

SITE INFORMATION

REPORT TYPE: **RP #2373** **Assessment & Closure Report**

Report Date: March 1, 2010

General Site Information:

Site:	Pearsall AX #5		
Company:	COG Operating LLC		
Section, Township and Range	Section 33	Township 17S	Range 32E
Unit Letter:	K		
Lease Number:	30-025-36361		
County:	Lea County		
GPS:	N32.47311° W103.46466°		
Surface Owner:	BLM		
Mineral Owner:	Unknown		
Directions:	From the intersection of Hwy 529 and Hwy 82 travel 6 miles on 529 and turn right onto lease road. Travel 0.2 miles on lease road to a fourway and turn left and travel 0.15 miles then turn left on a Y and travel 1.0 miles to site.		

Release Data:

Date Released:	12/8/2009
Type Release:	Oil
Source of Contamination:	Swedge on a circulating pump
Fluid Released:	260 bbls
Fluids Recovered:	none recovered

Official Communication:

Name:	Pat Ellis	Ike Tavarez
Company:	COG Operating LLC	Tetra Tech, Inc.
Address:	550 W. Texas, Suite 1300	1910 N. Big Spring
P.O. Box		
City:	Midland, Texas 79701	Midland, Texas 79705
Phone number:	(432) 686-3087	(432) 682- 4559
Email:	PEllis@conchoresources.com	ike.tavarez@tetrattech.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	approximately 70 feet
>100 ft.	0	
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	None
Water Source >1,000 ft., Private >200 ft.	0	
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	None
200 ft - 1,000 ft.	10	None
>1,000 ft.	0	
Total Ranking Score:		10

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



TETRA TECH

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MAR 31 2010

HOBBSOCD

March 1, 2010

Mr. Larry Johnson
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Dr.
Hobbs, New Mexico 88240

Re: Assessment and Closure Report for the COG Operating LLC, Pearsall AX Tank Battery, Unit K, Section 33, Township 17 South, Range 32 East, Lea County, New Mexico. (1RP #2373)

Mr. Johnson:

Tetra Tech, Inc. was contacted by COG Operating LLC, (COG) to assess a spill at the Pearsall AX Tank Battery, located in Unit K, Section 33, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32° 47.306', W 103° 46.466'. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak occurred and was discovered on December 8, 2009. Approximately 260 barrels of oil were released, due to a defective swedge on a circulating pump. Of the 260 barrels of oil release, no oil was recovered. Majority of the spill migrated off the pad covering an area measuring approximately 35 to 50 feet by 400 feet to the south of the pad. The initial and final C-141 is enclosed in Appendix C.

$$42.5 \times 400 = 17,000 \text{ sq ft}$$

Groundwater

No wells were located within Section 33 of Township 17 South Range 32 East. However, according to the New Mexico State Engineers Well Reports, one water well was located approximately a mile south of the site in Section 4, Township 18 South and Range 32 East. According to the database, groundwater at this location is approximately 65 feet below ground surface (bgs). Copies of the groundwater depth information found for this site is included in Appendix A.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum

Tetra Tech

1910 North Big Spring, Midland, TX 79705

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hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg.

Soil Remediation

Part of an emergency response and containment of the spill, COG excavated 1.0' of impacted soils at the site. A total of 764 cubic yards were transported offsite to CRI for proper disposal.

Soil Assessment and Results

On January 4 and 5, 2010, Tetra Tech personnel inspected and sampled the spill area. Once the soil was excavated, a total of thirteen (13) auger holes (AH-1 through AH-13) were installed using a stainless steel hand auger to assess the impacted areas. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. All sampling results are summarized in Table 1. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The spill area and the auger hole locations are shown on Figure 3.

Referring to Table 1, all of the samples analyzed were below the RRAL for BTEX and TPH. In addition, the chlorides were all below the reporting limit.

Conclusion and Proposed Work Plan

Since the site has no BTEX, TPH, or chlorides above their respective RRAL, COG proposes to backfill the excavated area. The Final C-141 is enclosed in Appendix C. If you require any additional information or comments concerning this closure report, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH, Inc.



Ike Tavarez, P.G.
Sr. Project Manager

cc: Trishia Badbear – BLM
Pat Ellis – COG

FIGURES

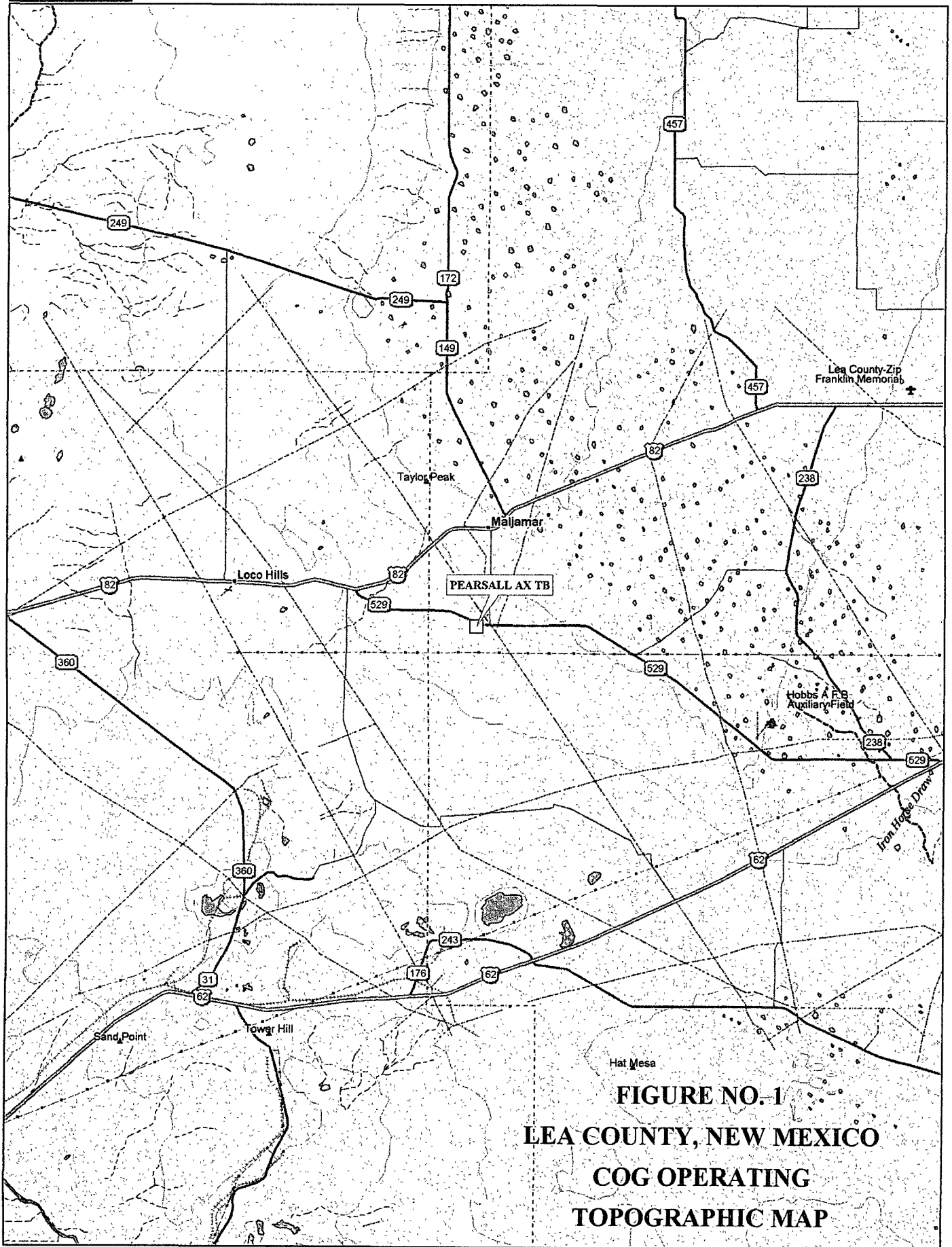
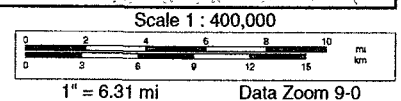


