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SITE INFORMATION

Report Type: Work Plan

General Site Information:						
Site:	Prohibition 12 Federal #7					
Company:	COG Operating LLC					
Section, Township and Range	Unit F	Sec. 12	T-22-S	R-32-E		
Lease Number:	API-30-025-37228					
County:	Lea County					
GPS:	32.40788° N			103.63483° W		
Surface Owner:	Federal					
Mineral Owner:	3351					
Directions:	From Hwy 62/180 and Hwy 176 , travel east on Hwy 176 6.5 miles, turn right on lease road 0.7 miles, stay right 1.6 miles, left 0.8 miles, left 6.2 miles, right 0.8 miles to location.					

Release Data:	
Date Released:	1/12/2012
Type Release:	Produced Water
Source of Contamination:	Fiberglass water tank load line ruptured
Fluid Released:	20 bbls
Fluids Recovered:	10 bbls

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

ECOPY: approved 4/11/12 w/conds
Geoff Leking
Env. Specialist
NMOCD-DIST 1

SITE INFORMATION

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Company:	COG Operating LLC					
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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

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HOBBS OCD

MAY 21 2012

RECEIVED

March 6, 2012

Mr. Geoffrey Leking
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Work Plan for the COG Operating LLC., Prohibition 12 Federal #7 Tank Battery, Unit F, Section 12, Township 22 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Prohibition 12 Federal #7 Tank Battery, Unit F, Section 12, Township 22 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.40788°, W 103.63483°. 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 January 12, 2012, and released approximately 20 barrels of produced water, due to the fiberglass tank rupturing at the load line. To alleviate the problem, COG will be replacing the fiberglass tank with a new tank. Approximately 10 barrels of standing fluids were recovered from the site. The spill was contained within the facility firewalls and impacted an area approximately 12'x 70'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed in Section 12. The USGS did report one well in Section 14 with a depth to groundwater of 382' below surface. According to the NMOCD groundwater map, the groundwater depth in this area is approximately 350' below surface. The groundwater data is shown in Appendix B.

Tetra Tech
1910 North Big Spring, Midland,TX 79705
Tel 432 682.4559 Fax 432 682 3946 www.tetratech.com

Regulatory

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

Soil Assessment and Analytical Results

On February 7, 2012, Tetra Tech personnel inspected and sampled the spill area. A total of three (3) auger holes (AH-1, AH-2 and AH-3) 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 reports 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, all of the submitted samples were below the RRAL for TPH and BTEX and a shallow chloride impact was detected in the soils. All of the auger holes showed elevated chlorides at 0-1', with concentrations of 7,180 mg/kg (AH-1), 6,870 mg/kg (AH-2) and 4,030 mg/kg (AH-3). The chloride concentrations significantly declined with depth at 1.0' to 2.0' below surface.

Work Plan

COG proposes to removal of impacted material as highlighted (green) in Table 1. Based on the groundwater depth (350'), the elevated chloride impact will be excavated at a depth of approximately 1.0' below surface. Once excavated, the soils will be transported to proper disposal and the excavation backfilled to grade.

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Due to proximity of oil and gas equipment, structures or lines, the impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable.

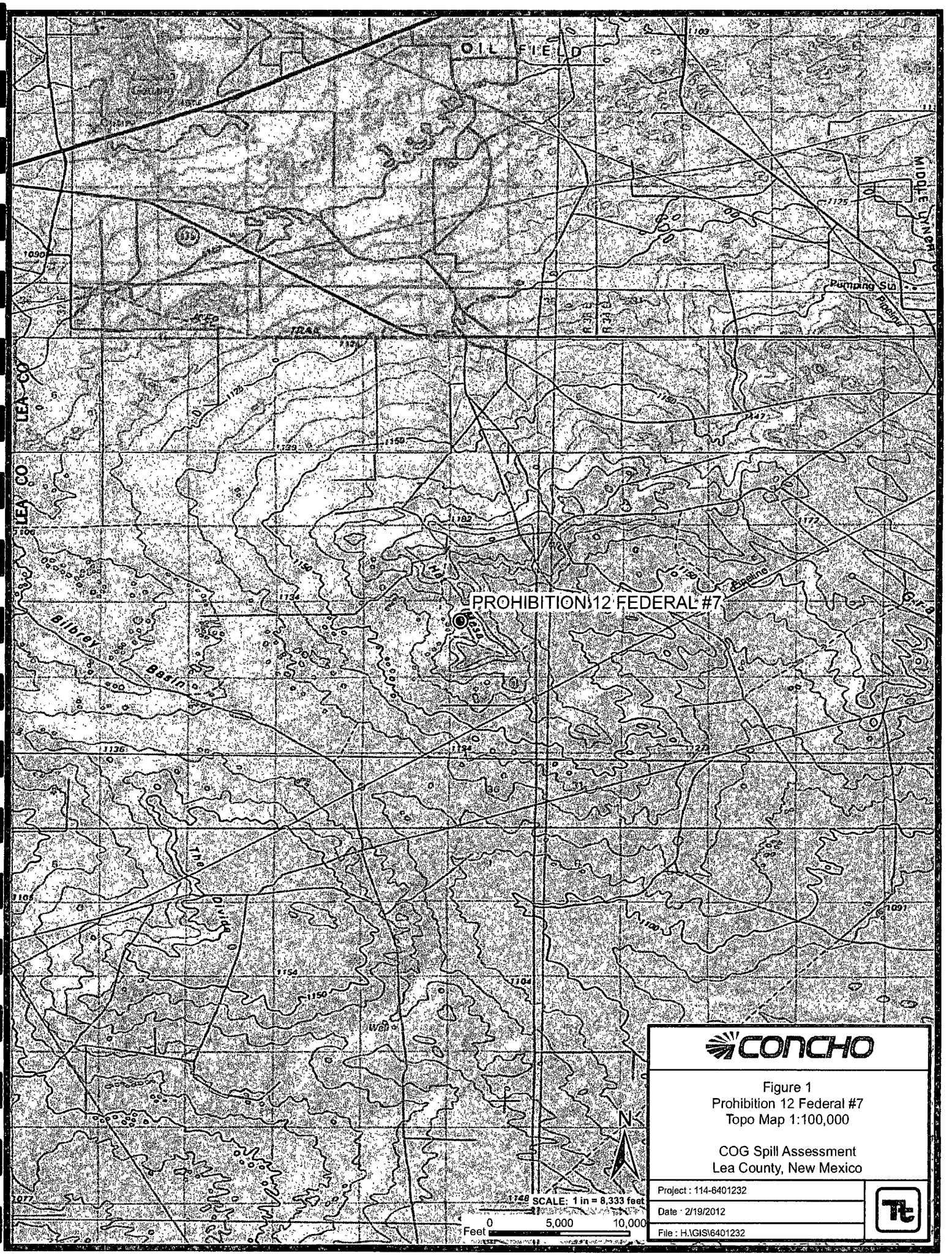
Upon completion, a final report will be submitted to the NMOCD. If you have any questions or require any additional information regarding this work plan proposal, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez
Project Manager

