

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

HOBBS OCD

Form C-141
Revised October 10, 2003

OCT 23 2012 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Lowe 20 #1 Tank Battery	Facility Type	Tank Battery
Surface Owner	Private	Mineral Owner	
		Lease No. (API#) 30-025-32860	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	20	13S	38E					Lea

Latitude 33.183427 Longitude 103.115784

NATURE OF RELEASE

Type of Release	Produced water	Volume of Release	42bbbls	Volume Recovered	40bbbls
Source of Release	Water tank	Date and Hour of Occurrence	01/14/2011	Date and Hour of Discovery	01/14/2011 7:30 a.m.
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	Geoffrey Leking—OCD		
By Whom?	Josh Russo	Date and Hour	01/14/2011 4:36 p.m.		
Was a Watercourse Reached?	☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Overload tripped on water transfer pump. The overload has been reset and the pump has been returned to service. An alarm has been installed to prevent future release.

Describe Area Affected and Cleanup Action Taken.*

Initially 42bbbls of produced water was released from the tank and we were able to recover 40bbbls with a vacuum truck. The release was completely contained inside the firewall of the facility and measured an area of 20' x 60' around the tanks. All free fluid has been recovered and the tank battery has been dug out; contaminated soil has been hauled off. Tetra-Tech will sample the spill site area to delineate any possible contamination from the release.

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.

OIL CONSERVATION DIVISION

Signature:			
Printed Name:	Josh Russo	Approved by District Supervisor:	
Title:	HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address:	jrusso@conchoresources.com	Conditions of Approval:	
Date:	01/26/2011	Phone:	432-212-2399
		Attached ☐	

* Attach Additional Sheets If Necessary

Obispo I
1435 N. French Tr., Hobbs, NM 88240
Obispo II
1301 W. Grand Avenue, Artesia, NM 88210
Obispo III
1650 Rio Tuzos Road, Aztec, NM 87410
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Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COQ OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Lower 20 #1 Tank Battery	Facility Type	Tank Battery
Surface Owner	Private	Mineral Owner	
		Lease No. (API #)	30-025-32860

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	20	13N	38E					Lea

Latitude 33.183427 Longitude 103.115784

NATURE OF RELEASE

Type of Release	Produced fluids	Volume of Release	80bbls	Volume Recovered	70bbls
Source of Release	Water Tank	Date and Hour of Occurrence	07/18/2010	Date and Hour of Discovery	07/18/2010 3:00 p.m.
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Larry Johnson—OCD Geoffrey Leding—OCD			
By Whom?	Pat Ellis	Date and Hour	07/20/2010 4:35 p.m.		
Was a Watercourse Reached?	☐ Yes ☒ No	If YES, Volume Impinging the Watercourse.			
If a Watercourse was Impacted, Describe Fully.*					
Describe Cause of Problem and Remedial Action Taken.* There was a malfunction at the dump valve on the SWD line. The dump valve on the SWD line has been replaced.					
Describe Area Affected and Cleanup Action Taken.* Initially 80bbls of produced water was released from the water tank and we were able to recover 70bbls. The release was contained inside the dike walls of the facility. The dimensions of the spill area were 20' x 80'. The chloride concentration of the produced water in this area is 135,500 mg/l. (The closest well location to the release is the Lower 20 #1, Unit 7, Sec.20-T13N-R38E,35D' PNL, 1550' PTD., API# 30-025-32860). Terra Tech will sample the spill site area to determine any possible contamination from the release and we will present a remediation work plan to the OCD for approval prior to any significant remediation.					
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC 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 NMOC 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, NMOC acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.					
Signature: 		OIL CONSERVATION DIVISION			
Printed Name: Josh Russo		Approved by District Supervisor:			
Title: HSB Coordinator		Approval Date:		Expiration Date:	
E-mail Address: jrusso@enematerialresources.com		Conditions of Approval:		Attached ☐	
Date: 07/30/2010		Phone: 432-212-2399			

* Attach Additional Sheets if Necessary

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Release Notification and Corrective Action