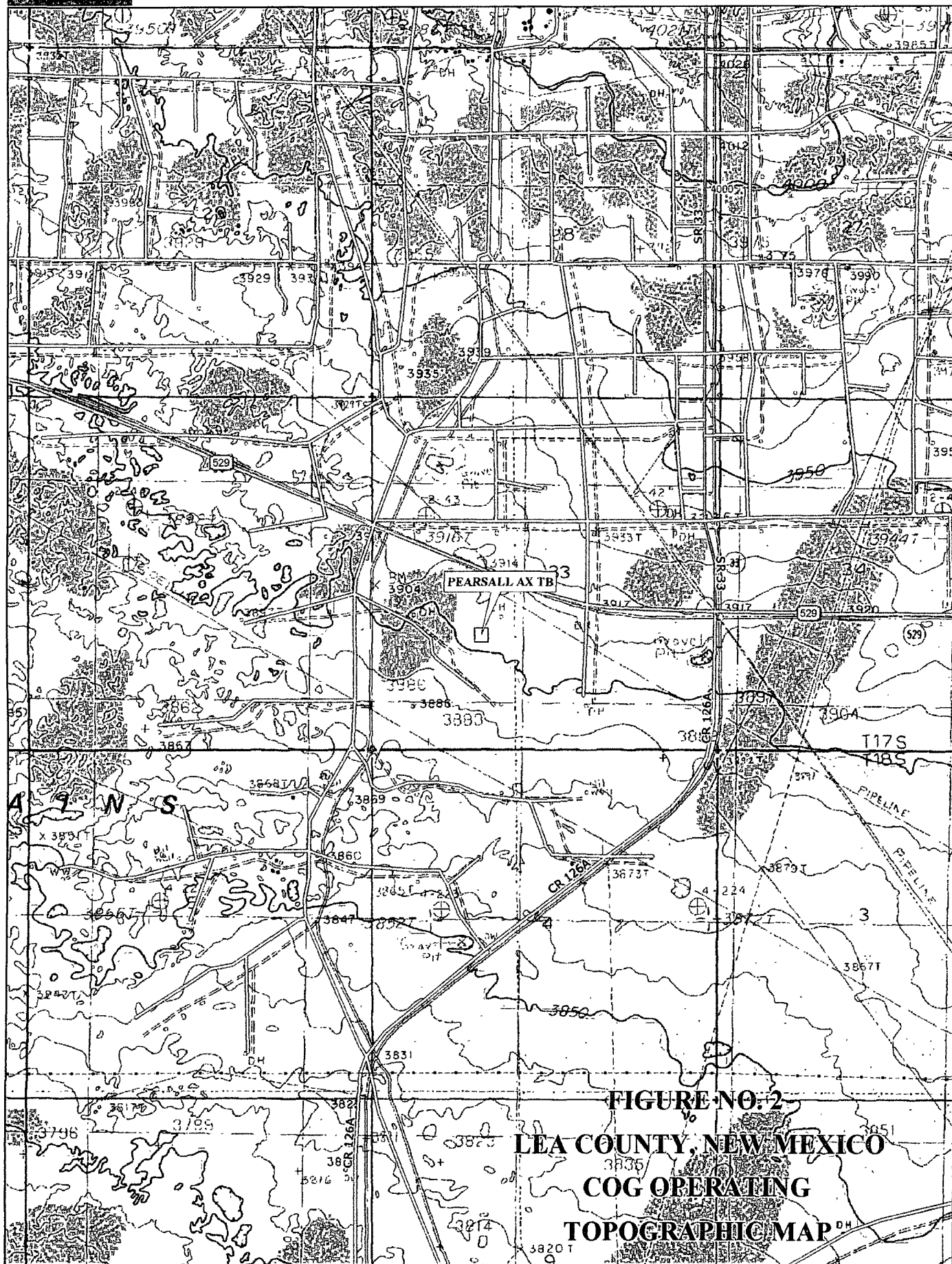
FIGURE NO. 1
LEA COUNTY, NEW MEXICO
COG OPERATING
TOPOGRAPHIC MAP

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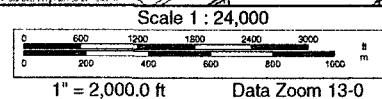


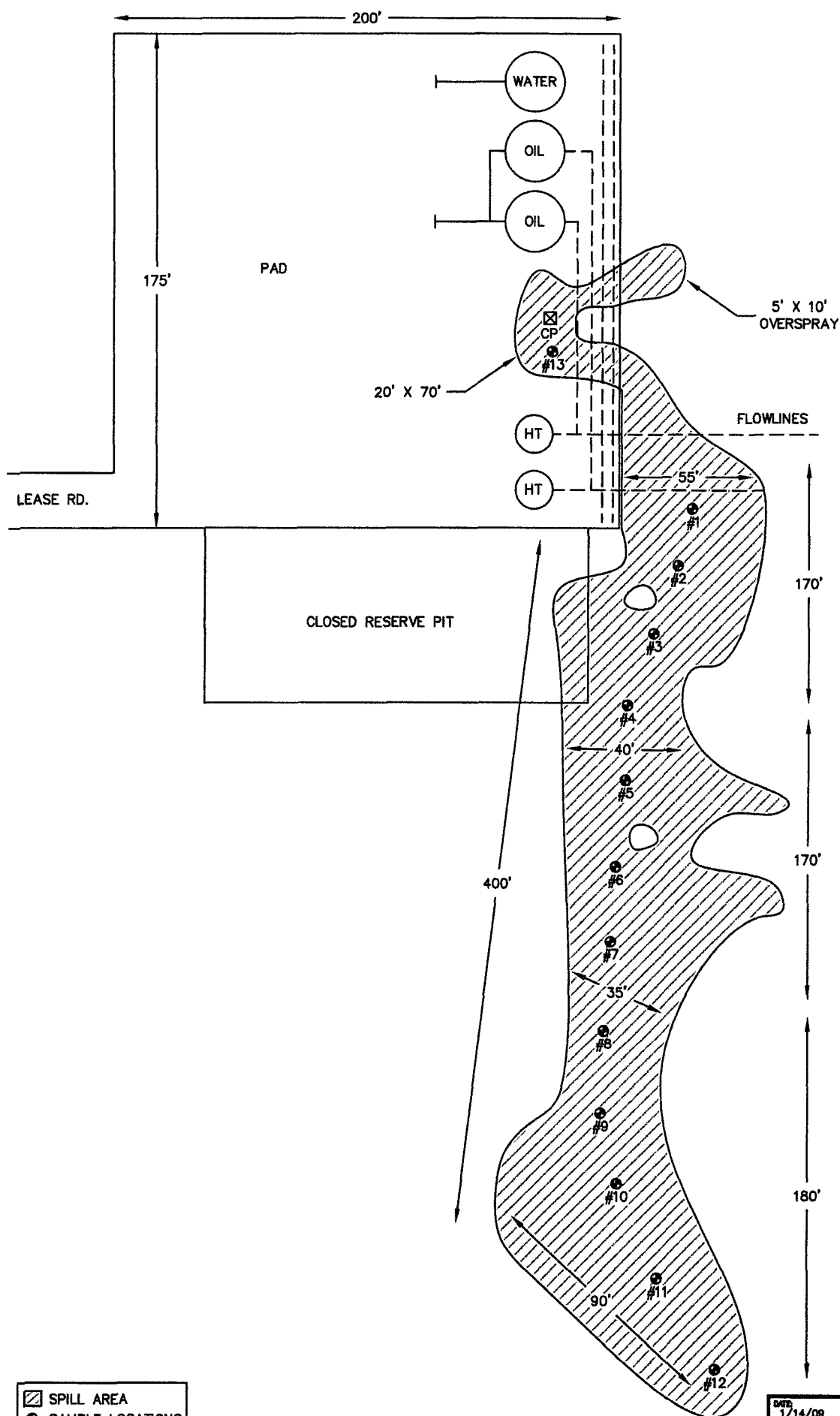


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[Hatched Box] SPILL AREA
 [Dot] SAMPLE LOCATIONS

NOT TO SCALE

DATE: 1/14/09
 DRAWN BY: JJ
 FIELD NO. 0000000000
 PROJECT NO. 713 TB

FIGURE NO. 3	
LEA COUNTY, NEW MEXICO	
COG OPERATING LLC	
PEARSALL AX TB	
TETRA TECH, INC. MIDLAND, TEXAS	

TABLES

Table 1
COG Operating LLC
Pearsall AX TB
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
AH-9	02/09/10	0-1'	X		<50.0	17.6	17.6	<0.0100	<0.0100	<0.0100	<0.0100	<200
AH-9	02/09/10	1-1.5'	X		-	-	-	-	-	-	-	<200
AH-9	02/09/10	2-2.5'	X		-	-	-	-	-	-	-	<200
AH-10	02/09/10	0-1'	X		<50.0	<1.00	<50.0					<200
AH-10	02/09/10	1-1.5'	X		-	-	-	-	-	-	-	<200
AH-10	02/09/10	2-2.5'	X		-	-	-	-	-	-	-	<200
AH-11	02/09/10	0-1'	X		<50.0	<1.00	<50.0	-	-	-	-	<200
AH-11	02/09/10	1-1.5'	X		-	-	-	-	-	-	-	<200
AH-11	02/09/10	2-2.5'	X		-	-	-	-	-	-	-	<200
AH-12	02/09/10	0-1'	X		398	122	520	<0.0100	0.0395	<0.0100	0.951	<200
AH-12	02/09/10	1-1.5'	X		-	-	-	-	-	-	-	<200
AH-12	02/09/10	2-2.5'	X		-	-	-	-	-	-	-	<200
AH-13	02/09/10	0-1'	X		<50.0	1.47	1.47	<0.0100	<0.0100	<0.0100	<0.0100	<200
AH-13	02/09/10	1-1.5'	X		-	-	-	-	-	-	-	<200
AH-13	02/09/10	2-2.5'	X		-	-	-	-	-	-	-	<200
AH-13	02/09/10	3-3.5'	X		-	-	-	-	-	-	-	<200

(-) Not Analyzed

Samples collected 1.0' below excavation bottom

APPENDIX A
WATER WELL INVENTORY

Water Well Data
Average Depth to Groundwater (ft)
COG - Pearsall AX Tank Battery, Lea County, New Mexico

16 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	35	36
290					

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	35	36
			271		

18 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	35	36
				261	

16 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
				260	

17 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
180 dry					

18 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

16 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
190	168	160			

17 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

18 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

- 88 New Mexico State Engineers Well Reports
- 105 USGS Well Reports
- 90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
- Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34 NMOCD - Groundwater Data
- 121 Abandoned Waterwell (recently measured)



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	Sub	Use	County	Q Q Q			Sec	Tws	Rng	X	Y	Depth	Depth	Water	
	basin			64	16	4						Well	Water	Column	
CP 00566		DOM	LE	4	4	1	04	18S	32E	614960	3627280*	133	65	68	
													Average Depth to Water:		65 feet
													Minimum Depth:		65 feet
													Maximum Depth:		65 feet

