	-	1,480
	"	3-3.5	X		-	-	-	-	-	-	-	-	1,910
	"	4-4.5	X		-	-	-	-	-	-	-	-	<200
AH-2	3/28/2012	0-1		X	9,470	16,100	25,570	123	344	177	286	930	2,540
	"	1-1.5		X	9,780	14,400	24,180	129	334	182	286	931	1,970
	"	2-2.5		X	9,290	5,560	14,850	87.7	235	125	196	644	7,840
	"	2.5-3		X	14,200	8,450	22,650	198	443	216	377	1,234	7,030
BH-1	4/24/2012	0-1		X	-	-	-	-	-	-	-	-	3,730
	"	2-3		X	-	-	-	-	-	-	-	-	<20.0
	"	4-5	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<20.0
	"	6-7	X		-	-	-	-	-	-	-	-	169
	"	9-10	X		-	-	-	-	-	-	-	-	<20.0

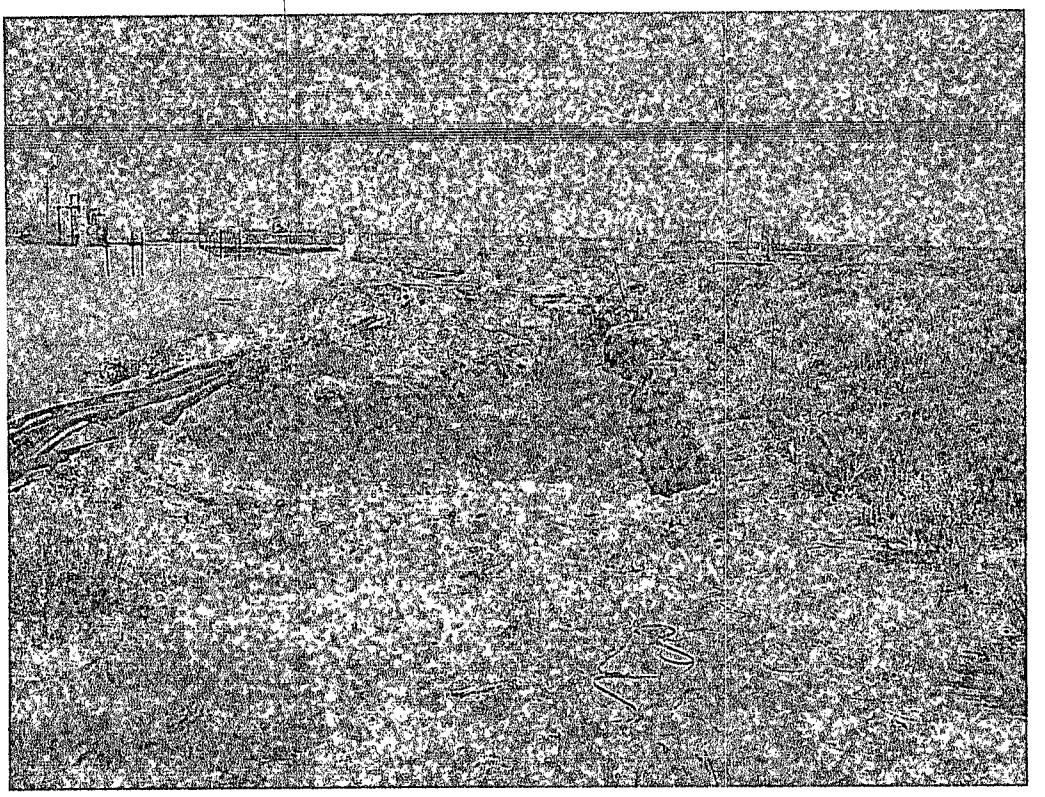
(-) Not Analyzed

Excavated Depths

Photos

COG Operating LLC
Mesilla State #2
Eddy County, New Mexico

TETRA TECH

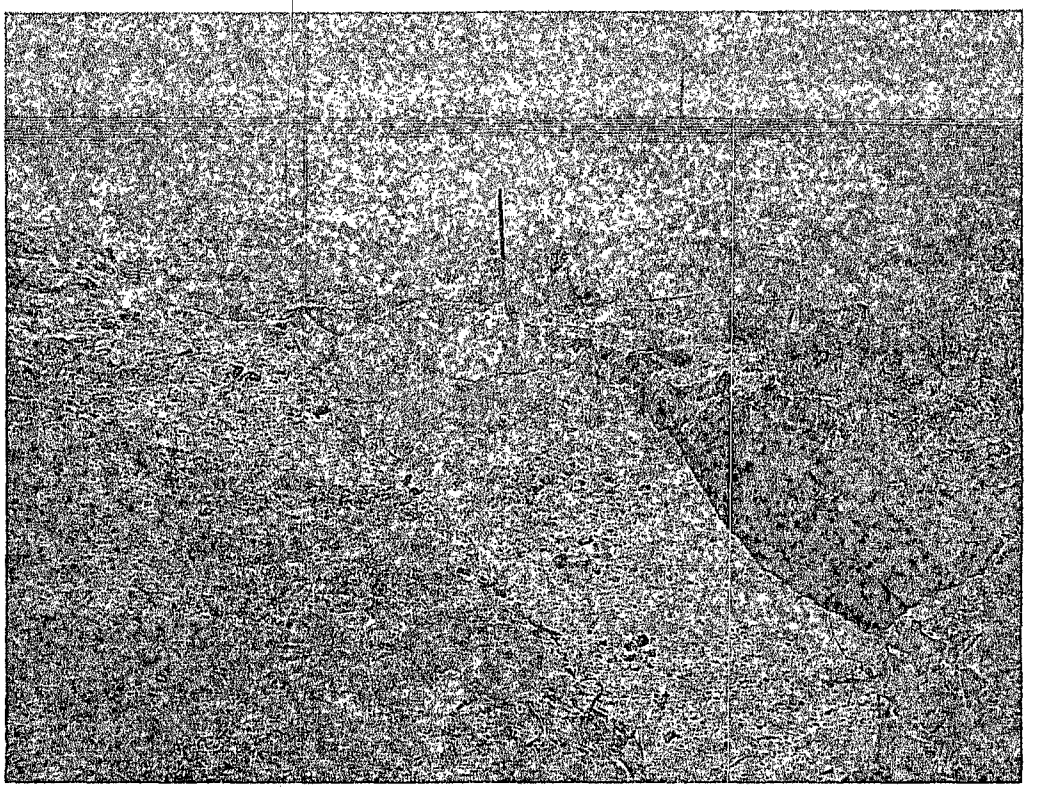


View East – Area of AH-1

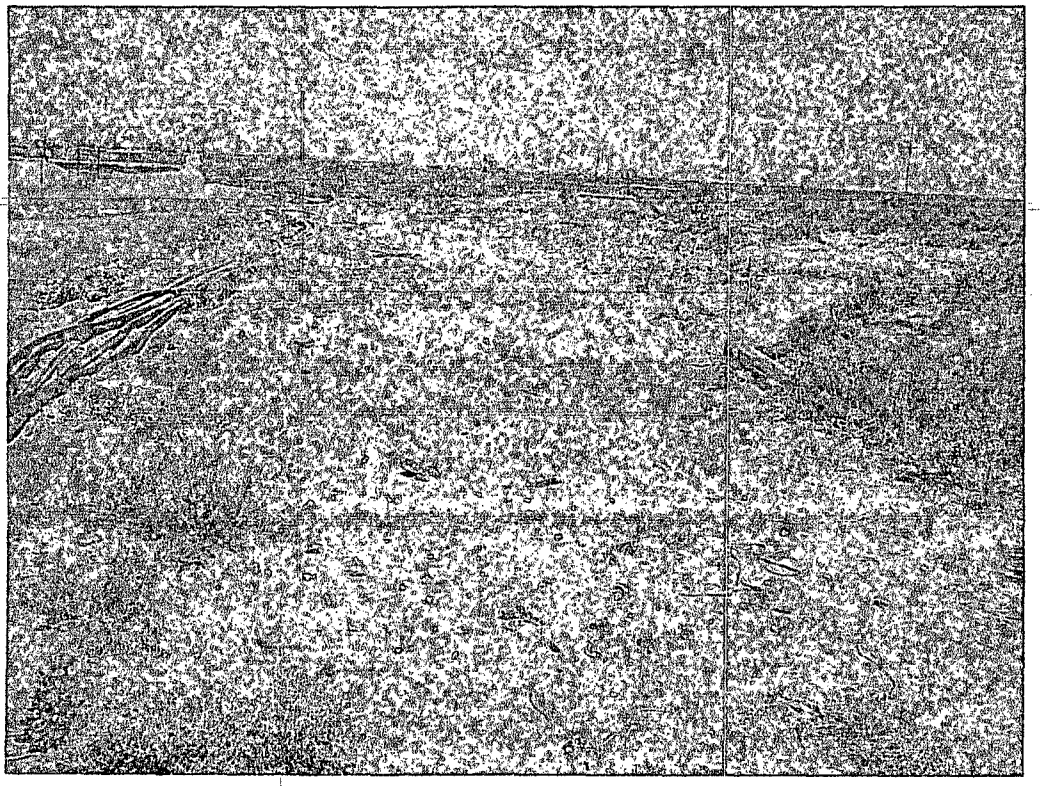
View West – Area of AH-2 and BH-1

COG Operating LLC
Mesilla State #2
Eddy County, New Mexico

TETRA TECH



View East - Backfill



View East - 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

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NOV 01 2012
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 1300 Midland, Texas 79701	Telephone No.	(432) 230-0077
Facility Name	Mesilla State #2	Facility Type	Flow line