cc: Pat Ellis – COG
cc: Jim Amos – BLM

Figures



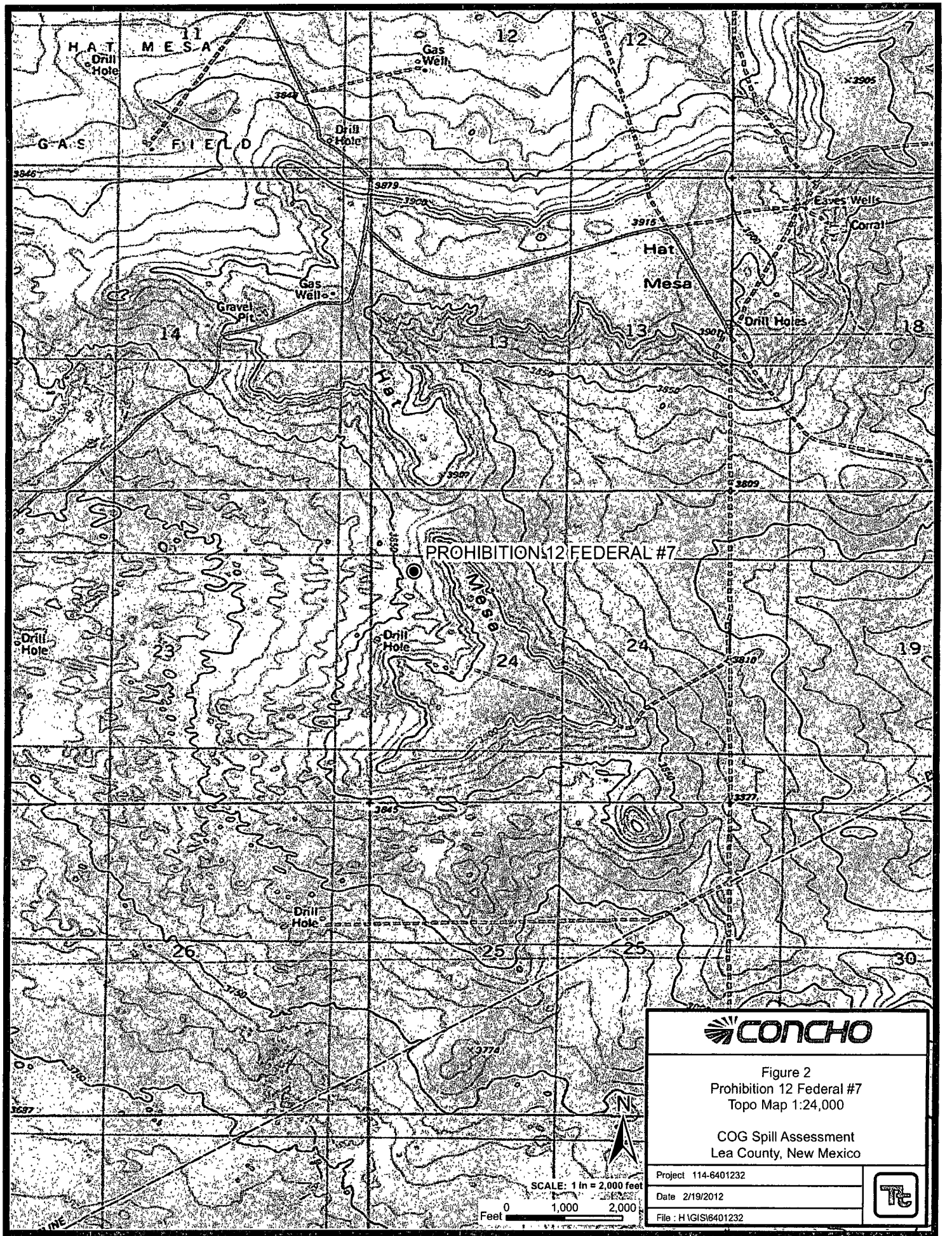
CONCHO

Figure 1
Prohibition 12 Federal #7
Topo Map 1:100,000

COG Spill Assessment
Lea County, New Mexico

Project : 114-6401232	
Date : 2/19/2012	
File : H:\GIS\6401232	

Drawn By: Isabel Marmolejo



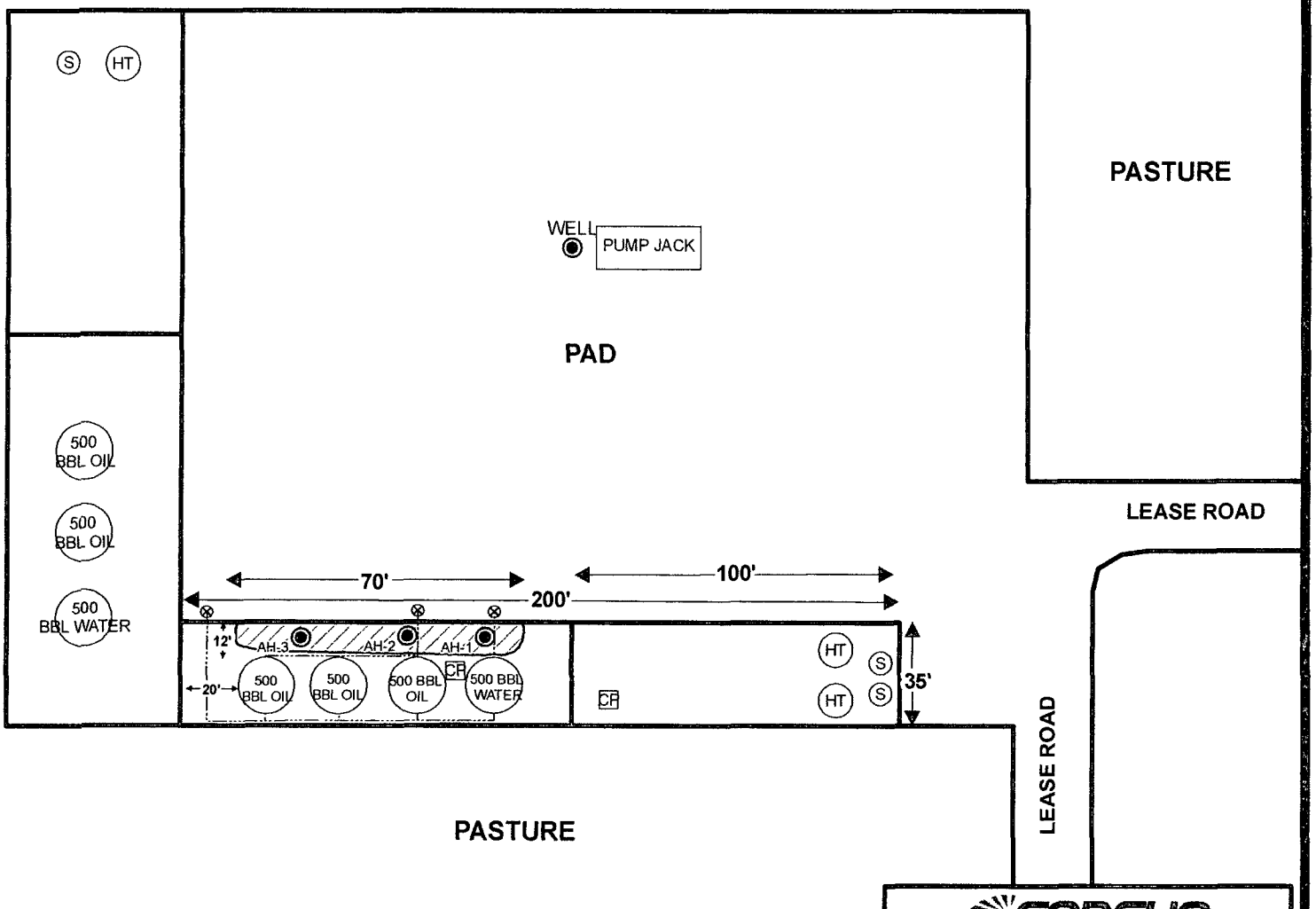
CONCHO

Figure 2
Prohibition 12 Federal #7
Topo Map 1:24,000

COG Spill Assessment
Lea County, New Mexico

Project	114-6401232
Date	2/19/2012
File :	H:\GIS\6401232

Drawn By Isabel Marmolejo



EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- WELL
- LINE
- SPILL AREA

N

SCALE: 1 IN = 59 FEET

Feet 0 25 50

CONCHO

Figure 3

Prohibition 12 Federal #7
Spill Assessment Map

COG Spill Assessment
Lea County, New Mexico

Project	114-6401232
Date	3/12/2012
File	H:\GIS\6401232

Drawn By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
Prohibition 12 Federal #7
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB 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	2/7/2012	0-1	"	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	7,180
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	1,990
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	<200
	"	3-3.5	"	X		-	-	-	-	-	-	-	-	<200
	"	4-4.5	"	X		-	-	-	-	-	-	-	-	<200
	"	5-5.5	"	X		-	-	-	-	-	-	-	-	<200
AH-2	2/7/2012	0-1	"	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	6,870
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	543
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	291
	"	3-3.5	"	X		-	-	-	-	-	-	-	-	<200
	"	4-4.5	"	X		-	-	-	-	-	-	-	-	<200
	"	5-5.5	"	X		-	-	-	-	-	-	-	-	<200
AH-3	2/7/2012	0-1	"	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	4,030
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	360