Record Count: 1

PLSS Search:

Section(s): 4

Township: 18S

Range: 32E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

APPENDIX B
LABORATORY ANALYSIS

Summary Report

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

Report Date: February 22, 2010

Work Order: 10021208



Project Location: Lea Co., NM
Project Name: Pearsall AX TB
Project Number: 114-6400390

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222225	AH-1 0-1'	soil	2010-02-09	00:00	2010-02-11
222226	AH-1 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222227	AH-1 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222228	AH-2 0-1'	soil	2010-02-09	00:00	2010-02-11
222229	AH-2 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222230	AH-2 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222231	AH-3 0-1'	soil	2010-02-09	00:00	2010-02-11
222232	AH-3 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222233	AH-3 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222234	AH-4 0-1'	soil	2010-02-09	00:00	2010-02-11
222235	AH-4 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222236	AH-4 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222237	AH-5 0-1'	soil	2010-02-09	00:00	2010-02-11
222238	AH-5 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222239	AH-5 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222240	AH-6 0-1'	soil	2010-02-09	00:00	2010-02-11
222241	AH-6 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222242	AH-6 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222243	AH-7 0-1'	soil	2010-02-09	00:00	2010-02-11
222244	AH-7 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222245	AH-7 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222246	AH-8 0-1'	soil	2010-02-09	00:00	2010-02-11
222247	AH-8 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222248	AH-8 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222249	AH-9 0-1'	soil	2010-02-09	00:00	2010-02-11
222250	AH-9 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222251	AH-9 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222252	AH-10 0-1'	soil	2010-02-09	00:00	2010-02-11
222253	AH-10 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222254	AH-10 2'-2.5'	soil	2010-02-09	00:00	2010-02-11

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222255	AH-11 0-1'	soil	2010-02-09	00:00	2010-02-11
222256	AH-11 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222257	AH-11 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222258	AH-12 0-1'	soil	2010-02-09	00:00	2010-02-11
222259	AH-12 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222260	AH-12 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222261	AH-13 0-1'	soil	2010-02-09	00:00	2010-02-11
222262	AH-13 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222263	AH-13 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222264	AH-13 3'-3.5'	soil	2010-02-09	00:00	2010-02-11

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
222225 - AH-1 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
222228 - AH-2 0-1'					<50.0	<1.00
222231 - AH-3 0-1'					<50.0	<1.00
222234 - AH-4 0-1'	<0.100	0.386	2.81	6.44	143	337
222237 - AH-5 0-1'					<50.0	<1.00
222240 - AH-6 0-1'					<50.0	<1.00
222243 - AH-7 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
222246 - AH-8 0-1'					<50.0	<1.00
222249 - AH-9 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	17.6
222252 - AH-10 0-1'					<50.0	<1.00
222255 - AH-11 0-1'					<50.0	<1.00
222258 - AH-12 0-1'	<0.0100	0.0395	<0.0100	0.951	398	122
222261 - AH-13 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	1.47

Sample: 222225 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222226 - AH-1 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222227 - AH-1 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222228 - AH-2 0-1'

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This is only a summary. Please, refer to the complete report package for quality control data.

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222229 - AH-2 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222230 - AH-2 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222231 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222232 - AH-3 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222233 - AH-3 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222234 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222235 - AH-4 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222236 - AH-4 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222237 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222238 - AH-5 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222239 - AH-5 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222240 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222241 - AH-6 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222242 - AH-6 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222243 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222244 - AH-7 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222245 - AH-7 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222246 - AH-8 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222247 - AH-8 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222248 - AH-8 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222249 - AH-9 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222250 - AH-9 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222251 - AH-9 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222252 - AH-10 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222253 - AH-10 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222254 - AH-10 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222255 - AH-11 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222256 - AH-11 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222257 - AH-11 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222258 - AH-12 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222259 - AH-12 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222260 - AH-12 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222261 - AH-13 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222262 - AH-13 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222263 - AH-13 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222264 - AH-13 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00



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Certifications

WBENC: 237019 HUB: 1752439743100-86536 DBE: VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX El Paso: T104704221-08-TX Midland: T104704392-08-TX
LELAP-02003 LELAP-02002
Kansas E-10317

Analytical and Quality Control Report

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

Report Date: February 22, 2010

Work Order: 10021208



Project Location: Lea Co., NM
Project Name: Pearsall AX TB
Project Number: 114-6400390

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
222225	AH-1 0-1'	soil	2010-02-09	00:00	2010-02-11
222226	AH-1 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222227	AH-1 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222228	AH-2 0-1'	soil	2010-02-09	00:00	2010-02-11
222229	AH-2 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222230	AH-2 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222231	AH-3 0-1'	soil	2010-02-09	00:00	2010-02-11
222232	AH-3 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222233	AH-3 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222234	AH-4 0-1'	soil	2010-02-09	00:00	2010-02-11

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222235	AH-4 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222236	AH-4 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222237	AH-5 0-1'	soil	2010-02-09	00:00	2010-02-11
222238	AH-5 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222239	AH-5 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222240	AH-6 0-1'	soil	2010-02-09	00:00	2010-02-11
222241	AH-6 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222242	AH-6 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222243	AH-7 0-1'	soil	2010-02-09	00:00	2010-02-11
222244	AH-7 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222245	AH-7 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222246	AH-8 0-1'	soil	2010-02-09	00:00	2010-02-11
222247	AH-8 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222248	AH-8 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222249	AH-9 0-1'	soil	2010-02-09	00:00	2010-02-11
222250	AH-9 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222251	AH-9 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222252	AH-10 0-1'	soil	2010-02-09	00:00	2010-02-11
222253	AH-10 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222254	AH-10 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222255	AH-11 0-1'	soil	2010-02-09	00:00	2010-02-11
222256	AH-11 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222257	AH-11 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222258	AH-12 0-1'	soil	2010-02-09	00:00	2010-02-11
222259	AH-12 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222260	AH-12 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222261	AH-13 0-1'	soil	2010-02-09	00:00	2010-02-11
222262	AH-13 1'-1.5'	soil	2010-02-09	00:00	2010-02-11
222263	AH-13 2'-2.5'	soil	2010-02-09	00:00	2010-02-11
222264	AH-13 3'-3.5'	soil	2010-02-09	00:00	2010-02-11

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

This report consists of a total of 41 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

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Pearsall AX TB were received by TraceAnalysis, Inc. on 2010-02-11 and assigned to work order 10021208. Samples for work order 10021208 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	57833	2010-02-17 at 15:30	67610	2010-02-17 at 07:22
Chloride (Titration)	SM 4500-Cl B	57856	2010-02-18 at 09:11	67661	2010-02-19 at 11:30
Chloride (Titration)	SM 4500-Cl B	57857	2010-02-18 at 09:11	67662	2010-02-19 at 11:31
Chloride (Titration)	SM 4500-Cl B	57858	2010-02-18 at 09:12	67664	2010-02-19 at 11:32
Chloride (Titration)	SM 4500-Cl B	57859	2010-02-18 at 09:13	67675	2010-02-19 at 14:48
Chloride (Titration)	SM 4500-Cl B	57860	2010-02-18 at 09:13	67676	2010-02-19 at 14:49
TPH DRO - NEW	Mod. 8015B	57769	2010-02-15 at 10:19	67532	2010-02-15 at 10:19
TPH DRO - NEW	Mod. 8015B	57770	2010-02-15 at 10:19	67533	2010-02-15 at 10:19
TPH GRO	S 8015B	57833	2010-02-17 at 15:30	67611	2010-02-17 at 07:49

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 10021208 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.

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114-6400390

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Pearsall AX TB

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Analytical Report

Sample: 222225 - AH-1 0-1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 67610
Prep Batch: 57833

Analytical Method: S 8021B
Date Analyzed: 2010-02-17
Sample Preparation: 2010-02-17

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

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.28	mg/Kg	1	2.00	114	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		2.29	mg/Kg	1	2.00	114	43.1 - 158.4

Sample: 222225 - AH-1 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67661
Prep Batch: 57856

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

Sample: 222225 - AH-1 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 67532
Prep Batch: 57769

Analytical Method: Mod. 8015B
Date Analyzed: 2010-02-15
Sample Preparation: 2010-02-15

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

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		105	mg/Kg	1	100	105	70 - 130

Sample: 222225 - AH-1 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 67611
Prep Batch: 57833

Analytical Method: S 8015B
Date Analyzed: 2010-02-17
Sample Preparation: 2010-02-17

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.45	mg/Kg	1	2.00	122	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.37	mg/Kg	1	2.00	118	61.7 - 131.1

Sample: 222226 - AH-1 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67661
Prep Batch: 57856

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

Sample: 222227 - AH-1 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67661
Prep Batch: 57856

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

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Sample: 222228 - AH-2 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67661	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57856				

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

Sample: 222228 - AH-2 0-1'

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-02-15	Analyzed By:	kg
QC Batch:	67532	Sample Preparation:	2010-02-15	Prepared By:	kg
Prep Batch:	57769				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		115	mg/Kg	1	100	115	70 - 130

Sample: 222228 - AH-2 0-1'

Laboratory:	Midland	Analytical Method:	S 8015B	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-02-17	Analyzed By:	AG
QC Batch:	67611	Sample Preparation:	2010-02-17	Prepared By:	AG
Prep Batch:	57833				

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.40	mg/Kg	1	2.00	70	65.3 - 145
4-Bromofluorobenzene (4-BFB)		1.26	mg/Kg	1	2.00	63	61.7 - 131.1