Surface Owner: State	Mineral Owner	Lease No. (API#) 30-015-31366

LOCATION OF RELEASE

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

Latitude N 32.83502° **Longitude** W 103.96942°

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release 14 bbls pw 8 bbls oil	Volume Recovered 13 bbls pw 6 bbls oil
Source of Release: Steel flowline	Date and Hour of Occurrence 03/21/2012	Date and Hour of Discovery 03/21/2012 7:00a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom? Josh Russo	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The Mesilla State #2 steel flowline developed a hole in it releasing produced fluids. The defective join has been replaced with a new one and the flowline has been returned to service.

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: 9-24-12 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

1354

300'

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	Mesilla State #2	Facility Type	Flowline

Surface Owner State	Mineral Owner	Lease No. (API#) 30-015-31366

LOCATION OF RELEASE

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

Latitude 32 50.104 **Longitude** 103 58.159

NATURE OF RELEASE

Type of Release Oil and Produced water	Volume of Release 14bbls PW 8bbls Oil	Volume Recovered 13bbls PW 6bbls Oil
Source of Release Steel flowline	Date and Hour of Occurrence 03/21/2012	Date and Hour of Discovery 03/21/2012 7:00 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The Mesilla State #2 steel flowline developed a hole in it releasing produced fluids. The defective joint has been replaced with a new one and the flowline has been returned to service.

Describe Area Affected and Cleanup Action Taken.*

Initially 22bbls of produced fluids were released from the ruptured steel flowline and we were able to recover 19bbls of fluid with a vacuum truck. The spill area runs parallel to a lease road and measured an area of roughly 5' x 50' directly off the road in the pasture. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a work plan to the NMOCD for approval prior to any significant remediation work.

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: Josh Russo	Approved by District Supervisor:
Title: HSE Coordinator	Approval Date: / Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval: / Attached ☐
Date: 03/27/2012 Phone: 432-212-2399	

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Mesilla State #2
Eddy County, New Mexico

16 South 29 East

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

16 South 30 East

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

16 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 ***288***
18	17	16	15	14	13 **113**
19	20	21	22	23	24
30	29	28	27	26	25
31 **290**	32	33	34	35	36

17 South 29 East

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

17 South 30 East

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

17 South 31 East

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

18 South 31 East

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

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Site Location

Appendix C

Summary Report

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

Report Date: April 11, 2012

Work Order: 12040201

Project Location: Eddy Co., NM
Project Name: COG/Mesilla State #2
Project Number: 114-6401354

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
293106	AH-1 0-1'	soil	2012-03-28	00:00	2012-03-30
293107	AH-1 1-1.5'	soil	2012-03-28	00:00	2012-03-30
293108	AH-1 2-2.5'	soil	2012-03-28	00:00	2012-03-30
293109	AH-1 3-3.5'	soil	2012-03-28	00:00	2012-03-30
293110	AH-1 4-4.5'	soil	2012-03-28	00:00	2012-03-30
293111	AH-2 0-1'	soil	2012-03-28	00:00	2012-03-30
293112	AH-2 1-1.5'	soil	2012-03-28	00:00	2012-03-30
293113	AH-2 2-2.5'	soil	2012-03-28	00:00	2012-03-30
293114	AH-2 2.5-3'	soil	2012-03-28	00:00	2012-03-30

Sample - Field Code	BTEX Benzene (mg/Kg)	BTEX Toluene (mg/Kg)	BTEX Ethylbenzene (mg/Kg)	BTEX Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
293108 - AH-1 0-1'	**1.64**	**13.6**	**8.40**	**14.0**	**4190**	**821**
293107 - AH-1 1-1.5'					<50.0 Qs	**4.36**
293111 - AH-2 0-1'	**123**	**344**	**177**	**286**	**16100**	**9470** Qs
293112 - AH-2 1-1.5'	**129**	**334**	**182**	**286**	**14400** Qs	**9780**
293113 - AH-2 2-2.5'	**87.7**	**235**	**125**	**196**	**5560** Qs	**9290**
293114 - AH-2 2.5-3'	**198**	**443**	**216**	**377**	**8450**	**14200**

Sample: 293106 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**241**	mg/Kg	4

Sample: 293107 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1430	mg/Kg	4

Sample: 293108 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1480	mg/Kg	4

Sample: 293109 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		1910	mg/Kg	4

Sample: 293110 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 293111 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		2540	mg/Kg	4

Sample: 293112 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1970	mg/Kg	4

Sample: 293113 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		7840	mg/Kg	4

Sample: 293114 - AH-2 2.5-3'

Param	Flag	Result	Units	RL
Chloride		7030	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
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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: April 11, 2012

Work Order: 12040201

Project Location: Eddy Co., NM
Project Name: COG/Mesilla State #2
Project Number: 114-6401354

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
293106	AH-1 0-1'	soil	2012-03-28	00:00	2012-03-30
293107	AH-1 1-1.5'	soil	2012-03-28	00:00	2012-03-30
293108	AH-1 2-2.5'	soil	2012-03-28	00:00	2012-03-30
293109	AH-1 3-3.5'	soil	2012-03-28	00:00	2012-03-30
293110	AH-1 4-4.5'	soil	2012-03-28	00:00	2012-03-30
293111	AH-2 0-1'	soil	2012-03-28	00:00	2012-03-30
293112	AH-2 1-1.5'	soil	2012-03-28	00:00	2012-03-30
293113	AH-2 2-2.5'	soil	2012-03-28	00:00	2012-03-30
293114	AH-2 2.5-3'	soil	2012-03-28	00:00	2012-03-30

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

Michael Abel

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

Report Contents

Case Narrative

Samples for project COG/Mesilla State #2 were received by TraceAnalysis, Inc. on 2012-03-30 and assigned to work order 12040201. Samples for work order 12040201 were received intact at a temperature of 0.9 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	76335	2012-04-03 at 10:12	89940	2012-04-03 at 10:29
BTEX	S 8021B	76371	2012-04-04 at 10:00	89995	2012-04-04 at 11:05
BTEX	S 8021B	76405	2012-04-05 at 09:44	90033	2012-04-05 at 09:59
BTEX	S 8021B	76426	2012-04-06 at 10:00	90067	2012-04-06 at 11:58
Chloride (Titration)	SM 4500-Cl B	76362	2012-04-04 at 12:51	90054	2012-04-08 at 08:35
TPH DRO - NEW	S 8015 D	76291	2012-04-02 at 13:55	89888	2012-04-02 at 13:59
TPH DRO - NEW	S 8015 D	76359	2012-04-04 at 14:12	89977	2012-04-04 at 14:16
TPH DRO - NEW	S 8015 D	76385	2012-04-05 at 13:14	90014	2012-04-05 at 13:16
TPH GRO	S 8015 D	76308	2012-04-02 at 10:48	89908	2012-04-03 at 11:36
TPH GRO	S 8015 D	76335	2012-04-03 at 10:12	89939	2012-04-03 at 12:00
TPH GRO	S 8015 D	76371	2012-04-04 at 10:00	89994	2012-04-04 at 10:25
TPH GRO	S 8015 D	76405	2012-04-05 at 09:44	90034	2012-04-05 at 10:36
TPH GRO	S 8015 D	76426	2012-04-06 at 10:00	90068	2012-04-06 at 12:25