OPERATOR ☐ Initial Report ☒ Final Report

Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 230-0077
Facility Name	Lowe 20 #1 Tank Battery	Facility Type	Tank Battery
Surface Owner: Private		Mineral Owner	Lease No. (API#) 30-025-23860

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	20	13S	38E					Lea

Latitude N 33.183427° Longitude W 103.115784°

NATURE OF RELEASE

Type of Release: Produced Fluids	Volume of Release 80bbls	Volume Recovered 70bbls
Source of Release: Water Tank	Date and Hour of Occurrence 07/18/2010	Date and Hour of Discovery 07/18/2010 3:00 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Larry Johnson-OCD Geoffrey Leking-OCD	
By Whom? Pat Ellis	Date and Hour 07/20/2010 4:36 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

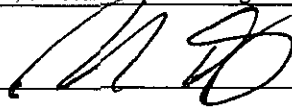
Describe Cause of Problem and Remedial Action Taken.*

There was a malfunction at the dump valve on the SWD line. The dump valve on the SWD line has been replaced.

Describe Area Affected and Cleanup Action Taken.*

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

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

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

* Attach Additional Sheets If Necessary

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Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 230-0077
Facility Name	Lowe 20 #1 Tank Battery	Facility Type	Tank Battery

Surface Owner: Private	Mineral Owner	Lease No. (API#) 30-025-32860
------------------------	---------------	-------------------------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	20	13S	38E					Lea

Latitude N 33.183427° Longitude W 103.115784°

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release 42bbls	Volume Recovered 40bbls
Source of Release: Water tank	Date and Hour of Occurrence 01/14/2011	Date and Hour of Discovery 01/14/2011 7:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Geoffrey Leking-OCD	
By Whom? Josh Russo	Date and Hour 01/14/2011 4:36 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

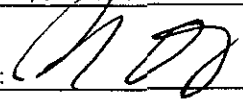
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Overload tripped on water transfer pump. The overload has been reset and the pump has been returned to service. An alarm has been installed to prevent future release.

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

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

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

* Attach Additional Sheets If Necessary

SITE INFORMATION

Report Type: Work Plan

General Site Information:

Site:	Lowe 20 #1 Tank Battery	RECEIVED OCT 27 2010 HOBBSOCD
Company:	COG Operating LLC	
Section, Township and Range	Section 20, T13S, R38 E Unit Letter - B	
Lease Number:	30-025-32860	
County:	Lea County	
GPS:	33 183427° N, 103.115784° W	
Surface Owner:	Private	
Mineral Owner:		
Directions:	From Tatum, NM, go 14.5 miles east on Highway 380, turn right (south) on Farm Road for 4.8 miles, turn right (west) and go 3.0 miles, turn left (south) go 0.1 mile to site.	

Release Data:

Date Released:	7/18/2010
Type Release:	Produced water
Source of Contamination:	Water Tank
Fluid Released:	80 barrels
Fluids Recovered:	70 barrels

Official Communication:

Name:	Pat Ellis	Ike Tavaréz
Company:	COG Operating, LLC	Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300	1910 N. Big Spring
P.O. Box		
City:	Midland Texas, 79701	Midland, Texas
Phone number:	(432) 685-4332	(432) 631-0348
Fax:	(432) 684-7137	
Email:	pellis@conchoresources.com	ike.tavaréz@tetrattech.com

Ranking Criteria

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

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	100



TETRA TECH

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OCT 27 2010
HOBBSOCD

October 11, 2010

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

Re: Work Plan for the COG Operating LLC., Lowe 20 #1 Tank Battery, Unit B, Section 20, Township 13 South, Range 38 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill at the Lowe 20 #1 Tank Battery, Unit B, Section 20, Township 13 South, Range 38 East, Lea County, New Mexico. (Site). The spill site coordinates are N 33.183427°, W 103.115784°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on July 18, 2010 and released approximately eighty (80) barrels of produced water due to a malfunction of the dump valve on the SWD line. To alleviate the problem, COG personnel repaired the dump valve. Seventy (70) barrels of standing fluids were recovered. The spill was contained within the berm of the tank battery. The initial C-141 form is enclosed in Appendix C.