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Sample: 222229 - AH-2 1'-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67661	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57856				

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

Sample: 222230 - AH-2 2'-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67661	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57856				

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

Sample: 222231 - AH-3 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67661	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57856				

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

Sample: 222231 - AH-3 0-1'

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-02-15	Analyzed By:	kg
QC Batch:	67533	Sample Preparation:	2010-02-15	Prepared By:	kg
Prep Batch:	57770				

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		116	mg/Kg	1	100	116	70 - 130

Sample: 222231 - AH-3 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 67611
Prep Batch: 57833

Analytical Method: S 8015B
Date Analyzed: 2010-02-17
Sample Preparation: 2010-02-17

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.12	mg/Kg	1	2.00	106	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.05	mg/Kg	1	2.00	102	61.7 - 131.1

Sample: 222232 - AH-3 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67662
Prep Batch: 57857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

Sample: 222233 - AH-3 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67662
Prep Batch: 57857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

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Sample: 222234 - AH-4 0-1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 67610
Prep Batch: 57833

Analytical Method: S 8021B
Date Analyzed: 2010-02-17
Sample Preparation: 2010-02-17

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

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.100	mg/Kg	10	0.0100
Toluene		0.386	mg/Kg	10	0.0100
Ethylbenzene		2.81	mg/Kg	10	0.0100
Xylene		6.44	mg/Kg	10	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		10.7	mg/Kg	10	10.0	107	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		13.0	mg/Kg	10	10.0	130	43.1 - 158.4

Sample: 222234 - AH-4 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67662
Prep Batch: 57857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

Sample: 222234 - AH-4 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 67533
Prep Batch: 57770

Analytical Method: Mod. 8015B
Date Analyzed: 2010-02-15
Sample Preparation: 2010-02-15

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

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		143	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	¹	134	mg/Kg	1	100	134	70 - 130

¹High surrogate recovery due to peak interference.

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Sample: 222234 - AH-4 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 67611
Prep Batch: 57833

Analytical Method: S 8015B
Date Analyzed: 2010-02-17
Sample Preparation: 2010-02-17

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		337	mg/Kg	10	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		11.5	mg/Kg	10	10.0	115	65.3 - 145
4-Bromofluorobenzene (4-BFB)	²	14.8	mg/Kg	10	10.0	148	61.7 - 131.1

Sample: 222235 - AH-4 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67662
Prep Batch: 57857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

Sample: 222236 - AH-4 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67662
Prep Batch: 57857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

Sample: 222237 - AH-5 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67662
Prep Batch: 57857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

²High surrogate recovery due to peak interference.

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

Sample: 222237 - AH-5 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 67533
Prep Batch: 57770

Analytical Method: Mod. 8015B
Date Analyzed: 2010-02-15
Sample Preparation: 2010-02-15

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		120	mg/Kg	1	100	120	70 - 130

Sample: 222237 - AH-5 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 67611
Prep Batch: 57833

Analytical Method: S 8015B
Date Analyzed: 2010-02-17
Sample Preparation: 2010-02-17

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	65.3 - 145
4-Bromofluorobenzene (4-BFB)		1.97	mg/Kg	1	2.00	98	61.7 - 131.1

Sample: 222238 - AH-5 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67662
Prep Batch: 57857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

continued ...

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sample 222238 continued ...

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

Sample: 222239 - AH-5 2'-2.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-02-19	Analyzed By: AR
QC Batch: 67662	Sample Preparation: 2010-02-18	Prepared By: AR
Prep Batch: 57857		

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

Sample: 222240 - AH-6 0-1'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-02-19	Analyzed By: AR
QC Batch: 67662	Sample Preparation: 2010-02-18	Prepared By: AR
Prep Batch: 57857		

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

Sample: 222240 - AH-6 0-1'

Laboratory: Midland	Analytical Method: Mod. 8015B	Prep Method: N/A
Analysis: TPH DRO - NEW	Date Analyzed: 2010-02-15	Analyzed By: kg
QC Batch: 67533	Sample Preparation: 2010-02-15	Prepared By: kg
Prep Batch: 57770		

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		121	mg/Kg	1	100	121	70 - 130

Sample: 222240 - AH-6 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 67611
Prep Batch: 57833

Analytical Method: S 8015B
Date Analyzed: 2010-02-17
Sample Preparation: 2010-02-17

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.37	mg/Kg	1	2.00	118	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.28	mg/Kg	1	2.00	114	61.7 - 131.1

Sample: 222241 - AH-6 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67662
Prep Batch: 57857

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

Sample: 222242 - AH-6 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67664
Prep Batch: 57858

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

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Sample: 222243 - AH-7 0-1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 67610
Prep Batch: 57833

Analytical Method: S 8021B
Date Analyzed: 2010-02-17
Sample Preparation: 2010-02-17

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

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.64	mg/Kg	1	2.00	82	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.62	mg/Kg	1	2.00	81	43.1 - 158.4

Sample: 222243 - AH-7 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67664
Prep Batch: 57858

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

Sample: 222243 - AH-7 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 67533
Prep Batch: 57770

Analytical Method: Mod. 8015B
Date Analyzed: 2010-02-15
Sample Preparation: 2010-02-15

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		108	mg/Kg	1	100	108	70 - 130

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Sample: 222243 - AH-7 0-1'

Laboratory:	Midland	Analytical Method:	S 8015B	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-02-17	Analyzed By:	AG
QC Batch:	67611	Sample Preparation:	2010-02-17	Prepared By:	AG
Prep Batch:	57833				

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.81	mg/Kg	1	2.00	90	65.3 - 145
4-Bromofluorobenzene (4-BFB)		1.74	mg/Kg	1	2.00	87	61.7 - 131.1

Sample: 222244 - AH-7 1'-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67664	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57858				

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

Sample: 222245 - AH-7 2'-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67664	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57858				

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

Sample: 222246 - AH-8 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67664	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57858				

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

Sample: 222246 - AH-8 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 67533
Prep Batch: 57770

Analytical Method: Mod. 8015B
Date Analyzed: 2010-02-15
Sample Preparation: 2010-02-15

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		112	mg/Kg	1	100	112	70 - 130

Sample: 222246 - AH-8 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 67611
Prep Batch: 57833

Analytical Method: S 8015B
Date Analyzed: 2010-02-17
Sample Preparation: 2010-02-17

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.83	mg/Kg	1	2.00	142	65.3 - 145
4-Bromofluorobenzene (4-BFB)	³	2.67	mg/Kg	1	2.00	134	61.7 - 131.1

Sample: 222247 - AH-8 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67664
Prep Batch: 57858

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

continued ...

³High surrogate recovery. Sample non-detect, result bias high.

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sample 222247 continued ...

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

Sample: 222248 - AH-8 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 67664 Date Analyzed: 2010-02-19 Analyzed By: AR
Prep Batch: 57858 Sample Preparation: 2010-02-18 Prepared By: AR

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

Sample: 222249 - AH-9 0-1'

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 67610 Date Analyzed: 2010-02-17 Analyzed By: AG
Prep Batch: 57833 Sample Preparation: 2010-02-17 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.10	mg/Kg	1	2.00	105	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		2.18	mg/Kg	1	2.00	109	43.1 - 158.4

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Sample: 222249 - AH-9 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67664	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57858				

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

Sample: 222249 - AH-9 0-1'

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-02-15	Analyzed By:	kg
QC Batch:	67533	Sample Preparation:	2010-02-15	Prepared By:	kg
Prep Batch:	57770				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		79.4	mg/Kg	1	100	79	70 - 130

Sample: 222249 - AH-9 0-1'

Laboratory:	Midland	Analytical Method:	S 8015B	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-02-17	Analyzed By:	AG
QC Batch:	67611	Sample Preparation:	2010-02-17	Prepared By:	AG
Prep Batch:	57833				

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		17.6	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.31	mg/Kg	1	2.00	116	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.30	mg/Kg	1	2.00	115	61.7 - 131.1

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Sample: 222250 - AH-9 1'-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67664	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57858				

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

Sample: 222251 - AH-9 2'-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67664	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57858				

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

Sample: 222252 - AH-10 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67675	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57859				

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

Sample: 222252 - AH-10 0-1'

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-02-15	Analyzed By:	kg
QC Batch:	67533	Sample Preparation:	2010-02-15	Prepared By:	kg
Prep Batch:	57770				

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		117	mg/Kg	1	100	117	70 - 130

Sample: 222252 - AH-10 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 67611
Prep Batch: 57833

Analytical Method: S 8015B
Date Analyzed: 2010-02-17
Sample Preparation: 2010-02-17

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.28	mg/Kg	1	2.00	114	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.24	mg/Kg	1	2.00	112	61.7 - 131.1

Sample: 222253 - AH-10 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67675
Prep Batch: 57859

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

Sample: 222254 - AH-10 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67675
Prep Batch: 57859

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

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Sample: 222255 - AH-11 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 67675
Prep Batch: 57859

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-02-19
Sample Preparation: 2010-02-18

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

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

Sample: 222255 - AH-11 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 67533
Prep Batch: 57770

Analytical Method: Mod. 8015B
Date Analyzed: 2010-02-15
Sample Preparation: 2010-02-15

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		112	mg/Kg	1	100	112	70 - 130

Sample: 222255 - AH-11 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 67611
Prep Batch: 57833

Analytical Method: S 8015B
Date Analyzed: 2010-02-17
Sample Preparation: 2010-02-17

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.10	mg/Kg	1	2.00	105	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.02	mg/Kg	1	2.00	101	61.7 - 131.1

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Sample: 222256 - AH-11 1'-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67675	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57859				

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

Sample: 222257 - AH-11 2'-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67675	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57859				

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

Sample: 222258 - AH-12 0-1'

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2010-02-17	Analyzed By:	AG
QC Batch:	67610	Sample Preparation:	2010-02-17	Prepared By:	AG
Prep Batch:	57833				

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		0.0395	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		0.951	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.56	mg/Kg	1	2.00	78	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.86	mg/Kg	1	2.00	93	43.1 - 158.4

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Sample: 222258 - AH-12 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67675	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57859				

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

Sample: 222258 - AH-12 0-1'

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-02-15	Analyzed By:	kg
QC Batch:	67533	Sample Preparation:	2010-02-15	Prepared By:	kg
Prep Batch:	57770				

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		398	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	4	139	mg/Kg	1	100	139	70 - 130

Sample: 222258 - AH-12 0-1'

Laboratory:	Midland	Analytical Method:	S 8015B	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-02-17	Analyzed By:	AG
QC Batch:	67611	Sample Preparation:	2010-02-17	Prepared By:	AG
Prep Batch:	57833				

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		122	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.69	mg/Kg	1	2.00	84	65.3 - 145
4-Bromofluorobenzene (4-BFB)		1.99	mg/Kg	1	2.00	100	61.7 - 131.1

⁴High surrogate recovery due to peak interference.