(-) Not Analyzed

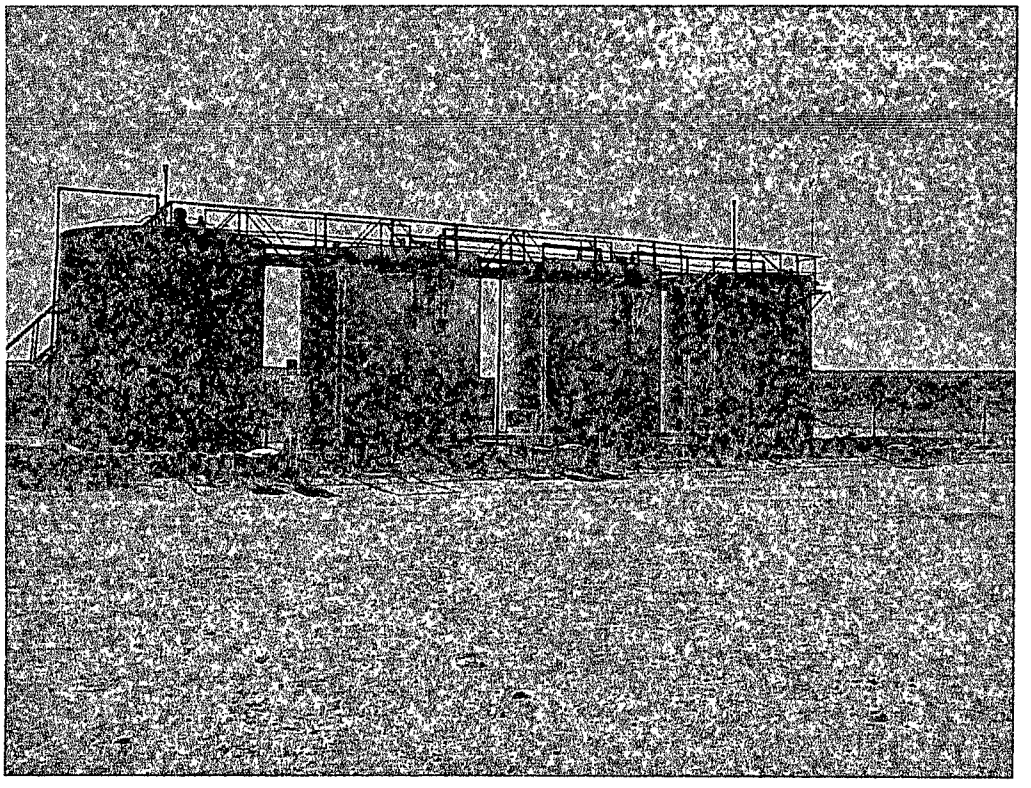
BEB Below Excavation Bottom

[ ] Proposed Excavation Depth

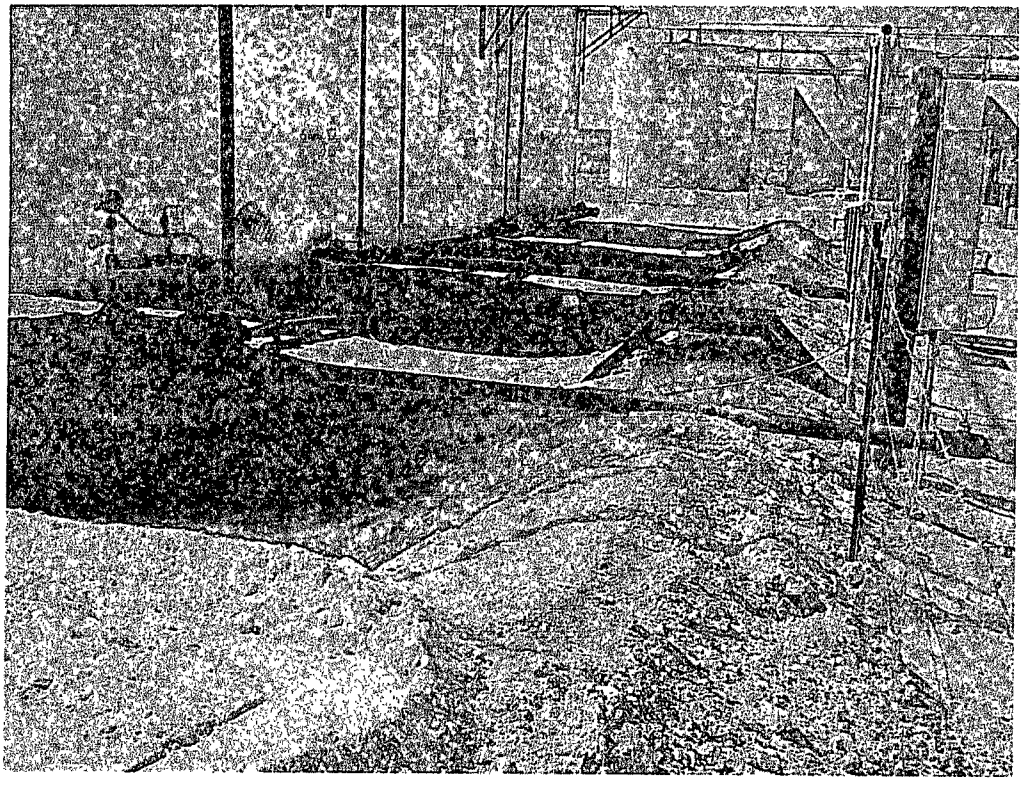
Photos

COG Operating LLC
Prohibition 12 Federal #7
Lea County, New Mexico

TETRA TECH



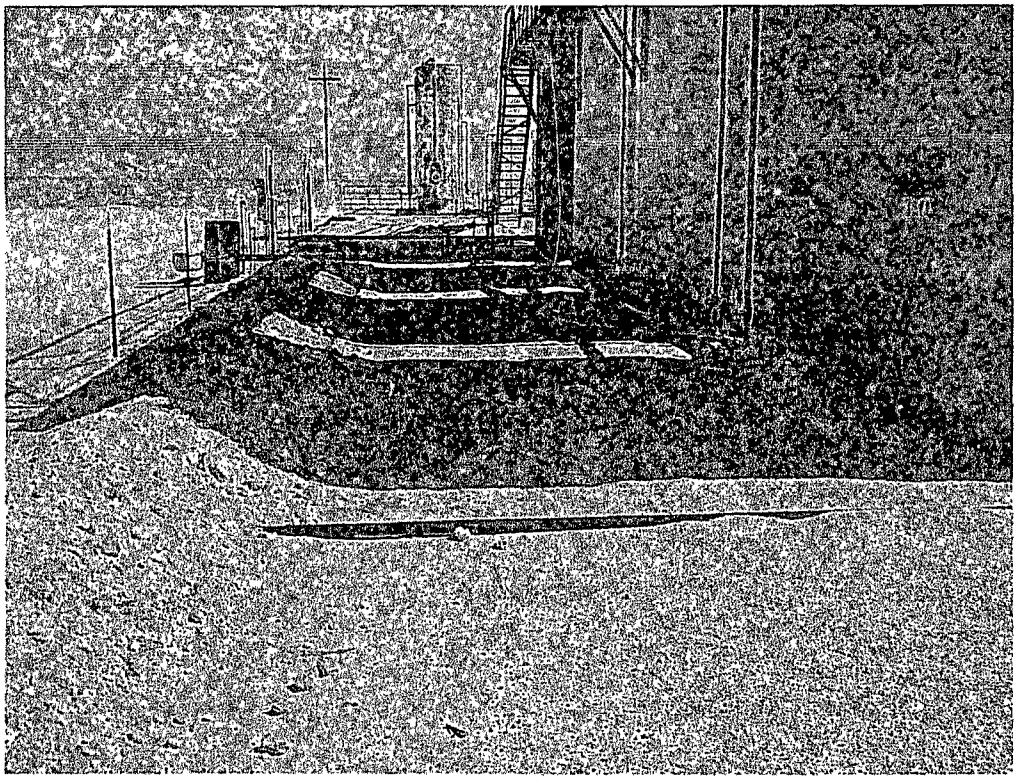
Prohibition 12 Federal #7 Tank Battery



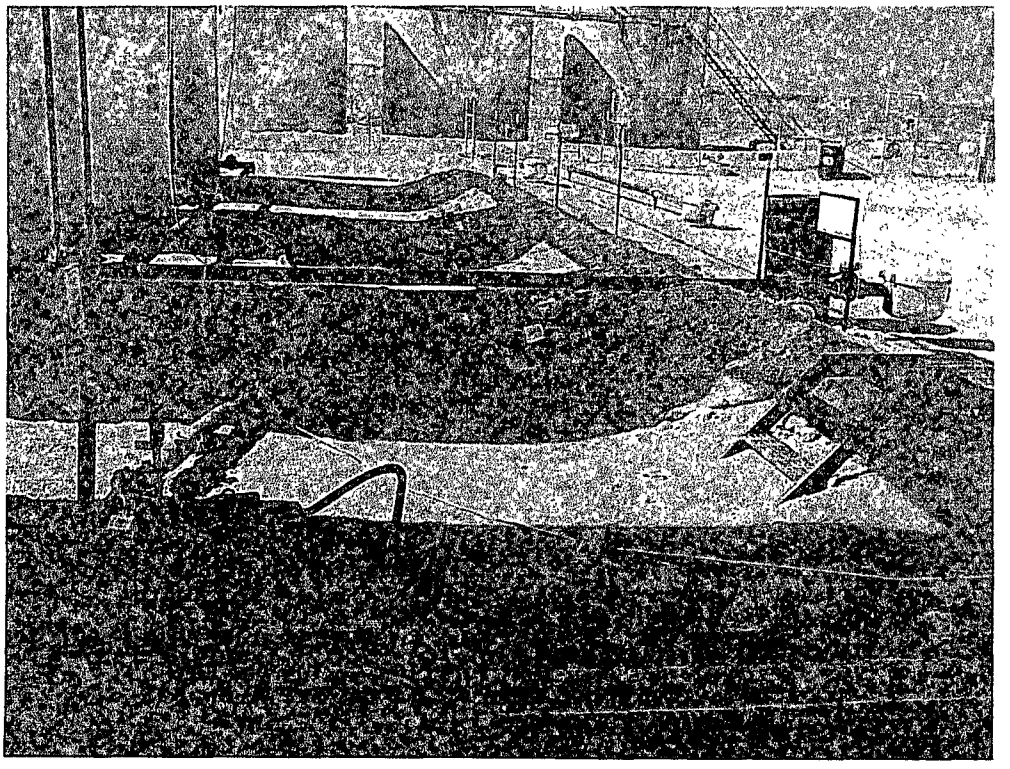
View west – front of tanks near AH-1

COG Operating LLC
Prohibition 12 Federal #7
Lea County, New Mexico

TETRA TECH



View east, front of tanks near AH-3



View west – front of tank battery near AH-1

Appendix A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Prohibition 12 Federal #7	Facility Type	Tank Battery

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-025-37228

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	12	22S	32E					Lea

Latitude 32 24.479 Longitude 103 38.091

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 20bbls	Volume Recovered 10bbls
Source of Release Water tank	Date and Hour of Occurrence 01/12/2012	Date and Hour of Discovery 01/12/2012 6:00 p.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 fiberglass water tank ruptured at load line due to increased pressure inside tank. The impaired fiberglass tank will be removed and a new fiberglass water tank will be replacing the ruptured one.

Describe Area Affected and Cleanup Action Taken.*

Initially 20bbls of produced water was released from the fiberglass water tank. We were able to recover 10bbls with a vacuum truck. All water was completely contained inside the walls of the tank battery. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present the NMOCD/BLM with a work plan 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: 01/25/2012 Phone: 432-212-2399	

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Prohibition 12 Federal #7
Lea County, New Mexico

21 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16 **630**	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

21 South 32 East

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

21 South 33 East

6	5	4	3	2 **79** **107**	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28 **179**	27	26	25
31	32	33	34	35	36

22 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16 **448**	15	14	13
19	20 **47**	21	22	23	24
30	29 **413**	28 **444**	27	26	25
31	32	33	34	35	36

22 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12 **SITE**
18	17	16	15	14 **382** **350**	13
19 **280**	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

22 South 33 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 **391**
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 South 31 East

6 **85**	5 **354**	4 **168**	3	2	1
7 **140**	8	9	10	11	12
18	17	16	15	14	13
19	20 **SITE**	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 South 32 East

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

23 South 33 East

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

New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

SITE Location

Summary Report

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

Report Date: February 15, 2012

Work Order: 12021026

Project Location: Lea Co., NM
Project Name: COG/Prohibition 12 Fed #7
Project Number: 114-6401232