Groundwater

The New Mexico Office of the State Engineer data base did show wells in Section 20, T13S, R38E, with reported depths to groundwater of 40' and 50' below surface. The United States Geological Survey (USGS) Well Reports did not list any wells in Section 20. However, wells were reported in Section 17 (95') and Section 21 (66'). The groundwater data information is shown in Appendix B.

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4599 Fax 432.682.3946 www.tetratech.com



Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 100 mg/kg.

Soil Assessment and Analytical Results

On September 7, 2010, Tetra Tech personnel inspected and sampled the spill area, which measured approximately 30' x 80' inside the dike. A total of six (6) auger holes (AH-1 through AH-6) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of the laboratory analysis and chain-of-custody documentation are included in Appendix B. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the auger holes showed TPH concentrations exceeding the RRAL at 0-1' below surface. Auger hole (AH-1) was vertically defined at 2.0' below surface. The remaining auger holes were not vertically defined below the TPH RRAL of 100 mg/kg. The total BTEX also exceeded the RRAL in the majority of the auger holes. However, the total BTEX did decline below the RRAL in AH-1 (2.0') and AH-2 (1.0'). Auger holes (AH-3 and AH-4) were not vertically defined. Chloride concentrations were only detected in AH-4 and AH-5 with concentrations of 707 mg/kg and 345 mg/kg at 1-1.5', respectively.

Work Plan

Tetra Tech proposes to supervise the removal of impacted soils above the RRAL from inside the tank battery dike. Once excavated, confirmation samples will be collected for TPH and BTEX. In addition, in the area of AH-4, deeper samples (backhoe trench) will be collected to define the chloride impact in the area, if accessible. The excavations will



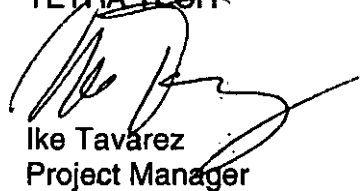
TETRA TECH

left open until the confirmation samples are evaluated. If the confirmation samples are below the RRAL, the excavations will be backfilled with clean soil.

Since the impacted area is inside the tank battery firewall, the excavation depths may not be reached due to wall cave ins and safety concerns for equipment and equipment operators as well as other onsite personnel. As such, Tetra Tech will excavate the soils to the maximum extent practicable.