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 12040201 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: 293106 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	89940	Date Analyzed:	2012-04-03	Analyzed By:	tc
Prep Batch:	76335	Sample Preparation:	2012-04-03	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**1.64**	mg/Kg	10	0.0200
Toluene		1	**13.6**	mg/Kg	10	0.0200
Ethylbenzene		1	**8.40**	mg/Kg	10	0.0200
Xylene		1	**14.0**	mg/Kg	10	0.0200

Surrogate	Flag	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		7.11	mg/Kg	10	10.0	71	75 - 135.4
4-Bromofluorobenzene (4-BFB)				9.13	mg/Kg	10	10.0	91	63.6 - 158.9

Sample: 293106 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90054	Date Analyzed:	2012-04-08	Analyzed By:	AR
Prep Batch:	76362	Sample Preparation:	2012-04-04	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**241**	mg/Kg	50	4.00

Sample: 293106 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	89888	Date Analyzed:	2012-04-02	Analyzed By:	DA
Prep Batch:	76291	Sample Preparation:	2012-04-02	Prepared By:	DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**4190**	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	570	mg/Kg	10	100	570	49.3 - 157.5

Sample: 293106 - AH-1 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 89908
Prep Batch: 76308

Analytical Method: S 8015 D
Date Analyzed: 2012-04-03
Sample Preparation: 2012-04-02

Prep Method: S 5035
Analyzed By: tc
Prepared By: tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**821**	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.40	mg/Kg	10	10.0	94	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			11.1	mg/Kg	10	10.0	111	45.1 - 162.2

Sample: 293107 - AH-1 1-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 90054
Prep Batch: 76362

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-04-08
Sample Preparation: 2012-04-04

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1430**	mg/Kg	100	4.00

Sample: 293107 - AH-1 1-1.5'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 89977
Prep Batch: 76359

Analytical Method: S 8015 D
Date Analyzed: 2012-04-04
Sample Preparation: 2012-04-04

Prep Method: N/A
Analyzed By: DA
Prepared By: DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	<50.0	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: 293107 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	89994	Date Analyzed:	2012-04-04	Analyzed By:	tc
Prep Batch:	76371	Sample Preparation:	2012-04-04	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**4.36**	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.22	mg/Kg	1	2.00	111	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	45.1 - 162.2

Sample: 293108 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90054	Date Analyzed:	2012-04-08	Analyzed By:	AR
Prep Batch:	76362	Sample Preparation:	2012-04-04	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1480**	mg/Kg	100	4.00

Sample: 293109 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90054	Date Analyzed:	2012-04-08	Analyzed By:	AR
Prep Batch:	76362	Sample Preparation:	2012-04-04	Prepared By:	AR

continued ...

sample 293109 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1910**	mg/Kg	100	4.00

Sample: 293110 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90054	Date Analyzed:	2012-04-08	Analyzed By:	AR
Prep Batch:	76362	Sample Preparation:	2012-04-04	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U		<200	mg/Kg	50	4.00

Sample: 293111 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	89940	Date Analyzed:	2012-04-03	Analyzed By:	tc
Prep Batch:	76335	Sample Preparation:	2012-04-03	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**123**	mg/Kg	500	0.0200
Toluene		1	**344**	mg/Kg	500	0.0200
Ethylbenzene		1	**177**	mg/Kg	500	0.0200
Xylene		1	**286**	mg/Kg	500	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			466	mg/Kg	500	500	93	75 - 135.4
4-Bromofluorobenzene (4-BFB)			485	mg/Kg	500	500	97	63.6 - 158.9

Sample: 293111 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90054	Date Analyzed:	2012-04-08	Analyzed By:	AR
Prep Batch:	76362	Sample Preparation:	2012-04-04	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**2540**		mg/Kg	100	4.00

Sample: 293111 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	89888	Date Analyzed:	2012-04-02	Analyzed By:	DA
Prep Batch:	76291	Sample Preparation:	2012-04-02	Prepared By:	DA

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO		1	**16100**		mg/Kg	20	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		1290	mg/Kg	20	100	1290	49.3 - 157.5

Sample: 293111 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	89939	Date Analyzed:	2012-04-03	Analyzed By:	tc
Prep Batch:	76335	Sample Preparation:	2012-04-03	Prepared By:	tc

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	Qs	1	**9470**		mg/Kg	500	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			467	mg/Kg	500	500	93	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			568	mg/Kg	500	500	114	45.1 - 162.2

Sample: 293112 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90033	Date Analyzed:	2012-04-05	Analyzed By:	tc
Prep Batch:	76405	Sample Preparation:	2012-04-05	Prepared By:	tc

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**129**	mg/Kg	500	0.0200
Toluene		1	**334**	mg/Kg	500	0.0200
Ethylbenzene		1	**182**	mg/Kg	500	0.0200
Xylene		1	**286**	mg/Kg	500	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			476	mg/Kg	500	500	95	75 - 135.4
4-Bromofluorobenzene (4-BFB)			495	mg/Kg	500	500	99	63.6 - 158.9

Sample: 293112 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90054	Date Analyzed:	2012-04-08	Analyzed By:	AR
Prep Batch:	76362	Sample Preparation:	2012-04-04	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1970**	mg/Kg	100	4.00

Sample: 293112 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	89977	Date Analyzed:	2012-04-04	Analyzed By:	DA
Prep Batch:	76359	Sample Preparation:	2012-04-04	Prepared By:	DA

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qs	1	**14400**	mg/Kg	20	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	1220	mg/Kg	20	100	1220	49.3 - 157.5

Sample: 293112 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90034	Date Analyzed:	2012-04-05	Analyzed By:	tc
Prep Batch:	76405	Sample Preparation:	2012-04-05	Prepared By:	tc

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
GRO		1		**9780**	mg/Kg	500	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			480	mg/Kg	500	500	96	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			501	mg/Kg	500	500	100	45.1 - 162.2

Sample: 293113 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	89995	Date Analyzed:	2012-04-04	Analyzed By:	tc
Prep Batch:	76371	Sample Preparation:	2012-04-04	Prepared By:	tc

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
Benzene		1		**87.7**	mg/Kg	100	0.0200
Toluene		1		**235**	mg/Kg	100	0.0200
Ethylbenzene		1		**125**	mg/Kg	100	0.0200
Xylene		1		**196**	mg/Kg	100	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			89.8	mg/Kg	100	100	90	75 - 135.4
4-Bromofluorobenzene (4-BFB)			112	mg/Kg	100	100	112	63.6 - 158.9

Sample: 293113 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90054	Date Analyzed:	2012-04-08	Analyzed By:	AR
Prep Batch:	76362	Sample Preparation:	2012-04-04	Prepared By:	AR

continued ...

sample 293113 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**7840**	mg/Kg	100	4.00

Sample: 293113 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	89977	Date Analyzed:	2012-04-04	Analyzed By:	DA
Prep Batch:	76359	Sample Preparation:	2012-04-04	Prepared By:	DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**5560**	mg/Kg	10	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		529	mg/Kg	10	100	529	49.3 - 157.5

Sample: 293113 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	89994	Date Analyzed:	2012-04-04	Analyzed By:	tc
Prep Batch:	76371	Sample Preparation:	2012-04-04	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**9290**	mg/Kg	100	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			92.5	mg/Kg	100	100	92	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			115	mg/Kg	100	100	115	45.1 - 162.2

Sample: 293114 - AH-2 2.5-3'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90067	Date Analyzed:	2012-04-06	Analyzed By:	AG
Prep Batch:	76426	Sample Preparation:	2012-04-06	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**198**	mg/Kg	500	0.0200
Toluene		1	**443**	mg/Kg	500	0.0200
Ethylbenzene		1	**216**	mg/Kg	500	0.0200
Xylene		1	**377**	mg/Kg	500	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			482	mg/Kg	500	500	96	75 - 135.4
4-Bromofluorobenzene (4-BFB)			554	mg/Kg	500	500	111	63.6 - 158.9

Sample: 293114 - AH-2 2.5-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90054	Date Analyzed:	2012-04-08	Analyzed By:	AR
Prep Batch:	76362	Sample Preparation:	2012-04-04	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**7030**	mg/Kg	100	4.00

Sample: 293114 - AH-2 2.5-3'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90014	Date Analyzed:	2012-04-05	Analyzed By:	DA
Prep Batch:	76385	Sample Preparation:	2012-04-05	Prepared By:	DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**8450**	mg/Kg	10	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		906	mg/Kg	10	100	906	49.3 - 157.5