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Sample: 222259 - AH-12 1'-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67675	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57859				

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

Sample: 222260 - AH-12 2'-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67675	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57859				

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

Sample: 222261 - AH-13 0-1'

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2010-02-17	Analyzed By:	AG
QC Batch:	67610	Sample Preparation:	2010-02-17	Prepared By:	AG
Prep Batch:	57833				

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.36	mg/Kg	1	2.00	68	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.40	mg/Kg	1	2.00	70	43.1 - 158.4

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Sample: 222261 - AH-13 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67675	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57859				

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

Sample: 222261 - AH-13 0-1'

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-02-15	Analyzed By:	kg
QC Batch:	67533	Sample Preparation:	2010-02-15	Prepared By:	kg
Prep Batch:	57770				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		121	mg/Kg	1	100	121	70 - 130

Sample: 222261 - AH-13 0-1'

Laboratory:	Midland	Analytical Method:	S 8015B	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-02-17	Analyzed By:	AG
QC Batch:	67611	Sample Preparation:	2010-02-17	Prepared By:	AG
Prep Batch:	57833				

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		1.47	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.48	mg/Kg	1	2.00	74	65.3 - 145
4-Bromofluorobenzene (4-BFB)		1.50	mg/Kg	1	2.00	75	61.7 - 131.1

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Sample: 222262 - AH-13 1'-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67676	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57860				

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

Sample: 222263 - AH-13 2'-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67676	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57860				

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

Sample: 222264 - AH-13 3'-3.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-02-19	Analyzed By:	AR
QC Batch:	67676	Sample Preparation:	2010-02-18	Prepared By:	AR
Prep Batch:	57860				

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

Method Blank (1) QC Batch: 67532

QC Batch:	67532	Date Analyzed:	2010-02-15	Analyzed By:	kg
Prep Batch:	57769	QC Preparation:	2010-02-15	Prepared By:	kg

Parameter	Flag	MDL Result	Units	RL
DRO		<5.86	mg/Kg	50

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		127	mg/Kg	1	100	127	70 - 130

Method Blank (1) QC Batch: 67533

QC Batch: 67533
Prep Batch: 57770

Date Analyzed: 2010-02-15
QC Preparation: 2010-02-15

Analyzed By: kg
Prepared By: kg

Parameter	Flag	MDL Result	Units	RL
DRO		<5.86	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		110	mg/Kg	1	100	110	70 - 130

Method Blank (1) QC Batch: 67610

QC Batch: 67610
Prep Batch: 57833

Date Analyzed: 2010-02-17
QC Preparation: 2010-02-17

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00410	mg/Kg	0.01
Toluene		<0.00310	mg/Kg	0.01
Ethylbenzene		<0.00240	mg/Kg	0.01
Xylene		<0.00650	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.00	mg/Kg	1	2.00	100	64.9 - 142.7
4-Bromofluorobenzene (4-BFB)		1.84	mg/Kg	1	2.00	92	43.9 - 141.9

Method Blank (1) QC Batch: 67611

QC Batch: 67611
Prep Batch: 57833

Date Analyzed: 2010-02-17
QC Preparation: 2010-02-17

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.396	mg/Kg	1

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.19	mg/Kg	1	2.00	110	66.2 - 145
4-Bromofluorobenzene (4-BFB)		1.95	mg/Kg	1	2.00	98	62 - 120.5

Method Blank (1) QC Batch: 67661

QC Batch: 67661 Date Analyzed: 2010-02-19 Analyzed By: AR
Prep Batch: 57856 QC Preparation: 2010-02-18 Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 67662

QC Batch: 67662 Date Analyzed: 2010-02-19 Analyzed By: AR
Prep Batch: 57857 QC Preparation: 2010-02-18 Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 67664

QC Batch: 67664 Date Analyzed: 2010-02-19 Analyzed By: AR
Prep Batch: 57858 QC Preparation: 2010-02-18 Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 67675

QC Batch: 67675 Date Analyzed: 2010-02-19 Analyzed By: AR
Prep Batch: 57859 QC Preparation: 2010-02-18 Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

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Method Blank (1) QC Batch: 67676

QC Batch: 67676
Prep Batch: 57860

Date Analyzed: 2010-02-19
QC Preparation: 2010-02-18

Analyzed By: AR
Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch: 67532
Prep Batch: 57769

Date Analyzed: 2010-02-15
QC Preparation: 2010-02-15

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	253	mg/Kg	1	250	<5.86	101	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	261	mg/Kg	1	250	<5.86	104	57.4 - 133.4	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	107	108	mg/Kg	1	100	107	108	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 67533
Prep Batch: 57770

Date Analyzed: 2010-02-15
QC Preparation: 2010-02-15

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	287	mg/Kg	1	250	<5.86	115	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	297	mg/Kg	1	250	<5.86	119	57.4 - 133.4	3	20

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

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	123	126	mg/Kg	1	100	123	126	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 67610
Prep Batch: 57833

Date Analyzed: 2010-02-17
QC Preparation: 2010-02-17

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.95	mg/Kg	1	2.00	<0.00410	98	75.4 - 115.7
Toluene	1.93	mg/Kg	1	2.00	<0.00310	96	78.4 - 113.6
Ethylbenzene	1.90	mg/Kg	1	2.00	<0.00240	95	76 - 114.2
Xylene	5.70	mg/Kg	1	6.00	<0.00650	95	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.89	mg/Kg	1	2.00	<0.00410	94	75.4 - 115.7	3	20
Toluene	1.86	mg/Kg	1	2.00	<0.00310	93	78.4 - 113.6	4	20
Ethylbenzene	1.87	mg/Kg	1	2.00	<0.00240	94	76 - 114.2	2	20
Xylene	5.57	mg/Kg	1	6.00	<0.00650	93	76.9 - 113.6	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)	2.03	1.85	mg/Kg	1	2.00	102	92	65 - 142.9
4-Bromofluorobenzene (4-BFB)	2.09	1.94	mg/Kg	1	2.00	104	97	43.8 - 144.9

Laboratory Control Spike (LCS-1)

QC Batch: 67611
Prep Batch: 57833

Date Analyzed: 2010-02-17
QC Preparation: 2010-02-17

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.9	mg/Kg	1	20.0	<0.396	80	52.5 - 114.3

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.6	mg/Kg	1	20.0	<0.396	78	52.5 - 114.3	2	20

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

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.15	2.02	mg/Kg	1	2.00	108	101	66.2 - 148.7
4-Bromofluorobenzene (4-BFB)	2.08	1.96	mg/Kg	1	2.00	104	98	64.1 - 127.4

Laboratory Control Spike (LCS-1)

QC Batch: 67661
Prep Batch: 57856

Date Analyzed: 2010-02-19
QC Preparation: 2010-02-18

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.8	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	mg/Kg	1	100	<2.18	100	85 - 115	1	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: 67662
Prep Batch: 57857

Date Analyzed: 2010-02-19
QC Preparation: 2010-02-18

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.0	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	98.6	mg/Kg	1	100	<2.18	99	85 - 115	1	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: 67664
Prep Batch: 57858

Date Analyzed: 2010-02-19
QC Preparation: 2010-02-18

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.0	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	mg/Kg	1	100	<2.18	100	85 - 115	1	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: 67675
Prep Batch: 57859

Date Analyzed: 2010-02-19
QC Preparation: 2010-02-18

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.2	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	mg/Kg	1	100	<2.18	100	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 67676
Prep Batch: 57860

Date Analyzed: 2010-02-19
QC Preparation: 2010-02-18

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.5	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.6	mg/Kg	1	100	<2.18	100	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 222080

QC Batch: 67532
Prep Batch: 57769

Date Analyzed: 2010-02-15
QC Preparation: 2010-02-15

Analyzed By: kg
Prepared By: kg

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	226	mg/Kg	1	250	<5.86	90	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	212	mg/Kg	1	250	<5.86	85	35.2 - 167.1	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
n-Tricosane	103	98.7	mg/Kg	1	100	103	99	70 - 130

Matrix Spike (MS-1) Spiked Sample: 222231

QC Batch: 67533
Prep Batch: 57770

Date Analyzed: 2010-02-15
QC Preparation: 2010-02-15

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	221	mg/Kg	1	250	<5.86	88	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	228	mg/Kg	1	250	<5.86	91	35.2 - 167.1	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	102	108	mg/Kg	1	100	102	108	70 - 130