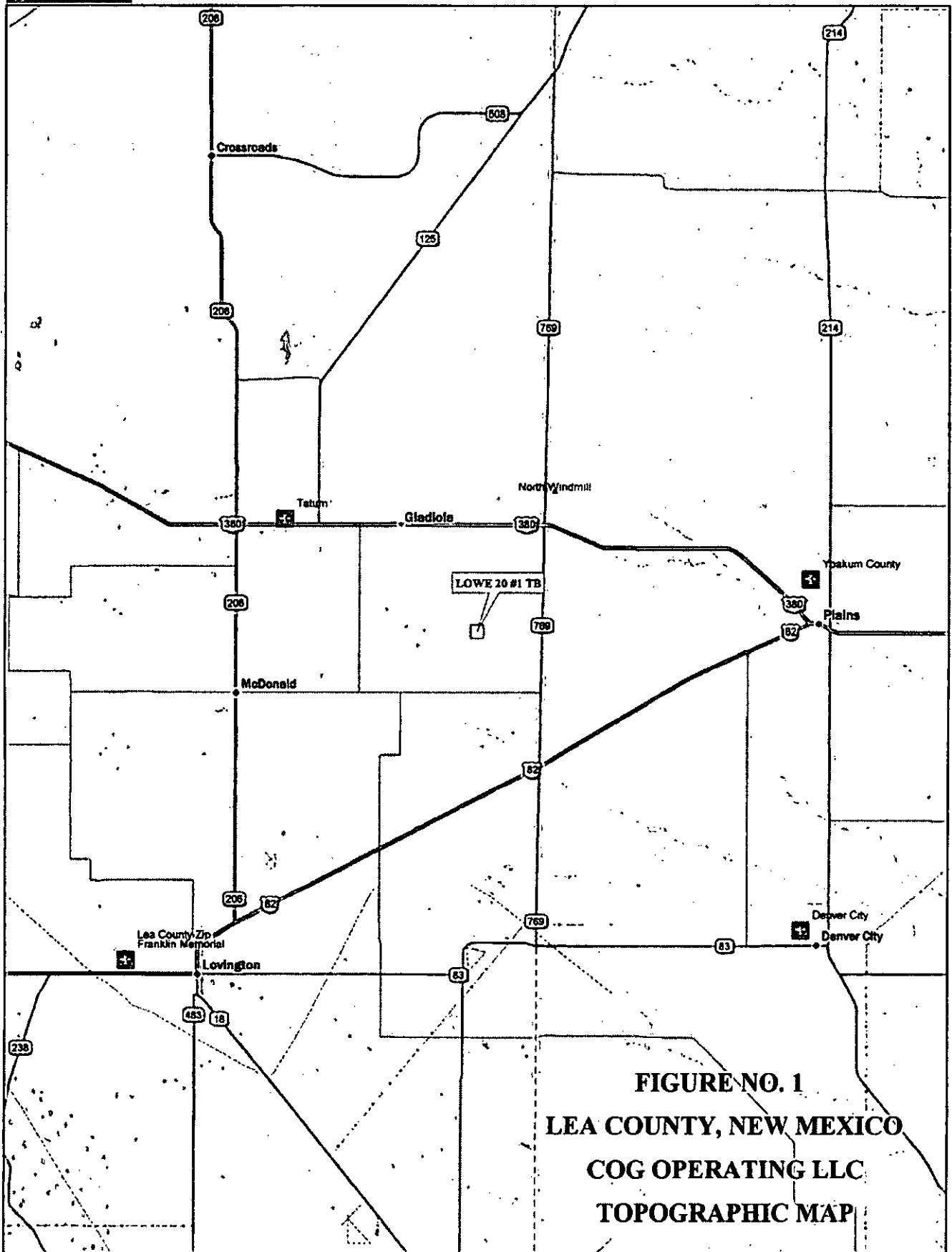
Once completed, Tetra Tech will then prepare a closure report to submit the NMOCD for review. If you require any additional information or have any questions or comments concerning this Work Plan and Assessment Report, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH