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
288873	AH-1 0-1'	soil	2012-02-07	00:00	2012-02-10
288874	AH-1 1-1.5'	soil	2012-02-07	00:00	2012-02-10
288875	AH-1 2-2.5'	soil	2012-02-07	00:00	2012-02-10
288876	AH-1 3-3.5'	soil	2012-02-07	00:00	2012-02-10
288877	AH-1 4-4.5'	soil	2012-02-07	00:00	2012-02-10
288878	AH-1 5-5.5'	soil	2012-02-07	00:00	2012-02-10
288879	AH-2 0-1'	soil	2012-02-07	00:00	2012-02-10
288880	AH-2 1-1.5'	soil	2012-02-07	00:00	2012-02-10
288881	AH-2 2-2.5'	soil	2012-02-07	00:00	2012-02-10
288882	AH-2 3-3.5'	soil	2012-02-07	00:00	2012-02-10
288883	AH-2 4-4.5'	soil	2012-02-07	00:00	2012-02-10
288884	AH-2 5-5.5'	soil	2012-02-07	00:00	2012-02-10
288885	AH-3 0-1'	soil	2012-02-07	00:00	2012-02-10
288886	AH-3 1-1.5'	soil	2012-02-07	00:00	2012-02-10

	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)
288873 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
288879 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
288885 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 288873 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**7180**	mg/Kg	4

Sample: 288874 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**1990**	mg/Kg	4

Sample: 288875 - AH-1 2-2.5'

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

Sample: 288876 - AH-1 3-3.5'

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

Sample: 288877 - AH-1 4-4.5'

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

Sample: 288878 - AH-1 5-5.5'

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

Sample: 288879 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**6870**	mg/Kg	4

Sample: 288880 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**543**	mg/Kg	4

Sample: 288881 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**291**	mg/Kg	4

Sample: 288882 - AH-2 3-3.5'

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

Sample: 288883 - AH-2 4-4.5'

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

Sample: 288884 - AH-2 5-5.5'

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

Sample: 288885 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**4030**	mg/Kg	4

Sample: 288886 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**360**	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 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft Worth, Texas 76132 817•201•5260
E-Mail: lab@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: February 15, 2012

Work Order: 12021026

Project Location: Lea Co., NM
Project Name: COG/Prohibition 12 Fed #7
Project Number: 114-6401232

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
288873	AH-1 0-1'	soil	2012-02-07	00:00	2012-02-10
288874	AH-1 1-1.5'	soil	2012-02-07	00:00	2012-02-10
288875	AH-1 2-2.5'	soil	2012-02-07	00:00	2012-02-10
288876	AH-1 3-3.5'	soil	2012-02-07	00:00	2012-02-10
288877	AH-1 4-4.5'	soil	2012-02-07	00:00	2012-02-10
288878	AH-1 5-5.5'	soil	2012-02-07	00:00	2012-02-10
288879	AH-2 0-1'	soil	2012-02-07	00:00	2012-02-10
288880	AH-2 1-1.5'	soil	2012-02-07	00:00	2012-02-10
288881	AH-2 2-2.5'	soil	2012-02-07	00:00	2012-02-10
288882	AH-2 3-3.5'	soil	2012-02-07	00:00	2012-02-10
288883	AH-2 4-4.5'	soil	2012-02-07	00:00	2012-02-10
288884	AH-2 5-5.5'	soil	2012-02-07	00:00	2012-02-10
288885	AH-3 0-1'	soil	2012-02-07	00:00	2012-02-10
288886	AH-3 1-1.5'	soil	2012-02-07	00:00	2012-02-10

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

This report consists of a total of 24 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

Report Contents

Case Narrative

Samples for project COG/Prohibition 12 Fed #7 were received by TraceAnalysis, Inc. on 2012-02-10 and assigned to work order 12021026. Samples for work order 12021026 were received intact at a temperature of 5.9 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	75170	2012-02-13 at 08:45	88547	2012-02-13 at 14:52
Chloride (Titration)	SM 4500-Cl B	75143	2012-02-10 at 13:39	88568	2012-02-14 at 14:02
Chloride (Titration)	SM 4500-Cl B	75143	2012-02-10 at 13:39	88569	2012-02-14 at 14:03
TPH DRO - NEW	S 8015 D	75146	2012-02-13 at 15:03	88517	2012-02-13 at 15:05
TPH GRO	S 8015 D	75170	2012-02-13 at 08:45	88543	2012-02-13 at 14:52

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 12021026 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: 288873 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	88547	Date Analyzed:	2012-02-13	Analyzed By:	tc
Prep Batch:	75170	Sample Preparation:	2012-02-13	Prepared By:	tc

Parameter	Flag	Cert	Result	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)			2.26	mg/Kg	1	2.00	113	75 - 135.4
4-Bromofluorobenzene (4-BFB)			1.73	mg/Kg	1	2.00	86	63.6 - 158.9

Sample: 288873 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88568	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
Chloride				**7180**	mg/Kg	100	4.00

Sample: 288873 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	88517	Date Analyzed:	2012-02-13	Analyzed By:	DA
Prep Batch:	75146	Sample Preparation:	2012-02-13	Prepared By:	DA

Parameter	Flag	Cert	Result	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			114	mg/Kg	1	100	114	49 3 - 157.5

Sample: 288873 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	88543	Date Analyzed:	2012-02-13	Analyzed By:	tc
Prep Batch:	75170	Sample Preparation:	2012-02-13	Prepared By:	tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.86	mg/Kg	1	2.00	93	45.1 - 162.2

Sample: 288874 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88568	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1990**	mg/Kg	100	4.00

Sample: 288875 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88568	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

continued ...

sample 288875 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

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

Sample: 288876 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88568	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

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

Sample: 288877 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88569	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

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

Sample: 288878 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88569	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

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

Sample: 288879 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	88547	Date Analyzed:	2012-02-13	Analyzed By:	tc
Prep Batch:	75170	Sample Preparation:	2012-02-13	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)			2.67	mg/Kg	1	2.00	134	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.17	mg/Kg	1	2.00	108	63.6 - 158.9