Matrix Spike (MS-1) Spiked Sample: 222769

QC Batch: 67610
Prep Batch: 57833

Date Analyzed: 2010-02-17
QC Preparation: 2010-02-17

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.95	mg/Kg	1	2.00	<0.00410	98	57.7 - 140.7
Toluene	2.06	mg/Kg	1	2.00	0.1044	98	53.4 - 146.6
Ethylbenzene	2.52	mg/Kg	1	2.00	0.4605	103	62.1 - 141.6
Xylene	8.56	mg/Kg	1	6.00	2.3881	103	61.2 - 142.7

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

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.94	mg/Kg	1	2.00	<0.00410	97	57.7 - 140.7	0	20
Toluene	2.10	mg/Kg	1	2.00	0.1044	100	53.4 - 146.6	2	20
Ethylbenzene	2.71	mg/Kg	1	2.00	0.4605	112	62.1 - 141.6	7	20
Xylene	9.46	mg/Kg	1	6.00	2.3881	118	61.2 - 142.7	10	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)	1.60	1.74	mg/Kg	1	2	80	87	62.7 - 139.6
4-Bromofluorobenzene (4-BFB)	2.13	2.39	mg/Kg	1	2	106	120	49.6 - 146.7

Matrix Spike (MS-1) Spiked Sample: 222240

QC Batch: 67611
Prep Batch: 57833

Date Analyzed: 2010-02-17
QC Preparation: 2010-02-17

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	13.9	mg/Kg	1	20.0	<0.396	70	10 - 198.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	⁵ 17.0	mg/Kg	1	20.0	<0.396	85	10 - 198.3	20	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)	2.45	2.68	mg/Kg	1	2	122	134	65.5 - 143
4-Bromofluorobenzene (4-BFB)	2.46	2.69	mg/Kg	1	2	123	134	58.6 - 140

Matrix Spike (MS-1) Spiked Sample: 222231

QC Batch: 67661
Prep Batch: 57856

Date Analyzed: 2010-02-19
QC Preparation: 2010-02-18

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10000	mg/Kg	100	10000	<218	100	85 - 115

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

⁵MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10200	mg/Kg	100	10000	<218	102	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 222241

QC Batch: 67662
Prep Batch: 57857

Date Analyzed: 2010-02-19
QC Preparation: 2010-02-18

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10100	mg/Kg	100	10000	<218	101	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10300	mg/Kg	100	10000	<218	103	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 222251

QC Batch: 67664
Prep Batch: 57858

Date Analyzed: 2010-02-19
QC Preparation: 2010-02-18

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10200	mg/Kg	100	10000	<218	102	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10100	mg/Kg	100	10000	<218	101	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 222261

QC Batch: 67675
Prep Batch: 57859

Date Analyzed: 2010-02-19
QC Preparation: 2010-02-18

Analyzed By: AR
Prepared By: AR

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matrix spikes continued ...

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9950	mg/Kg	100	10000	<218	98	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10100	mg/Kg	100	10000	<218	101	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 222295

QC Batch: 67676
Prep Batch: 57860

Date Analyzed: 2010-02-19
QC Preparation: 2010-02-18

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11700	mg/Kg	100	10000	1770	99	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11800	mg/Kg	100	10000	1770	100	85 - 115	1	20

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

Standard (CCV-3)

QC Batch: 67532

Date Analyzed: 2010-02-15

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	257	103	80 - 120	2010-02-15

Standard (CCV-4)

QC Batch: 67532

Date Analyzed: 2010-02-15

Analyzed By: kg

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	278	111	80 - 120	2010-02-15

Standard (CCV-1)

QC Batch: 67533 Date Analyzed: 2010-02-15 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	284	114	80 - 120	2010-02-15

Standard (CCV-2)

QC Batch: 67533 Date Analyzed: 2010-02-15 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	281	112	80 - 120	2010-02-15

Standard (CCV-3)

QC Batch: 67533 Date Analyzed: 2010-02-15 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	285	114	80 - 120	2010-02-15

Standard (CCV-1)

QC Batch: 67610 Date Analyzed: 2010-02-17 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.100	100	80 - 120	2010-02-17
Toluene		mg/Kg	0.100	0.0994	99	80 - 120	2010-02-17
Ethylbenzene		mg/Kg	0.100	0.0989	99	80 - 120	2010-02-17
Xylene		mg/Kg	0.300	0.296	99	80 - 120	2010-02-17

Report Date: February 22, 2010
114-6400390

Work Order: 10021208
Pearsall AX TB

Page Number: 38 of 41
Lea Co., NM

Standard (CCV-2)

QC Batch: 67610

Date Analyzed: 2010-02-17

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.100	100	80 - 120	2010-02-17
Toluene		mg/Kg	0.100	0.0990	99	80 - 120	2010-02-17
Ethylbenzene		mg/Kg	0.100	0.0996	100	80 - 120	2010-02-17
Xylene		mg/Kg	0.300	0.298	99	80 - 120	2010-02-17

Standard (CCV-3)

QC Batch: 67610

Date Analyzed: 2010-02-17

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0941	94	80 - 120	2010-02-17
Toluene		mg/Kg	0.100	0.0932	93	80 - 120	2010-02-17
Ethylbenzene		mg/Kg	0.100	0.0923	92	80 - 120	2010-02-17
Xylene		mg/Kg	0.300	0.275	92	80 - 120	2010-02-17

Standard (CCV-1)

QC Batch: 67611

Date Analyzed: 2010-02-17

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.994	99	80 - 120	2010-02-17

Standard (CCV-2)

QC Batch: 67611

Date Analyzed: 2010-02-17

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.08	108	80 - 120	2010-02-17

Standard (CCV-3)

QC Batch: 67611

Date Analyzed: 2010-02-17

Analyzed By: AG

Report Date: February 22, 2010
114-6400390

Work Order: 10021208
Pearsall AX TB

Page Number: 39 of 41
Lea Co., NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.09	109	80 - 120	2010-02-17

Standard (ICV-1)

QC Batch: 67661 Date Analyzed: 2010-02-19 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.9	100	85 - 115	2010-02-19

Standard (CCV-1)

QC Batch: 67661 Date Analyzed: 2010-02-19 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-02-19

Standard (ICV-1)

QC Batch: 67662 Date Analyzed: 2010-02-19 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-02-19

Standard (CCV-1)

QC Batch: 67662 Date Analyzed: 2010-02-19 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.3	99	85 - 115	2010-02-19

Standard (ICV-1)

QC Batch: 67664 Date Analyzed: 2010-02-19 Analyzed By: AR

Report Date: February 22, 2010
114-6400390

Work Order: 10021208
Pearsall AX TB

Page Number: 40 of 41
Lea Co., NM

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.3	98	85 - 115	2010-02-19

Standard (CCV-1)

QC Batch: 67664 Date Analyzed: 2010-02-19 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2010-02-19

Standard (ICV-1)

QC Batch: 67675 Date Analyzed: 2010-02-19 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-02-19

Standard (CCV-1)

QC Batch: 67675 Date Analyzed: 2010-02-19 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.8	99	85 - 115	2010-02-19

Standard (ICV-1)

QC Batch: 67676 Date Analyzed: 2010-02-19 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.4	99	85 - 115	2010-02-19

Standard (CCV-1)

QC Batch: 67676 Date Analyzed: 2010-02-19 Analyzed By: AR

Report Date: February 22, 2010
114-6400390

Work Order: 10021208
Pearsall AX TB

Page Number: 41 of 41
Lea Co., NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-02-19

Order #: 10021208

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: 4

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:

CUG

SITE MANAGER:

Eke Tawaz

PROJECT NO.:

114-6400350

PROJECT NAME:

CUG / Pearsall AX TB
Len Co. NMLAB I.D.
NUMBER

DATE

TIME

MATRIX

COMP.

GRAB

SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNO3

ICE

NONE

PRESERVATIVE
METHODBTEX 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 Cr Pb Hg Se

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC/MS Vol. 8240/8260/824

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

222225

2-9

S

X

AH-1

0-1'

1

X

226

227

228

229

230

231

232

233

234

V

Y

V

AH-1

0-1'

V

V

X

RELINQUISHED BY: (Signature)

Date:

Time:

RELINQUISHED BY: (Signature)

Date:

Time:

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVING LABORATORY:

ADDRESS:

CITY:

STATE:

ZIP:

CONTACT:

PHONE:

RECEIVED BY: (Signature)

DATE:

TIME:

Date:

Time:

Date:

Time:

Date:

Time:

SAMPLED BY: (Print & Initial)

Date:

SAMPLE SHIPPED BY: (Circle)

FEDEX

BUS

HAND DELIVERED

UPS

AIRBILL #:

OTHER:

TETRA TECH CONTACT PERSON:

Results by:

Eke Tawaz

RUSH Charges

Authorized:

Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

4.0°C intact

If total TPH exceeds 5,000 mg/kg run deeper samples

Run 6 BTEX on highest TPH

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

Order #: 10021208

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: 4

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:

COG

SITE MANAGER:

PROJECT NO.:

114-6400350

PROJECT NAME:

COG / Peaswell AX TB
Lee Co Nn

SAMPLE IDENTIFICATION

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION		NUMBER OF	FILTERED (Y)	HCL	HNO3	ICE	NONE	BTX 8021B	PH 8015	PAH 8270	RCRA Metals	TCLP Metals	TCLP Volatiles	TCLP Semi	RCI	GC-MS Vol.	GC-MS Semi	PCBs 8080/	Pest. 808/60	Chlorides	Gamma Spec	Alpha Beta	PLM (Asbes	Major Anion
	2010																													
222235	2-9		X		X	AH-4	1'-1.5'	1				X														X				
236						AH-4	2'-2.5'																							
237						AH-5	0-1'									X														
238						AH-5	1'-1.5'																							
239						AH-5	2'-2.5'																							
240						AH-6	0-1'									X														
241						AH-6	1'-1.5'																							
242						AH-6	2'-2.5'																							
243						AH-7	0-1'									X														
244	✓		✓		✓	AH-7	1'-1.5'	✓				✓																		

RELINQUISHED BY: (Signature)

Robert L. Lumbke Jr.