Ike Tavarez
Project Manager

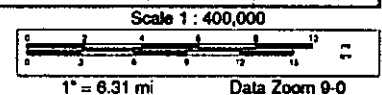
cc: Pat Ellis – COG



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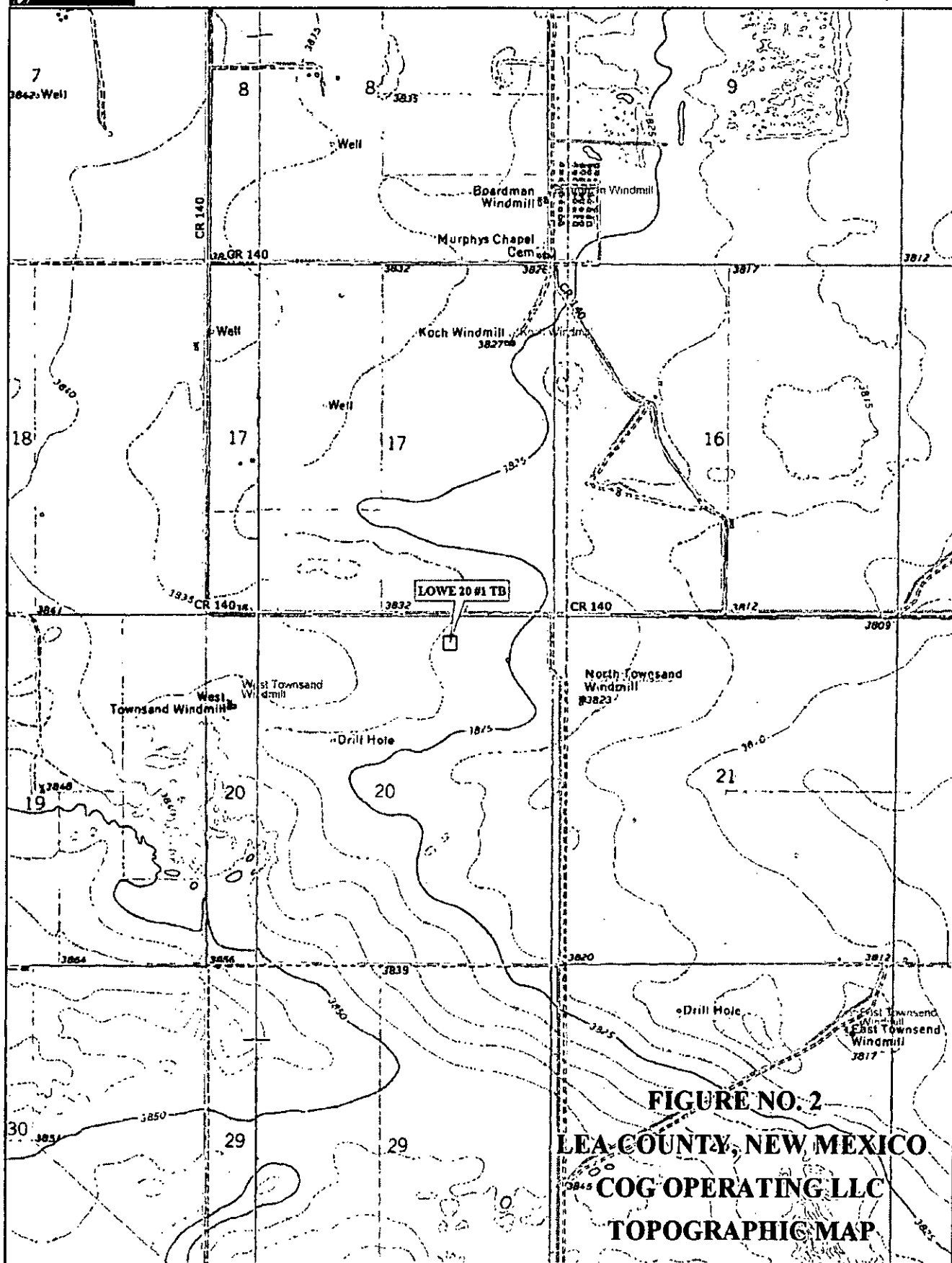