Sample: 293114 - AH-2 2.5-3'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90068	Date Analyzed:	2012-04-06	Analyzed By:	AG
Prep Batch:	76426	Sample Preparation:	2012-04-06	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**14200**	mg/Kg	500	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			489	mg/Kg	500	500	98	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			505	mg/Kg	500	500	101	45.1 - 162.2

Method Blanks

Method Blank (1) QC Batch: 89888

QC Batch: 89888 | Date Analyzed: 2012-04-02 | Analyzed By: DA
Prep Batch: 76291 | QC Preparation: 2012-04-02 | Prepared By: DA

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			126	mg/Kg	1	100	126	52 - 140.8

Method Blank (1) QC Batch: 89908

QC Batch: 89908 | Date Analyzed: 2012-04-03 | Analyzed By: tc
Prep Batch: 76308 | QC Preparation: 2012-04-02 | Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.65	mg/Kg	1	2.00	82	78.6 - 111
4-Bromofluorobenzene (4-BFB)			1.53	mg/Kg	1	2.00	76	55 - 100

Method Blank (1) QC Batch: 89939

QC Batch: 89939 | Date Analyzed: 2012-04-03 | Analyzed By: tc
Prep Batch: 76335 | QC Preparation: 2012-04-03 | Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	1.49	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.58	mg/Kg	1	2.00	79	78.6 - 111
4-Bromofluorobenzene (4-BFB)			1.44	mg/Kg	1	2.00	72	55 - 100

Method Blank (1) QC Batch: 89940

QC Batch: 89940 Date Analyzed: 2012-04-03 Analyzed By: tc
Prep Batch: 76335 QC Preparation: 2012-04-03 Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.59	mg/Kg	1	2.00	80	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.53	mg/Kg	1	2.00	76	55.9 - 112.4

Method Blank (1) QC Batch: 89977

QC Batch: 89977 Date Analyzed: 2012-04-04 Analyzed By: DA
Prep Batch: 76359 QC Preparation: 2012-04-04 Prepared By: DA

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			93.6	mg/Kg	1	100	94	52 - 140.8

Method Blank (1) QC Batch: 89994

QC Batch: 89994 Date Analyzed: 2012-04-04 Analyzed By: tc
Prep Batch: 76371 QC Preparation: 2012-04-04 Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	1.74	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.15	mg/Kg	1	2.00	108	78.6 - 111
4-Bromofluorobenzene (4-BFB)			1.95	mg/Kg	1	2.00	98	55 - 100

Method Blank (1) QC Batch: 89995

QC Batch: 89995 | Date Analyzed: 2012-04-04 | Analyzed By: tc
Prep Batch: 76371 | QC Preparation: 2012-04-04 | Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.12	mg/Kg	1	2.00	106	78 - 123.6
4-Bromofluorobenzene (4-BFB)			2.06	mg/Kg	1	2.00	103	55.9 - 112.4

Method Blank (1) QC Batch: 90014

QC Batch: 90014 | Date Analyzed: 2012-04-05 | Analyzed By: DA
Prep Batch: 76385 | QC Preparation: 2012-04-05 | Prepared By: DA

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			111	mg/Kg	1	100	111	52 - 140.8

Method Blank (1) QC Batch: 90033

QC Batch: 90033 | Date Analyzed: 2012-04-05 | Analyzed By: tc
Prep Batch: 76405 | QC Preparation: 2012-04-05 | Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.95	mg/Kg	1	2.00	98	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	55.9 - 112.4

Method Blank (1) QC Batch: 90034

QC Batch: 90034 | Date Analyzed: 2012-04-05 | Analyzed By: tc
Prep Batch: 76405 | QC Preparation: 2012-04-05 | Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	1.78	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.99	mg/Kg	1	2.00	100	78.6 - 111
4-Bromofluorobenzene (4-BFB)			1.81	mg/Kg	1	2.00	90	55 - 100

Method Blank (1) QC Batch: 90054

QC Batch: 90054 | Date Analyzed: 2012-04-08 | Analyzed By: AR
Prep Batch: 76362 | QC Preparation: 2012-04-04 | Prepared By: AR

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

Method Blank (1) QC Batch: 90067

QC Batch: 90067 | Date Analyzed: 2012-04-06 | Analyzed By: AG
Prep Batch: 76426 | QC Preparation: 2012-04-06 | Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.01	mg/Kg	1	2.00	100	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.96	mg/Kg	1	2.00	98	55.9 - 112.4

Method Blank (1) QC Batch: 90068

QC Batch: 90068 | Date Analyzed: 2012-04-06 | Analyzed By: AG
Prep Batch: 76426 | QC Preparation: 2012-04-06 | Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	1.52	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	78.6 - 111
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	55 - 100

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 89888 | Date Analyzed: 2012-04-02 | Analyzed By: DA
Prep Batch: 76291 | QC Preparation: 2012-04-02 | Prepared By: DA

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	246	mg/Kg	1	250	<14.5	98	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		1	245	mg/Kg	1	250	<14.5	98	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	116	109	mg/Kg	1	100	116	109	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 89908 | Date Analyzed: 2012-04-03 | Analyzed By: tc
Prep Batch: 76308 | QC Preparation: 2012-04-02 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.9	mg/Kg	1	20.0	<1.22	94	68.3 - 105.7

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.2	mg/Kg	1	20.0	<1.22	96	68.3 - 105.7	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)	1.91	2.00	mg/Kg	1	2.00	96	100	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.80	1.90	mg/Kg	1	2.00	90	95	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 89939 | Date Analyzed: 2012-04-03 | Analyzed By: tc
Prep Batch: 76335 | QC Preparation: 2012-04-03 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.9	mg/Kg	1	20.0	<1.22	80	68.3 - 105.7

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	16.8	mg/Kg	1	20.0	<1.22	84	68.3 - 105.7	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
Trifluorotoluene (TFT)	1.97	1.68	mg/Kg	1	2.00	98	84	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.81	1.57	mg/Kg	1	2.00	90	78	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 89940 | Date Analyzed: 2012-04-03 | Analyzed By: tc
Prep Batch: 76335 | QC Preparation: 2012-04-03 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.20	mg/Kg	1	2.00	<0.00470	110	86.5 - 124.9
Toluene		1	2.18	mg/Kg	1	2.00	<0.00980	109	84.7 - 122.5
Ethylbenzene		1	2.17	mg/Kg	1	2.00	<0.00500	108	79.4 - 118.9
Xylene		1	6.49	mg/Kg	1	6.00	<0.0170	108	79.5 - 118.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.17	mg/Kg	1	2.00	<0.00470	108	86.5 - 124.9	1	20
Toluene		1	2.17	mg/Kg	1	2.00	<0.00980	108	84.7 - 122.5	0	20
Ethylbenzene		1	2.16	mg/Kg	1	2.00	<0.00500	108	79.4 - 118.9	0	20
Xylene		1	6.42	mg/Kg	1	6.00	<0.0170	107	79.5 - 118.9	1	20

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

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control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.51	1.83	mg/Kg	1	2.00	76	92	73.9 - 127
4-Bromofluorobenzene (4-BFB)	1.47	1.80	mg/Kg	1	2.00	74	90	70.4 - 119.9

Laboratory Control Spike (LCS-1)

QC Batch: 89977 | Date Analyzed: 2012-04-04 | Analyzed By: DA
Prep Batch: 76359 | QC Preparation: 2012-04-04 | Prepared By: DA

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	232	mg/Kg	1	250	<14.5	93	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		1	206	mg/Kg	1	250	<14.5	82	62 - 128.3	12	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	104	98.0	mg/Kg	1	100	104	98	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 89994 | Date Analyzed: 2012-04-04 | Analyzed By: tc
Prep Batch: 76371 | QC Preparation: 2012-04-04 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.2	mg/Kg	1	20.0	<1.22	86	68.3 - 105.7

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.3	mg/Kg	1	20.0	<1.22	86	68.3 - 105.7	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)	1.64	1.66	mg/Kg	1	2.00	82	83	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.54	1.56	mg/Kg	1	2.00	77	78	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 89995 | Date Analyzed: 2012-04-04 | Analyzed By: tc
Prep Batch: 76371 | QC Preparation: 2012-04-04 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.98	mg/Kg	1	2.00	<0.00470	99	86.5 - 124.9
Toluene		1	1.98	mg/Kg	1	2.00	<0.00980	99	84.7 - 122.5
Ethylbenzene		1	1.98	mg/Kg	1	2.00	<0.00500	99	79.4 - 118.9
Xylene		1	5.94	mg/Kg	1	6.00	<0.0170	99	79.5 - 118.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.15	mg/Kg	1	2.00	<0.00470	108	86.5 - 124.9	8	20
Toluene		1	2.16	mg/Kg	1	2.00	<0.00980	108	84.7 - 122.5	9	20
Ethylbenzene		1	2.14	mg/Kg	1	2.00	<0.00500	107	79.4 - 118.9	8	20
Xylene		1	6.42	mg/Kg	1	6.00	<0.0170	107	79.5 - 118.9	8	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)	1.75	1.88	mg/Kg	1	2.00	88	94	73.9 - 127
4-Bromofluorobenzene (4-BFB)	1.75	1.88	mg/Kg	1	2.00	88	94	70.4 - 119.9