Sample: 288879 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88569	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6870**	mg/Kg	100	4.00

Sample: 288879 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	88517	Date Analyzed:	2012-02-13	Analyzed By:	DA
Prep Batch:	75146	Sample Preparation:	2012-02-13	Prepared By:	DA

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	49.3 - 157.5

Sample: 288879 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	88543	Date Analyzed:	2012-02-13	Analyzed By:	tc
Prep Batch:	75170	Sample Preparation:	2012-02-13	Prepared By:	tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.50	mg/Kg	1	2.00	125	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.31	mg/Kg	1	2.00	116	45.1 - 162.2

Sample: 288880 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88569	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**543**	mg/Kg	50	4.00

Sample: 288881 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88569	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**291**	mg/Kg	50	4.00

Sample: 288882 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88569	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

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

Sample: 288883 - AH-2 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88569	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

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

Sample: 288884 - AH-2 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88569	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

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

Sample: 288885 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	88547	Date Analyzed:	2012-02-13	Analyzed By:	tc
Prep Batch:	75170	Sample Preparation:	2012-02-13	Prepared By:	tc

Parameter	Flag	Cert	Result	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)			2.33	mg/Kg	1	2.00	116	75 - 135.4
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	63.6 - 158.9

Sample: 288885 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88569	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4030**	mg/Kg	100	4.00

Sample: 288885 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	88517	Date Analyzed:	2012-02-13	Analyzed By:	DA
Prep Batch:	75146	Sample Preparation:	2012-02-13	Prepared By:	DA

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	49.3 - 157.5

Sample: 288885 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	88543	Date Analyzed:	2012-02-13	Analyzed By:	tc
Prep Batch:	75170	Sample Preparation:	2012-02-13	Prepared By:	tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.05	mg/Kg	1	2.00	102	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	45.1 - 162.2

Sample: 288886 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88569	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**360**	mg/Kg	50	4.00

Method Blanks

Method Blank (1) QC Batch: 88517

QC Batch:	88517	Date Analyzed:	2012-02-13	Analyzed By:	DA
Prep Batch:	75146	QC Preparation:	2012-02-13	Prepared By:	DA

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	39.1	mg/Kg	50

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

Method Blank (1) QC Batch: 88543

QC Batch:	88543	Date Analyzed:	2012-02-13	Analyzed By:	tc
Prep Batch:	75170	QC Preparation:	2012-02-13	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)			2.08	mg/Kg	1	2.00	104	78.6 - 109
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	58 - 100

Method Blank (1) QC Batch: 88547

QC Batch:	88547	Date Analyzed:	2012-02-13	Analyzed By:	tc
Prep Batch:	75170	QC Preparation:	2012-02-13	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

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
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)			2.35	mg/Kg	1	2.00	118	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	55.9 - 112.4

Method Blank (1) QC Batch: 88568

QC Batch:	88568	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	QC Preparation:	2012-02-10	Prepared By:	AR

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

Method Blank (1) QC Batch: 88569

QC Batch:	88569	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	QC Preparation:	2012-02-10	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: 88517 | Date Analyzed: 2012-02-13 | Analyzed By: DA
Prep Batch: 75146 | QC Preparation: 2012-02-13 | Prepared By: DA

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	244	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	236	mg/Kg	1	250	<14.5	94	62 - 128.3	3	20

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

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

Laboratory Control Spike (LCS-1)

QC Batch: 88543 | Date Analyzed: 2012-02-13 | Analyzed By: tc
Prep Batch: 75170 | QC Preparation: 2012-02-13 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.7	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	18.6	mg/Kg	1	20.0	<1.22	93	68.3 - 105.7	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.12	2.01	mg/Kg	1	2.00	106	100	80 - 111.2
4-Bromofluorobenzene (4-BFB)	2.10	1.96	mg/Kg	1	2.00	105	98	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 88547 | Date Analyzed: 2012-02-13 | Analyzed By: tc
Prep Batch: 75170 | QC Preparation: 2012-02-13 | 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	1.99	mg/Kg	1	2.00	<0.00980	100	84.7 - 122.5
Ethylbenzene		1	1.98	mg/Kg	1	2.00	<0.00500	99	79.4 - 118.9
Xylene		1	5.80	mg/Kg	1	6.00	<0.0170	97	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	9	20
Toluene		1	2.20	mg/Kg	1	2.00	<0.00980	110	84.7 - 122.5	10	20
Ethylbenzene		1	2.15	mg/Kg	1	2.00	<0.00500	108	79.4 - 118.9	8	20
Xylene		1	6.37	mg/Kg	1	6.00	<0.0170	106	79.5 - 118.9	9	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.32	2.38	mg/Kg	1	2.00	116	119	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.05	2.08	mg/Kg	1	2.00	102	104	70.4 - 119

Laboratory Control Spike (LCS-1)

QC Batch: 88568 | Date Analyzed: 2012-02-14 | Analyzed By: AR
Prep Batch: 75143 | QC Preparation: 2012-02-10 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			93.3	mg/Kg	1	100	<3.85	93	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			105	mg/Kg	1	100	<3.85	105	85 - 115	12	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: 88569 | Date Analyzed: 2012-02-14 | Analyzed By: AR
Prep Batch: 75143 | QC Preparation: 2012-02-10 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			97.1	mg/Kg	1	100	<3.85	97	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			105	mg/Kg	1	100	<3.85	105	85 - 115	8	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: 288885

QC Batch: 88517 | Date Analyzed: 2012-02-13 | Analyzed By: DA
Prep Batch: 75146 | QC Preparation: 2012-02-13 | Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	254	mg/Kg	1	250	<14.5	102	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	232	mg/Kg	1	250	<14.5	93	45.5 - 127	9	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	104	92.1	mg/Kg	1	100	104	92	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 288885