Date: 2/11/10

Time: 12:00

RECEIVED BY: (Signature)

RECEIVED BY: (Signature)

Date: 2/11/10

Time: 11:00

SAMPLED BY: (Print & Initial)

Robert Lumbke Jr.

Date: 2-11-10

Time: 02540

RELINQUISHED BY: (Signature)

Date: _____

Time: _____

RECEIVED BY: (Signature)

RECEIVED BY: (Signature)

Date: _____

Time: _____

SAMPLE SHIPPED BY: (Circle)

FEDEX BUS

HAND DELIVERED UPS

AIRBILL #: _____

OTHER: _____

RELINQUISHED BY: (Signature)

Date: _____

Time: _____

RECEIVED BY: (Signature)

RECEIVED BY: (Signature)

Date: _____

Time: _____

TETRA TECH CONTACT PERSON:

Ike Tavoraz

Results by:

RUSH Charges
Authorized:

Yes No

RECEIVING LABORATORY:

ADDRESS:

CITY: Midland STATE: TX ZIP: _____

CONTACT: Hensels PHONE: _____ DATE: _____ TIME: _____

SAMPLE CONDITION WHEN RECEIVED:

4.0c intact

REMARKS:

Total TPH exceeds 5,000 mg/kg run deeper sample

Run 6 BTEX on highest TPH

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

Order #: 10021208

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: 3 OF: 4

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:

COG

SITE MANAGER:

Ike Tarriz

PROJECT NO.:

114-16400350

PROJECT NAME:

COG / Pearisall Mt TB

Lan Co, NM
SAMPLE IDENTIFICATION

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	L-4 Co, NM SAMPLE IDENTIFICATION		NUMBER OF	FILTERED (Y)	HCL	HNO3	ICE	NONE	BTX 8021B	TPH 8015	PAH 8270	RCRA Metal	TCLP Metal	TCLP Volatile	TCLP Semi	RCI	GC/MS Vol.	GC/MS Semi	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec	Alpha Beta	PLM (Asbes	Major Anion
	2010																													
222245	2-9		5	X		AH-7	2'-2.5'	1				X														X				
246						AH-8	0-1'								X															
247						AH-8	1'-1.5'																							
248						AH-8	2'-2.5'																							
249						AH-9	0-1'								X															
250						AH-9	1'-1.5'																							
251						AH-9	2'-2.5'																							
252						AH-10	0-1'								X															
253						AH-10	1'-1.5'																							
254						AH-10	2'-2.5'																							

RELINQUISHED BY: (Signature)

Date: 2-11-10

Time: 16:00

RECEIVED BY: (Signature)

Date: 2-11-10

Time: 16:00

SAMPLED BY: (Print & Initial)

Date: 2-11-10

Time: 0945

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

SAMPLE SHIPPED BY: (Circle)

AIRBILL #:

FEDEX

BUS

HAND DELIVERED

UPS

OTHER:

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

TETRA TECH CONTACT PERSON:

Results by:

RECEIVING LABORATORY:

RECEIVED BY: (Signature)

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: Phone: PHONE: DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

4.0°C intact

If total TPH exceeds 5,000 mg/kg run deeper samples

I can't BTEX on highest TPH

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

Order #: 10021208

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: 4 OF: 4

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:

COG

SITE MANAGER:

Jkz Tavaraz

PROJECT NO.:

114-6400350

PROJECT NAME:

COG / Pensacola, FL, TPB
Lea Co, FL

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION					NUMBER	FILTERED	HCL	HNO3	ICE	NONE	BTEX 8021	TPH 8015	PAH 8270	RCRA Me	TCLP Me	TCLP Vol	TCLP Ser	RCI	GC/MS V	GC/MS S	PCB's 808	Pest. 808	Chloride	Gamma S	Alpha Be	PLM (Ash	Major An	
	2010																																	
22225	2-9		S		X	AH-11	0-1'								X			X											X					
256						AH-11	1-1.5'																											
257						AH-11	2-2.5'																											
258						AH-12	0-1'											X																
259						AH-12	1-1.5'																											
260						AH-12	2-2.5'																											
261						AH-13	0-1'											X																
262						AH-13	1-1.5'																											
263						AH-13	2-2.5'																											
264	✓		✓		✓	AH-13	3-3.5'								✓													✓						

RELINQUISHED BY: (Signature)

Robert [Signature]

Date: 2-10-10

Time: 1600

RECEIVED BY: (Signature)

[Signature]

Date: 2/11/10

Time: 16:00

SAMPLED BY: (Print & Initial)

Date:

Time:

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

SAMPLE SHIPPED BY: (Circle)

FEDEX

BUS

AIRBILL #:

HAND DELIVERED

UPS

OTHER:

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

TETRA TECH CONTACT PERSON:

Results by:

RECEIVING LABORATORY:

ADDRESS:

CITY:

STATE:

ZIP:

CONTACT:

PHONE:

DATE:

TIME:

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

4.0°C intact

If total TPH exceeds 5,000 mg/kg run deeper samples

12an L BTEX on his last TPB

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

APPENDIX C
INITIAL/FINAL C-141

RECEIVED

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

MAR 3 1 2010

HOBBSSOCD

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: Kanicia Carrillo
Address: 550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No. 432-685-4332
Facility Name: Pearsall AX #5	Facility Type: Tank Battery

Surface Owner: Federal	Mineral Owner:	Lease No. 30-025-36361
------------------------	----------------	------------------------

LOCATION OF RELEASE

Unit Letter: K	Section: 33	Township: 17S	Range: 32E	Feet from the: 1650	North/South Line: South	Feet from the: 1650	East/West Line: West	County: Lea
----------------	-------------	---------------	------------	---------------------	-------------------------	---------------------	----------------------	-------------

Latitude: N32.47.311 Longitude: W103.46.466

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 260bbbls	Volume Recovered: 0
Source of Release: Pump	Date and Hour of Occurrence: 12/08/09 Afternoon	Date and Hour of Discovery: 12/08/09 Afternoon
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Jeff Leaking, NMOCD Paul Evans, BLM	
By Whom? Pat Ellis	Date and Hour: 12/08/09 @ 3:00pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse:	

If a Watercourse was Impacted, Describe Fully:*

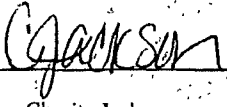
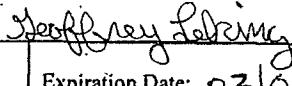
Describe Cause of Problem and Remedial Action Taken:*

The spill was caused by a broken swedge on the circulating pump. The swedge was replaced.

Describe Area Affected and Cleanup Action Taken:*

The spill area affected is approximately 10'x 900'. Picked up all free fluid, waiting on BLM approval to remove 2' of the saturated soil. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD/BLM for your 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: Chasity Jackson		ENV. ENGINEER: Approved by District Supervisor: 	
Title: Agent for COG		Approval Date: 12/31/09	Expiration Date: 03/04/10
E-mail Address: cjackson@conchoresources.com		Conditions of Approval: DELIVERATE TO CLEAN + 1, SUBMIT FINAL C-141 BY 02/04/10	
Date: 12/10/09	Phone: 432-686-3087	Attached ☐ IRP-09-12-2373	

* Attach Additional Sheets If Necessary

FQRL 09 36540213

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

RECEIVED

MAR 31 2010

HOBBS

Form C-141
Revised June 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, Tx 79701	Telephone No. (432) 685-4332	
Facility Name: Pearsall AX #5	Facility Type: Oil Well - Tank Battery	
Surface Owner Federal	Mineral Owner	Lease No. 30-025-36361

LOCATION OF RELEASE

Unit Letter	Section\	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	33	17S	32E	1650	South	1650	West	Lea

Latitude N32.47311 Longitude W103.46466

NATURE OF RELEASE

Type of Release Oil	Volume of Release 260 bbls	Volume Recovered 0 bbls
Source of Release Circulating Pump	Date and Hour of Occurrence 12/08/09 afternoon	Date and Hour of Discovery 12/08/09 afternoon
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Jeff Leaking NMOCD Paul Evans - BLM	
By Whom? Pat Ellis	Date and Hour 12/08/09 @ 3:00 pm	
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 spill was caused by a broken swedge on a circulating pump. The swedge was replaced.