Laboratory Control Spike (LCS-1)

QC Batch: 90014 | Date Analyzed: 2012-04-05 | Analyzed By: DA
Prep Batch: 76385 | QC Preparation: 2012-04-05 | Prepared By: DA

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	234	mg/Kg	1	250	<14.5	94	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		1	236	mg/Kg	1	250	<14.5	94	62 - 128.3	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	119	120	mg/Kg	1	100	119	120	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 90033 | Date Analyzed: 2012-04-05 | Analyzed By: tc
Prep Batch: 76405 | QC Preparation: 2012-04-05 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.20	mg/Kg	1	2.00	<0.00470	110	86.5 - 124.9
Toluene		1	2.24	mg/Kg	1	2.00	<0.00980	112	84.7 - 122.5
Ethylbenzene		1	2.26	mg/Kg	1	2.00	<0.00500	113	79.4 - 118.9
Xylene		1	6.79	mg/Kg	1	6.00	<0.0170	113	79.5 - 118.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.27	mg/Kg	1	2.00	<0.00470	114	86.5 - 124.9	3	20
Toluene		1	2.28	mg/Kg	1	2.00	<0.00980	114	84.7 - 122.5	2	20
Ethylbenzene		1	2.31	mg/Kg	1	2.00	<0.00500	116	79.4 - 118.9	2	20
Xylene		1	6.91	mg/Kg	1	6.00	<0.0170	115	79.5 - 118.9	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)	1.98	1.98	mg/Kg	1	2.00	99	99	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.01	2.02	mg/Kg	1	2.00	100	101	70.4 - 119.9

Laboratory Control Spike (LCS-1)

QC Batch: 90034 | Date Analyzed: 2012-04-05 | Analyzed By: tc
Prep Batch: 76405 | QC Preparation: 2012-04-05 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.8	mg/Kg	1	20.0	<1.22	89	68.3 - 105.7

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.9	mg/Kg	1	20.0	<1.22	90	68.3 - 105.7	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)	1.94	2.04	mg/Kg	1	2.00	97	102	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.82	1.93	mg/Kg	1	2.00	91	96	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 90054 | Date Analyzed: 2012-04-08 | Analyzed By: AR
Prep Batch: 76362 | QC Preparation: 2012-04-04 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			99.4	mg/Kg	1	100	<3.85	99	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			107	mg/Kg	1	100	<3.85	107	85 - 115	7	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: 90067 | Date Analyzed: 2012-04-06 | Analyzed By: AG
Prep Batch: 76426 | QC Preparation: 2012-04-06 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.07	mg/Kg	1	2.00	<0.00470	104	86.5 - 124.9
Toluene		1	2.07	mg/Kg	1	2.00	<0.00980	104	84.7 - 122.5
Ethylbenzene		1	2.07	mg/Kg	1	2.00	<0.00500	104	79.4 - 118.9
Xylene		1	6.20	mg/Kg	1	6.00	<0.0170	103	79.5 - 118.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.21	mg/Kg	1	2.00	<0.00470	110	86.5 - 124.9	6	20
Toluene		1	2.19	mg/Kg	1	2.00	<0.00980	110	84.7 - 122.5	6	20
Ethylbenzene		1	2.20	mg/Kg	1	2.00	<0.00500	110	79.4 - 118.9	6	20
Xylene		1	6.58	mg/Kg	1	6.00	<0.0170	110	79.5 - 118.9	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
Trifluorotoluene (TFT)	1.98	2.00	mg/Kg	1	2.00	99	100	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.02	2.05	mg/Kg	1	2.00	101	102	70.4 - 119.9

Laboratory Control Spike (LCS-1)

QC Batch: 90068 | Date Analyzed: 2012-04-06 | Analyzed By: AG
Prep Batch: 76426 | QC Preparation: 2012-04-06 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.4	mg/Kg	1	20.0	<1.22	87	68.3 - 105.7

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.5	mg/Kg	1	20.0	<1.22	88	68.3 - 105.7	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)	2.05	1.90	mg/Kg	1	2.00	102	95	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.92	1.80	mg/Kg	1	2.00	96	90	66.4 - 106.6

Matrix Spike (MS-1) Spiked Sample: 293135

QC Batch: 89888 | Date Analyzed: 2012-04-02 | Analyzed By: DA
Prep Batch: 76291 | QC Preparation: 2012-04-02 | Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	1040	mg/Kg	5	250	865	70	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		1	1040	mg/Kg	5	250	865	70	45.5 - 127	0	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	290	297	mg/Kg	5	100	290	297	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 293145

QC Batch: 89908 | Date Analyzed: 2012-04-03 | Analyzed By: tc
Prep Batch: 76308 | QC Preparation: 2012-04-02 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	89.9	mg/Kg	5	50.0	34.1827	111	28.2 - 157.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	97.4	mg/Kg	5	50.0	34.1827	126	28.2 - 157.2	8	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)	5.33	5.45	mg/Kg	5	5	107	109	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	5.00	5.12	mg/Kg	5	5	100	102	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 293178

QC Batch: 89939 | Date Analyzed: 2012-04-03 | Analyzed By: tc
Prep Batch: 76335 | QC Preparation: 2012-04-03 | Prepared By: tc

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs Qs	1	2.85	mg/Kg	1	20.0	1.4473	7	28.2 - 157.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qs Qs	1	2.42	mg/Kg	1	20.0	1.4473	5	28.2 - 157.2	16	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)	1.78	1.88	mg/Kg	1	2	89	94	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	1.69	1.71	mg/Kg	1	2	84	86	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 293180

QC Batch: 89940 | Date Analyzed: 2012-04-03 | Analyzed By: tc
Prep Batch: 76335 | QC Preparation: 2012-04-03 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.00	mg/Kg	1	2.00	<0.00470	100	69.3 - 159.2
Toluene		1	2.04	mg/Kg	1	2.00	<0.00980	102	68.7 - 157
Ethylbenzene		1	2.10	mg/Kg	1	2.00	<0.00500	105	71.6 - 158.2
Xylene		1	6.35	mg/Kg	1	6.00	<0.0170	106	70.8 - 159.8

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.08	mg/Kg	1	2.00	<0.00470	104	69.3 - 159.2	4	20
Toluene		1	2.12	mg/Kg	1	2.00	<0.00980	106	68.7 - 157	4	20
Ethylbenzene		1	2.18	mg/Kg	1	2.00	<0.00500	109	71.6 - 158.2	4	20
Xylene		1	6.60	mg/Kg	1	6.00	<0.0170	110	70.8 - 159.8	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
Trifluorotoluene (TFT)	1.78	2.05	mg/Kg	1	2	89	102	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	1.74	2.01	mg/Kg	1	2	87	100	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 293093

QC Batch: 89977 | Date Analyzed: 2012-04-04 | Analyzed By: DA
Prep Batch: 76359 | QC Preparation: 2012-04-04 | Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	Qs Qs	1	627	mg/Kg	1	250	194	173	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	1	709	mg/Kg	1	250	194	206	45.5 - 127	12	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	220	241	mg/Kg	1	100	220	241	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 293116

QC Batch: 89994 | Date Analyzed: 2012-04-04 | Analyzed By: tc
Prep Batch: 76371 | QC Preparation: 2012-04-04 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	1470	mg/Kg	50	500	870.943	120	28.2 - 157.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	1360	mg/Kg	50	500	870.943	98	28.2 - 157.2	8	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	35.6	44.2	mg/Kg	50	50	71	88	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)			39.2	45.1	mg/Kg	50	50	78	90	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 291980

QC Batch: 89995 | Date Analyzed: 2012-04-04 | Analyzed By: tc
Prep Batch: 76371 | QC Preparation: 2012-04-04 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	111	mg/Kg	100	100	5.7782	105	69.3 - 159.2
Toluene		1	137	mg/Kg	100	100	33.704	103	68.7 - 157
Ethylbenzene		1	134	mg/Kg	100	100	31.288	103	71.6 - 158.2
Xylene		1	363	mg/Kg	100	300	51.0769	104	70.8 - 159.8