QC Batch: 88543 | Date Analyzed: 2012-02-13 | Analyzed By: tc
Prep Batch: 75170 | QC Preparation: 2012-02-13 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.2	mg/Kg	1	20.0	<1.22	68	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	16.1	mg/Kg	1	20.0	<1.22	77	28.2 - 157.2	12	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.36	2.60	mg/Kg	1	2	118	130	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	2.28	2.51	mg/Kg	1	2	114	126	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 288887

QC Batch: 88547 | Date Analyzed: 2012-02-13 | Analyzed By: tc
Prep Batch: 75170 | QC Preparation: 2012-02-13 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.93	mg/Kg	1	2.00	<0.00470	96	69.3 - 159.2
Toluene		1	2.04	mg/Kg	1	2.00	<0.00980	102	68.7 - 157
Ethylbenzene		1	2.13	mg/Kg	1	2.00	<0.00500	106	71.6 - 158.2
Xylene		1	6.25	mg/Kg	1	6.00	<0.0170	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	1.87	mg/Kg	1	2.00	<0.00470	94	69.3 - 159.2	3	20
Toluene		1	1.97	mg/Kg	1	2.00	<0.00980	98	68.7 - 157	4	20
Ethylbenzene		1	2.10	mg/Kg	1	2.00	<0.00500	105	71.6 - 158.2	1	20
Xylene		1	6.12	mg/Kg	1	6.00	<0.0170	102	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)	2.51	2.56	mg/Kg	1	2	126	128	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	2.10	2.08	mg/Kg	1	2	105	104	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 288876

QC Batch: 88568 | Date Analyzed: 2012-02-14 | Analyzed By: AR
Prep Batch: 75143 | QC Preparation: 2012-02-10 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			9890	mg/Kg	100	10000	<385	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			10600	mg/Kg	100	10000	<385	106	79.4 - 120.6	7	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: 288886

QC Batch: 88569 | Date Analyzed: 2012-02-14 | Analyzed By: AR
Prep Batch: 75143 | QC Preparation: 2012-02-10 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			10800	mg/Kg	100	10000	<385	104	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			11700	mg/Kg	100	10000	<385	113	79.4 - 120.6	8	20

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

Calibration Standards

Standard (CCV-2)

QC Batch: 88517 | Date Analyzed: 2012-02-13 | 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	2012-02-13

Standard (CCV-3)

QC Batch: 88517 | Date Analyzed: 2012-02-13 | 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	260	104	80 - 120	2012-02-13

Standard (CCV-2)

QC Batch: 88543 | Date Analyzed: 2012-02-13 | 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	1.07	107	80 - 120	2012-02-13

Standard (CCV-3)

QC Batch: 88543 | Date Analyzed: 2012-02-13 | 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	2012-02-13

Standard (CCV-2)

QC Batch: 88547 | Date Analyzed: 2012-02-13 | 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	0.102	102	80 - 120	2012-02-13
Toluene		1	mg/kg	0.100	0.103	103	80 - 120	2012-02-13
Ethylbenzene		1	mg/kg	0.100	0.0991	99	80 - 120	2012-02-13
Xylene		1	mg/kg	0.300	0.289	96	80 - 120	2012-02-13

Standard (CCV-3)

QC Batch: 88547 | Date Analyzed: 2012-02-13 | 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	2012-02-13
Toluene		1	mg/kg	0.100	0.106	106	80 - 120	2012-02-13
Ethylbenzene		1	mg/kg	0.100	0.102	102	80 - 120	2012-02-13
Xylene		1	mg/kg	0.300	0.304	101	80 - 120	2012-02-13

Standard (ICV-1)

QC Batch: 88568 | Date Analyzed: 2012-02-14 | 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	100	100	85 - 115	2012-02-14

Standard (CCV-1)

QC Batch: 88568 | Date Analyzed: 2012-02-14 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.7	100	85 - 115	2012-02-14

Standard (ICV-1)

QC Batch: 88569 | Date Analyzed: 2012-02-14 | 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	99.0	99	85 - 115	2012-02-14

Standard (CCV-1)

QC Batch: 88569 | Date Analyzed: 2012-02-14 | 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	2012-02-14

Appendix

Report Definitions

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

Laboratory Certifications

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

#12021086

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: 2 OF: 2

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640-232

PROJECT NAME: COG / Prohibition 12 Fed #7
Lea 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
883	2/1		S		X	AH-2 4'-4.5'	1				X													X				
884						5'-5.5'																						
885						AH-3 0-1'							X	X														
886						1'-1.5'																						

RELINQUISHED BY: (Signature) — Date: 2/10/12 Time: 1400 — RECEIVED BY: (Signature) — Date: — Time:

SAMPLED BY: (Print & Initial) JT / RS — Date: 2/1/12 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: 2-10-12 TIME: 1400

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.9° C intact

REMARKS:

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

#1202102246

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: 2

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-4401232

PROJECT NAME: COG / Prohibition 12 Fed #7 Lea Co, NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
288873	2/1		S		X	AH-1 0-1'	—				X		X	X											X				
874						1'-1.5'																							
875						2'-2.5'																							
876						3'-3.5'																							
877						4'-4.5'																							
878						5'-5.5'																							
879						AH-2 0-1'							X	X															
880						1'-1.5'																							
881						2'-2.5'																							
882						3'-3.5'																							

RELINQUISHED BY: (Signature)	Date: 2/10/12 Time: 1400	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RECEIVING LABORATORY: Trace		RECEIVED BY: (Signature)	
ADDRESS: CITY: Midland STATE: TX ZIP:			
CONTACT: PHONE:		DATE: 2-10-12	TIME: 1400

SAMPLED BY: (Print & Initial) JT/RS Date: 2/9/12 Time:

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.9°C intact

REMARKS: If total TPH exceeds 5,000 mg/kg run deeper samples / If BTEX exceeds 50 mg/kg or Benzene exceeds 10 mg/kg run deeper samples

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