Describe Area Affected and Cleanup Action Taken.*

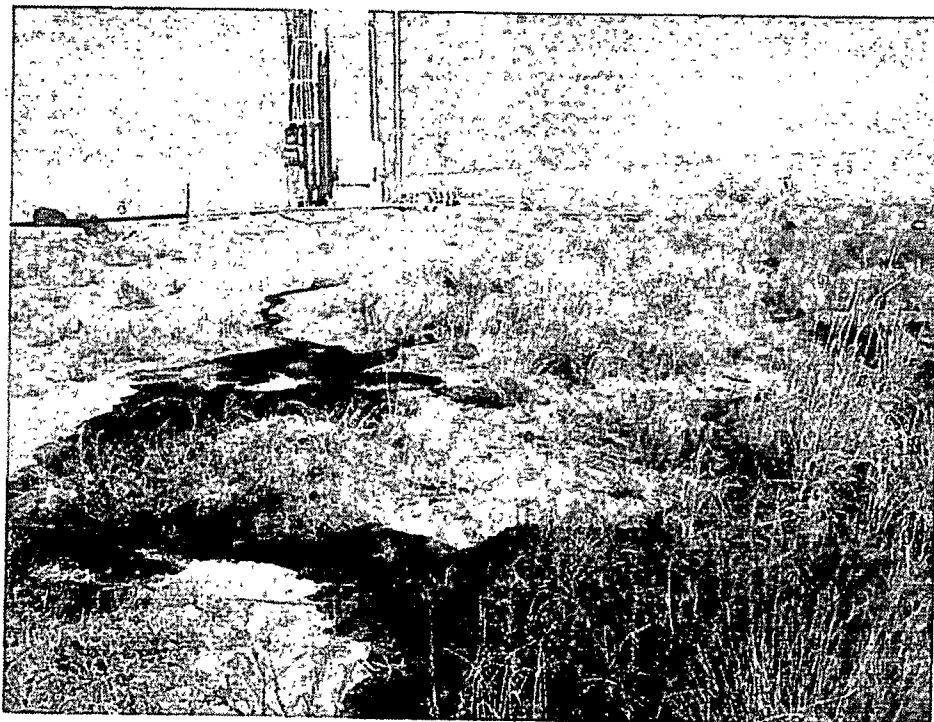
The spill an area measuring approximately 10' x 900'. The site was excavated to a depth of 1' below ground surface (bgs) and soils transported offsite for proper disposal. Upon completion, Tetra Tech personnel were onsite to perform confirmation samples at the site. No BTEX, TPH or chlorides were found to be at the site above their respective RRAL.

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: <u>Patrick L. Ellis</u>		OIL CONSERVATION DIVISION	
Printed Name: Patrick L. Ellis		Approved by District Supervisor: <u>Jeffrey Leaking</u>	
Title: Environmental Health and Safety Supervisor		Approval Date: <u>04/29/10</u>	Expiration Date: <u>—</u>
E-mail Address: PELLIS@conchoresources.com		Conditions of Approval:	
Date: 01/28/10 Phone: (432) 686-3023		Attached ☐ IRP - 09-12-2373	

* Attach Additional Sheets If Necessary

COG - Pearsall AX #5
Lea County, New Mexico



View spill area



View of spill area

COG - Pearsall AX #5
Lea County, New Mexico

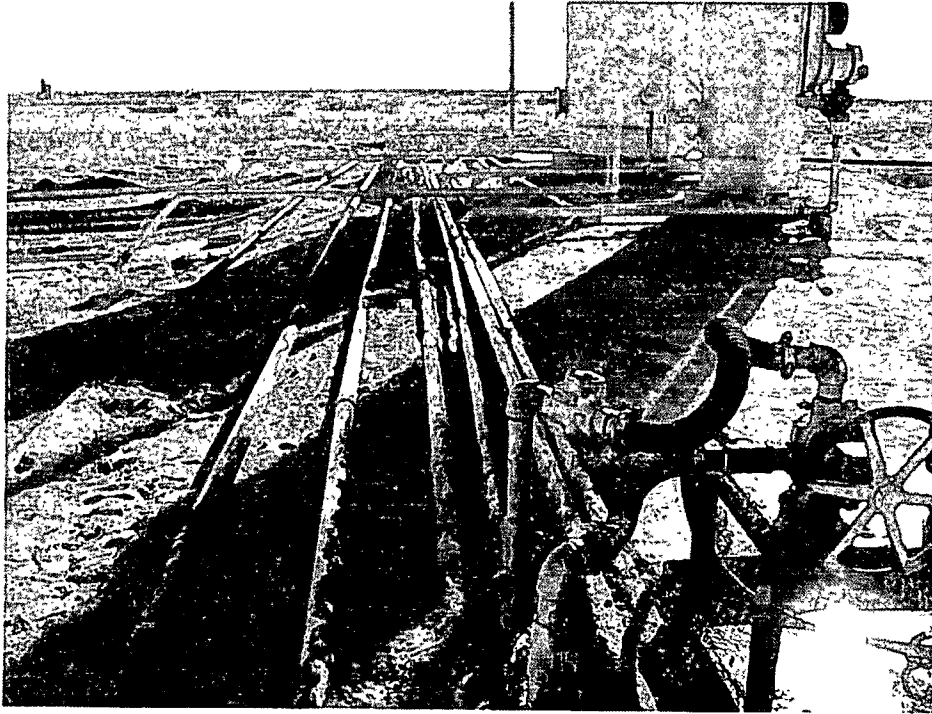


View spill area



View of spill area

COG - Pearsall AX #5
Lea County, New Mexico

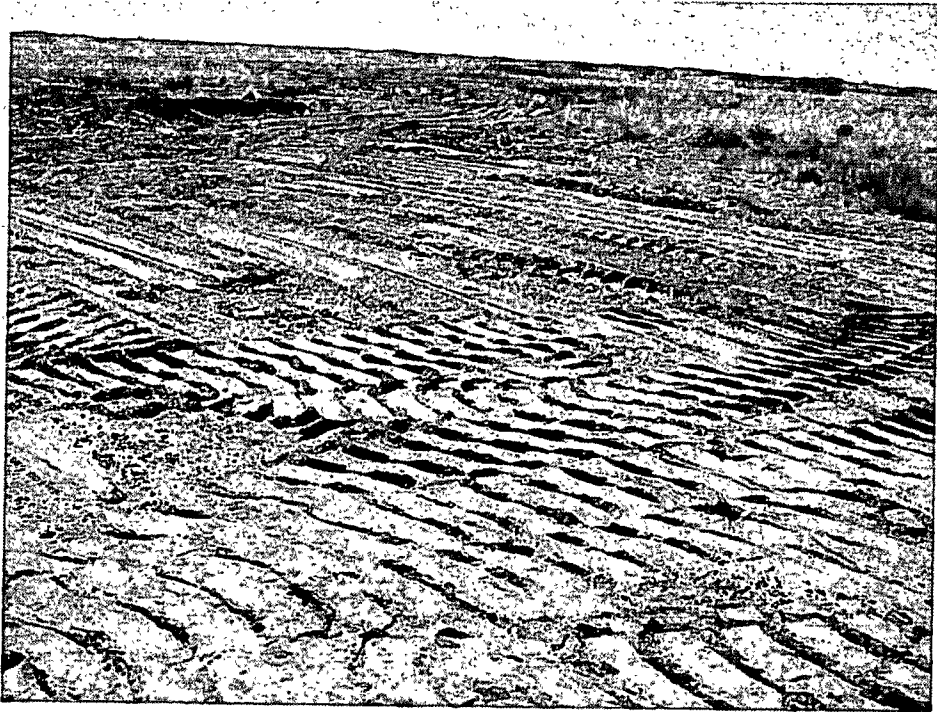


View excavated spill area

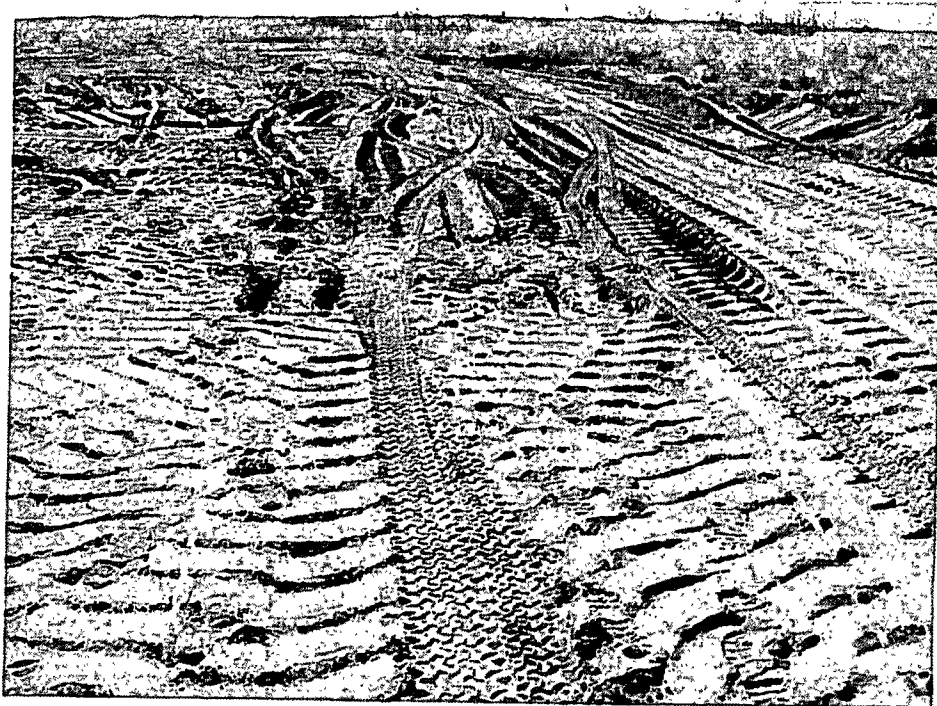


View of excavated spill area

COG - Pearsall AX #5
Lea County, New Mexico



View excavated spill area



View of excavated spill area

COG - Pearsall AX #5
Lea County, New Mexico



View excavated spill area



View of excavated spill area