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	108	mg/Kg	100	100	5.7782	102	69.3 - 159.2	3	20
Toluene		1	135	mg/Kg	100	100	33.704	101	68.7 - 157	2	20
Ethylbenzene		1	133	mg/Kg	100	100	31.288	102	71.6 - 158.2	1	20
Xylene		1	358	mg/Kg	100	300	51.0769	102	70.8 - 159.8	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
Trifluorotoluene (TFT)	94.2	92.4	mg/Kg	100	100	94	92	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	99.6	97.1	mg/Kg	100	100	100	97	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 291984

QC Batch: 90014 | Date Analyzed: 2012-04-05 | Analyzed By: DA
Prep Batch: 76385 | QC Preparation: 2012-04-05 | Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	603	mg/Kg	1	250	371	93	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		1	639	mg/Kg	1	250	371	107	45.5 - 127	6	20

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

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qer	Qsr	148	172	mg/Kg	1	100	148	172	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 293112

QC Batch: 90033 | Date Analyzed: 2012-04-05 | Analyzed By: tc
Prep Batch: 76405 | QC Preparation: 2012-04-05 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	628	mg/Kg	500	500	128.788	100	69.3 - 159.2
Toluene		1	773	mg/Kg	500	500	334.302	88	68.7 - 157
Ethylbenzene		1	634	mg/Kg	500	500	182.072	90	71.6 - 158.2
Xylene		1	1770	mg/Kg	500	1500	286.25	99	70.8 - 159.8

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	672	mg/Kg	500	500	128.788	109	69.3 - 159.2	7	20
Toluene		1	873	mg/Kg	500	500	334.302	108	68.7 - 157	12	20
Ethylbenzene		1	698	mg/Kg	500	500	182.072	103	71.6 - 158.2	10	20
Xylene		1	1900	mg/Kg	500	1500	286.25	108	70.8 - 159.8	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)	488	482	mg/Kg	500	500	98	96	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	492	506	mg/Kg	500	500	98	101	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 291979

QC Batch: 90034 | Date Analyzed: 2012-04-05 | Analyzed By: tc
Prep Batch: 76405 | QC Preparation: 2012-04-05 | Prepared By: tc

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	27.8	mg/Kg	1	20.0	15.4577	62	28.2 - 157.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	24.5	mg/Kg	1	20.0	15.4577	45	28.2 - 157.2	13	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)	1.72	2.02	mg/Kg	1	2	86	101	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	1.63	1.93	mg/Kg	1	2	82	96	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 293115

QC Batch: 90054 | Date Analyzed: 2012-04-08 | Analyzed By: AR
Prep Batch: 76362 | QC Preparation: 2012-04-04 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			12600	mg/Kg	100	10000	2310	103	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			13300	mg/Kg	100	10000	2310	110	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: 293085

QC Batch: 90067 | Date Analyzed: 2012-04-06 | Analyzed By: AG
Prep Batch: 76426 | QC Preparation: 2012-04-06 | Prepared By: tc

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	5.78	mg/Kg	5	5.00	<0.0235	116	69.3 - 159.2
Toluene		1	5.77	mg/Kg	5	5.00	<0.0490	115	68.7 - 157
Ethylbenzene		1	5.92	mg/Kg	5	5.00	<0.0250	118	71.6 - 158.2
Xylene		1	17.7	mg/Kg	5	15.0	<0.0850	118	70.8 - 159.8

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	5.38	mg/Kg	5	5.00	<0.0235	108	69.3 - 159.2	7	20
Toluene		1	5.43	mg/Kg	5	5.00	<0.0490	109	68.7 - 157	6	20
Ethylbenzene		1	5.56	mg/Kg	5	5.00	<0.0250	111	71.6 - 158.2	6	20
Xylene		1	16.6	mg/Kg	5	15.0	<0.0850	111	70.8 - 159.8	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)	5.42	5.33	mg/Kg	5	5	108	107	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	5.38	5.31	mg/Kg	5	5	108	106	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 293117

QC Batch: 90068 | Date Analyzed: 2012-04-06 | Analyzed By: AG
Prep Batch: 76426 | QC Preparation: 2012-04-06 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	46.0	mg/Kg	5	50.0	6.82	78	28.2 - 157.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	48.0	mg/Kg	5	50.0	6.82	96	28.2 - 157.2	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
Trifluorotoluene (TFT)	4.94	4.92	mg/Kg	5	5	99	98	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	4.75	4.77	mg/Kg	5	5	95	95	77.9 - 122.4

Calibration Standards

Standard (CCV-2)

QC Batch: 89888 | Date Analyzed: 2012-04-02 | Analyzed By: DA

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	2012-04-02

Standard (CCV-3)

QC Batch: 89888 | Date Analyzed: 2012-04-02 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	242	97	80 - 120	2012-04-02

Standard (CCV-4)

QC Batch: 89888 | Date Analyzed: 2012-04-02 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	244	98	80 - 120	2012-04-02

Standard (CCV-2)

QC Batch: 89908 | Date Analyzed: 2012-04-03 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.15	115	80 - 120	2012-04-03

Standard (CCV-3)

QC Batch: 89908 | Date Analyzed: 2012-04-03 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.20	120	80 - 120	2012-04-03

Standard (CCV-2)

QC Batch: 89939 | Date Analyzed: 2012-04-03 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.03	103	80 - 120	2012-04-03

Standard (CCV-3)

QC Batch: 89939 | Date Analyzed: 2012-04-03 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.01	101	80 - 120	2012-04-03

Standard (CCV-1)

QC Batch: 89940 | Date Analyzed: 2012-04-03 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.105	105	80 - 120	2012-04-03
Toluene		1	mg/kg	0.100	0.105	105	80 - 120	2012-04-03
Ethylbenzene		1	mg/kg	0.100	0.103	103	80 - 120	2012-04-03
Xylene		1	mg/kg	0.300	0.312	104	80 - 120	2012-04-03

Standard (CCV-2)

QC Batch: 89940 | Date Analyzed: 2012-04-03 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.104	104	80 - 120	2012-04-03
Toluene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-03
Ethylbenzene		1	mg/kg	0.100	0.102	102	80 - 120	2012-04-03
Xylene		1	mg/kg	0.300	0.303	101	80 - 120	2012-04-03

Standard (CCV-3)

QC Batch: 89940 | Date Analyzed: 2012-04-03 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.107	107	80 - 120	2012-04-03
Toluene		1	mg/kg	0.100	0.108	108	80 - 120	2012-04-03
Ethylbenzene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-03
Xylene		1	mg/kg	0.300	0.317	106	80 - 120	2012-04-03

Standard (CCV-1)

QC Batch: 89977 | Date Analyzed: 2012-04-04 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	254	102	80 - 120	2012-04-04

Standard (CCV-2)

QC Batch: 89977 | Date Analyzed: 2012-04-04 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	236	94	80 - 120	2012-04-04

Standard (CCV-3)

QC Batch: 89977 | Date Analyzed: 2012-04-04 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	220	88	80 - 120	2012-04-04

Standard (CCV-1)

QC Batch: 89994 | Date Analyzed: 2012-04-04 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.03	103	80 - 120	2012-04-04

Standard (CCV-2)

QC Batch: 89994 | Date Analyzed: 2012-04-04 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.17	117	80 - 120	2012-04-04

Standard (CCV-3)

QC Batch: 89994 | Date Analyzed: 2012-04-04 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.14	114	80 - 120	2012-04-04

Standard (CCV-2)

QC Batch: 89995 | Date Analyzed: 2012-04-04 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.100	100	80 - 120	2012-04-04
Toluene		1	mg/kg	0.100	0.0996	100	80 - 120	2012-04-04
Ethylbenzene		1	mg/kg	0.100	0.0983	98	80 - 120	2012-04-04
Xylene		1	mg/kg	0.300	0.296	99	80 - 120	2012-04-04

Standard (CCV-3)

QC Batch: 89995 Date Analyzed: 2012-04-04 Analyzed By: tc

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	2012-04-04
Toluene		1	mg/kg	0.100	0.105	105	80 - 120	2012-04-04
Ethylbenzene		1	mg/kg	0.100	0.104	104	80 - 120	2012-04-04
Xylene		1	mg/kg	0.300	0.312	104	80 - 120	2012-04-04

Standard (CCV-2)

QC Batch: 90014 Date Analyzed: 2012-04-05 Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	248	99	80 - 120	2012-04-05

Standard (CCV-3)

QC Batch: 90014 Date Analyzed: 2012-04-05 Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	228	91	80 - 120	2012-04-05

Standard (CCV-1)

QC Batch: 90033 | Date Analyzed: 2012-04-05 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0942	94	80 - 120	2012-04-05
Toluene		1	mg/kg	0.100	0.0948	95	80 - 120	2012-04-05
Ethylbenzene		1	mg/kg	0.100	0.0956	96	80 - 120	2012-04-05
Xylene		1	mg/kg	0.300	0.292	97	80 - 120	2012-04-05

Standard (CCV-2)

QC Batch: 90033 | Date Analyzed: 2012-04-05 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.112	112	80 - 120	2012-04-05
Toluene		1	mg/kg	0.100	0.113	113	80 - 120	2012-04-05
Ethylbenzene		1	mg/kg	0.100	0.113	113	80 - 120	2012-04-05
Xylene		1	mg/kg	0.300	0.337	112	80 - 120	2012-04-05

Standard (CCV-1)

QC Batch: 90034 | Date Analyzed: 2012-04-05 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.11	111	80 - 120	2012-04-05

Standard (CCV-2)

QC Batch: 90034 | Date Analyzed: 2012-04-05 | Analyzed By: tc

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	2012-04-05

Standard (ICV-1)

QC Batch: 90054 | Date Analyzed: 2012-04-08 | Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-04-08

Standard (CCV-1)

QC Batch: 90054 | Date Analyzed: 2012-04-08 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.3	99	85 - 115	2012-04-08

Standard (CCV-1)

QC Batch: 90067 | Date Analyzed: 2012-04-06 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-06
Toluene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-06
Ethylbenzene		1	mg/kg	0.100	0.107	107	80 - 120	2012-04-06
Xylene		1	mg/kg	0.300	0.321	107	80 - 120	2012-04-06

Standard (CCV-2)

QC Batch: 90067 | Date Analyzed: 2012-04-06 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.115	115	80 - 120	2012-04-06
Toluene		1	mg/kg	0.100	0.113	113	80 - 120	2012-04-06
Ethylbenzene		1	mg/kg	0.100	0.113	113	80 - 120	2012-04-06
Xylene		1	mg/kg	0.300	0.336	112	80 - 120	2012-04-06

Standard (CCV-1)

QC Batch: 90068 Date Analyzed: 2012-04-06 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.14	114	80 - 120	2012-04-06

Standard (CCV-2)

QC Batch: 90068 Date Analyzed: 2012-04-06 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.06	106	80 - 120	2012-04-06

Appendix

Report Definitions

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

Laboratory Certifications

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

Standard Flags

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

Attachments

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

#1204020

Analysis Request of Chain of Custody Record

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

PAGE: 1 OF: 1

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640135 4

PROJECT NAME: Mesilla State #2 Eddy Co NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
393106	3/28		S		X	AH-1 0-1'	1				X		X	X	X										X				
107						1-1.5'								X											X				
108						2-2.5'																			X				
109						3-3.5'																			X				
100						4-4.5'																			X				
111						AH-2 0-1'								X	X										X				
112						1-1.5'								X	X										X				
113						2-2.5'								X	X										X				
114						~~3-3.5'~~ 2.5-3'								X	X										X				

RELINQUISHED BY: (Signature)	Date: 3/30/12 Time: 3:40 PM	RECEIVED BY: (Signature)	Date: 3/30/12 Time: 15:40
SAMPLED BY: (Print & Initial) TE	Date: 3-28-12 Time:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS	AIRBILL #: OTHER:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez	Results by:		
RECEIVING LABORATORY: Texas ADDRESS: CITY: Midland STATE: TX ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED: 90° intact	REMARKS: Run deeper samples if TPH exceeds 5,000 mg/kg. attn: Midland TC		

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

Run deeper sample if Benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg

Summary Report

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

Report Date: May 9, 2012

Work Order: 12042609

Project Location: Eddy Co., NM
Project Name: COG/Mesilla State #2
Project Number: 114-6401354

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
295424	BH-1 @ AH-2 0-1'	soil	2012-04-24	00:00	2012-04-26
295425	BH-1 @ AH-2 2-3'	soil	2012-04-24	00:00	2012-04-26
295426	BH-1 @ AH-2 4-5'	soil	2012-04-24	00:00	2012-04-26
295427	BH-1 @ AH-2 6-7'	soil	2012-04-24	00:00	2012-04-26
295428	BH-1 @ AH-2 9-10'	soil	2012-04-24	00:00	2012-04-26

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
295426 - BH-1 @ AH-2 4-5'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00 Qr,Qs

Sample: 295424 - BH-1 @ AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		3730	mg/Kg	4

Sample: 295425 - BH-1 @ AH-2 2-3'

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

Sample: 295426 - BH-1 @ AH-2 4-5'

continued ...

sample 295426 continued ...

Param	Flag	Result	Units	RL

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

Sample: 295427 - BH-1 @ AH-2 6-7'

Param	Flag	Result	Units	RL
Chloride		**169**	mg/Kg	4

Sample: 295428 - BH-1 @ AH-2 9-10'

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

TRACEANALYSIS, INC.

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

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: May 9, 2012

Work Order: 12042609

Project Location: Eddy Co., NM
Project Name: COG/Mesilla State #2
Project Number: 114-6401354

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
295424	BH-1 @ AH-2 0-1'	soil	2012-04-24	00:00	2012-04-26
295425	BH-1 @ AH-2 2-3'	soil	2012-04-24	00:00	2012-04-26
295426	BH-1 @ AH-2 4-5'	soil	2012-04-24	00:00	2012-04-26
295427	BH-1 @ AH-2 6-7'	soil	2012-04-24	00:00	2012-04-26
295428	BH-1 @ AH-2 9-10'	soil	2012-04-24	00:00	2012-04-26

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/Mesilla State #2 were received by TraceAnalysis, Inc. on 2012-04-26 and assigned to work order 12042609. Samples for work order 12042609 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	76942	2012-04-27 at 09:13	90687	2012-04-27 at 09:28
Chloride (Titration)	SM 4500-Cl B	77160	2012-05-04 at 09:09	90974	2012-05-08 at 10:43
Chloride (Titration)	SM 4500-Cl B	77160	2012-05-04 at 09:09	91024	2012-05-09 at 10:46
TPH DRO - NEW	S 8015 D	76960	2012-04-30 at 14:38	90712	2012-04-30 at 14:40
TPH GRO	S 8015 D	76942	2012-04-27 at 09:13	90689	2012-04-30 at 09:56

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 12042609 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: 295424 - BH-1 @ AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90974	Date Analyzed:	2012-05-08	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3730**	mg/Kg	10	4.00

Sample: 295425 - BH-1 @ AH-2 2-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90974	Date Analyzed:	2012-05-08	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

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

Sample: 295426 - BH-1 @ AH-2 4-5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90687	Date Analyzed:	2012-04-27	Analyzed By:	tc
Prep Batch:	76942	Sample Preparation:	2012-04-27	Prepared By:	tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.17	mg/Kg	1	2.00	108	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.09	mg/Kg	1	2.00	104	63.6 - 158.9

Sample: 295426 - BH-1 @ AH-2 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

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

Sample: 295426 - BH-1 @ AH-2 4-5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90712	Date Analyzed:	2012-04-30	Analyzed By:	DA
Prep Batch:	76960	Sample Preparation:	2012-04-30	Prepared By:	DA

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			148	mg/Kg	1	100	148	49.3 - 157.5

Sample: 295426 - BH-1 @ AH-2 4-5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90689	Date Analyzed:	2012-04-30	Analyzed By:	tc
Prep Batch:	76942	Sample Preparation:	2012-04-27	Prepared By:	tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.32	mg/Kg	1	2.00	116	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	45.1 - 162.2

Sample: 295427 - BH-1 @ AH-2 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**169**	mg/Kg	5	4.00

Sample: 295428 - BH-1 @ AH-2 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

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

Method Blanks

Method Blank (1) QC Batch: 90687

QC Batch: 90687 | Date Analyzed: 2012-04-27 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.83	mg/Kg	1	2.00	92	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.81	mg/Kg	1	2.00	90	55.9 - 112.4

Method Blank (1) QC Batch: 90689

QC Batch: 90689 | Date Analyzed: 2012-04-30 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.96	mg/Kg	1	2.00	98	78.6 - 121
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	55 - 120

Method Blank (1) QC Batch: 90712

QC Batch: 90712 | Date Analyzed: 2012-04-30 | Analyzed By: DA
Prep Batch: 76960 | QC Preparation: 2012-04-30 | Prepared By: DA

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			109	mg/Kg	1	100	109	52 - 140.8

Method Blank (1) QC Batch: 90974

QC Batch:	90974	Date Analyzed:	2012-05-08	Analyzed By:	AR
Prep Batch:	77160	QC Preparation:	2012-05-04	Prepared By:	AR

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

Method Blank (1) QC Batch: 91024

QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	QC Preparation:	2012-05-04	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 90687 | Date Analyzed: 2012-04-27 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.09	mg/Kg	1	2.00	<0.00470	104	86.5 - 124.9
Toluene		1	2.04	mg/Kg	1	2.00	<0.00980	102	84.7 - 122.5
Ethylbenzene		1	2.00	mg/Kg	1	2.00	<0.00500	100	79.4 - 118.9
Xylene		1	5.94	mg/Kg	1	6.00	<0.0170	99	79.5 - 118.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.11	mg/Kg	1	2.00	<0.00470	106	86.5 - 124.9	1	20
Toluene		1	2.06	mg/Kg	1	2.00	<0.00980	103	84.7 - 122.5	1	20
Ethylbenzene		1	2.02	mg/Kg	1	2.00	<0.00500	101	79.4 - 118.9	1	20
Xylene		1	6.02	mg/Kg	1	6.00	<0.0170	100	79.5 - 118.9	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.74	1.76	mg/Kg	1	2.00	87	88	73.9 - 127
4-Bromofluorobenzene (4-BFB)	1.74	1.81	mg/Kg	1	2.00	87	90	70.4 - 119.9

Laboratory Control Spike (LCS-1)

QC Batch: 90689 | Date Analyzed: 2012-04-30 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.4	mg/Kg	1	20.0	<1.22	87	68.3 - 105.7

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.2	mg/Kg	1	20.0	<1.22	76	68.3 - 105.7	14	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	1.75	mg/Kg	1	2.00	90	88	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.69	1.64	mg/Kg	1	2.00	84	82	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 90712 | Date Analyzed: 2012-04-30 | Analyzed By: DA
Prep Batch: 76960 | QC Preparation: 2012-04-30 | Prepared By: DA

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	278	mg/Kg	1	250	<14.5	111	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		1	280	mg/Kg	1	250	<14.5	112	62 - 128.3	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	122	118	mg/Kg	1	100	122	118	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 90974 | Date Analyzed: 2012-05-08 | Analyzed By: AR
Prep Batch: 77160 | QC Preparation: 2012-05-04 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2400	mg/Kg	1	2500	<3.85	96	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			2480	mg/Kg	1	2500	<3.85	99	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: 91024 | Date Analyzed: 2012-05-09 | Analyzed By: AR
Prep Batch: 77160 | QC Preparation: 2012-05-04 | Prepared By: AR

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2590	mg/Kg	1	2500	<3.85	104	85 - 115	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: 295646

QC Batch: 90687 | Date Analyzed: 2012-04-27 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.04	mg/Kg	1	2.00	<0.00470	102	69.3 - 159.2
Toluene		1	2.05	mg/Kg	1	2.00	<0.00980	102	68.7 - 157
Ethylbenzene		1	2.05	mg/Kg	1	2.00	<0.00500	102	71.6 - 158.2
Xylene		1	6.17	mg/Kg	1	6.00	<0.0170	103	70.8 - 159.8

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.95	mg/Kg	1	2.00	<0.00470	98	69.3 - 159.2	4	20
Toluene		1	1.96	mg/Kg	1	2.00	<0.00980	98	68.7 - 157	4	20
Ethylbenzene		1	2.01	mg/Kg	1	2.00	<0.00500	100	71.6 - 158.2	2	20
Xylene		1	6.03	mg/Kg	1	6.00	<0.0170	100	70.8 - 159.8	2	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	1.30	1.95	mg/Kg	1	2	65	98	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	1.27	1.86	mg/Kg	1	2	64	93	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 295426

QC Batch: 90689 | Date Analyzed: 2012-04-30 | Analyzed By: tc
Prep Batch: 76942 | QC Preparation: 2012-04-27 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.5	mg/Kg	1	20.0	<1.22	82	28.2 - 157.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qr,Qs	Qr,Qs	1	2.24	mg/Kg	1	20.0	<1.22	11	28.2 - 157.2	152	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)	2.21	2.00	mg/Kg	1	2	110	100	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	1.95	1.79	mg/Kg	1	2	98	90	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 295160

QC Batch: 90712 | Date Analyzed: 2012-04-30 | Analyzed By: DA
Prep Batch: 76960 | QC Preparation: 2012-04-30 | Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	323	mg/Kg	1	250	28.2	118	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		1	324	mg/Kg	1	250	28.2	118	45.5 - 127	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	130	130	mg/Kg	1	100	130	130	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 295425

QC Batch: 90974 | Date Analyzed: 2012-05-08 | Analyzed By: AR
Prep Batch: 77160 | QC Preparation: 2012-05-04 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2550	mg/Kg	5	2500	<19.2	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			2700	mg/Kg	5	2500	<19.2	108	79.4 - 120.6	6	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: 295439

QC Batch: 91024 | Date Analyzed: 2012-05-09 | Analyzed By: AR
Prep Batch: 77160 | QC Preparation: 2012-05-04 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3090	mg/Kg	5	2500	617	99	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			3150	mg/Kg	5	2500	617	101	79.4 - 120.6	2	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 90687 | Date Analyzed: 2012-04-27 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.108	108	80 - 120	2012-04-27
Toluene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-27
Ethylbenzene		1	mg/kg	0.100	0.103	103	80 - 120	2012-04-27
Xylene		1	mg/kg	0.300	0.309	103	80 - 120	2012-04-27

Standard (CCV-2)

QC Batch: 90687 | Date Analyzed: 2012-04-27 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.110	110	80 - 120	2012-04-27
Toluene		1	mg/kg	0.100	0.107	107	80 - 120	2012-04-27
Ethylbenzene		1	mg/kg	0.100	0.102	102	80 - 120	2012-04-27
Xylene		1	mg/kg	0.300	0.309	103	80 - 120	2012-04-27

Standard (CCV-1)

QC Batch: 90689 | Date Analyzed: 2012-04-30 | Analyzed By: tc

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	2012-04-30

Standard (CCV-2)

QC Batch: 90689 | Date Analyzed: 2012-04-30 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.01	101	80 - 120	2012-04-30

Standard (CCV-2)

QC Batch: 90712 Date Analyzed: 2012-04-30 Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	271	108	80 - 120	2012-04-30

Standard (CCV-3)

QC Batch: 90712 Date Analyzed: 2012-04-30 Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	280	112	80 - 120	2012-04-30

Standard (CCV-1)

QC Batch: 90974 Date Analyzed: 2012-05-08 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	2012-05-08

Standard (CCV-2)

QC Batch: 90974 Date Analyzed: 2012-05-08 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	2012-05-08

Standard (CCV-1)

QC Batch: 91024 Date Analyzed: 2012-05-09 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	2012-05-09

Standard (CCV-2)

QC Batch: 91024 Date Analyzed: 2012-05-09 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.3	99	85 - 115	2012-05-09

Appendix

Report Definitions

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

Laboratory Certifications

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

Standard Flags

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

Attachments

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

12042609

Analysis Request of Chain of Custody Record

PAGE: OF:

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.: 114-6401354

PROJECT NAME: Mesilla State #2

Eddy Co., NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
205424	4/24		S		X	BH-1 @ AH-2 0-1'	1				X														X				
425						2-3'	1				X														X				
426						4-5'	1				X		X	X											X				
427						6-7'	1				X														X				
428						9-10'	1				X														X				
429						14-15'	1				X																		
430						19-20'	1				X																		
431						24-25'	1				X																		
432						29-30'	1				X																		

RELINQUISHED BY: (Signature) Date: 4/26/12 Time: 11:30am

RECEIVED BY: (Signature) Date: 4/26/12 Time: 11:30

SAMPLED BY: (Print & Initial) Kim Date: 4/24/12 Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

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

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RECEIVING LABORATORY: TRACE

ADDRESS:

CITY: MIDLAND STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4.0° intact

REMARKS: If TPH >5,000 mg/kg - Run deeper samples
If BENZENE >10 mg/kg or Total BTEX >50 mg/kg - Run deeper samples

Attn: Trace Midland

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