FIGURE NO. 2
LEA COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

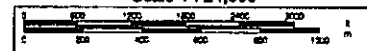
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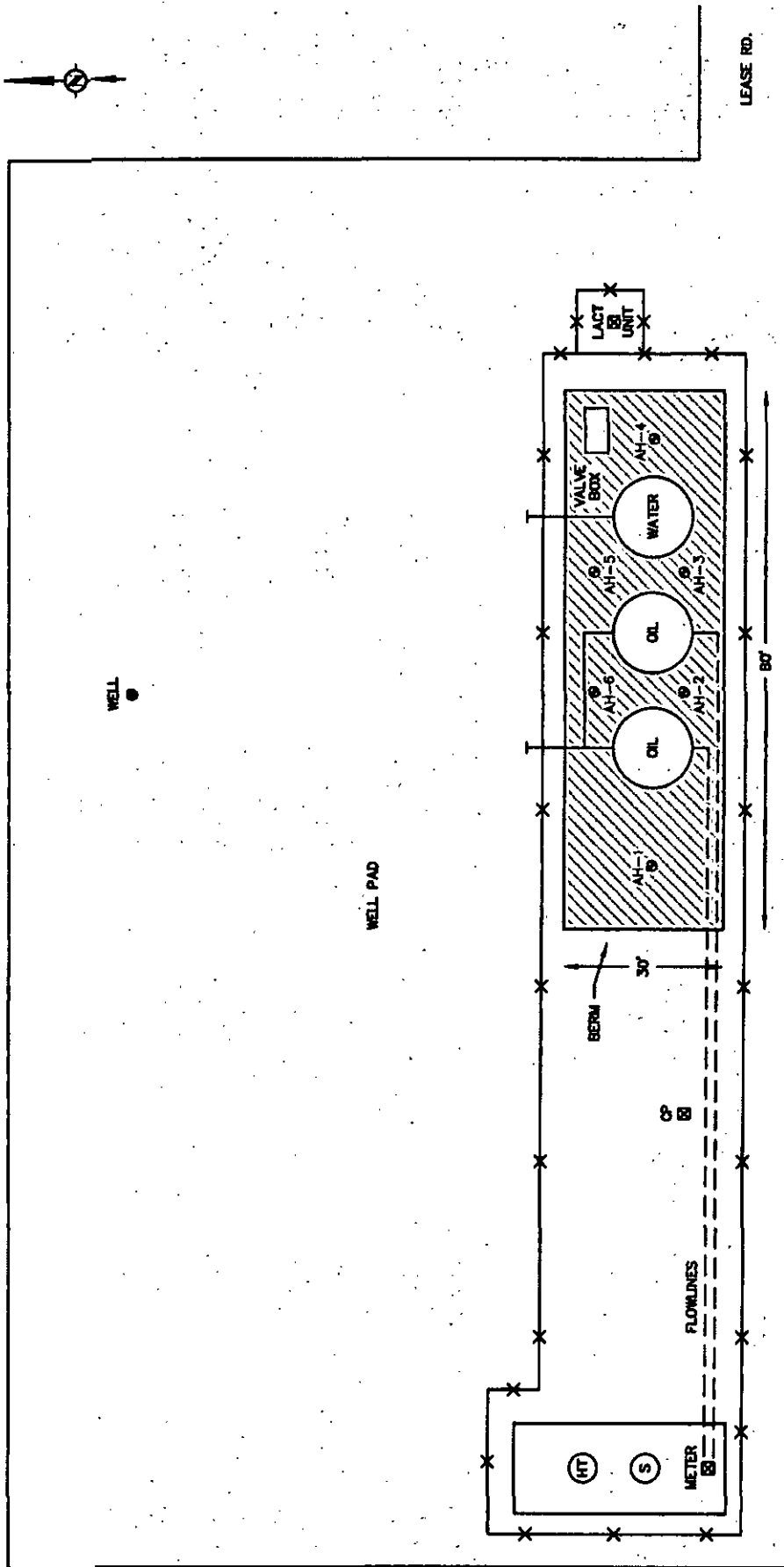
www.delorme.com



Scale 1 : 24,000



1" = 2,000.0 ft Data Zoom 13-0



FIGURES NO. 3

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

LOWE 20 #1 TB

TETRA TECH, INC.
MIDLAND, TEXAS

DATE
10/8/10

DRILLER
JL

PLS
REVIEWER
JL

NOT TO SCALE

SPILL AREA
SAMPLE LOCATIONS

Table 1
COG Operating LLC.
LOWE 20 #1 TANK BATTERY
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	9/7/2010	0-1'		X		1,320	279	1,599	3.54	18.6	18.6	63.5	<200
	"	1-1.5'		X		663	703	1,366	5.42	16.0	32.3	64.4	<200
	"	2-2.5'		X		<20.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<200
AH-2	9/7/2010	0-1'		X		1,930	546	2,476	1.43	4.28	25.8	56.8	<200
	"	1-1.5'		X		104	404	508	0.480	<0.200	2.77	5.76	<200
AH-3	9/7/2010	0-1'		X		747	536	1,283	0.911	9.03	23.4	44.9	<200
AH-4	9/7/2010	0-1'		X		838	555	1,393	1.36	17.0	23.1	39.2	256
	"	1-1.5'		X		538	932	1,470	2.62	27.7	39.3	59.2	707
AH-5	9/7/2010	0-1'		X		382	141	523	-	-	-	-	466
	"	1-1.5'		X		-	-	-	-	-	-	-	345
AH-6	9/7/2010	0-1'		X		190	76.5	266.5	-	-	-	-	<200
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
	"	5-5.5'		X		-	-	-	-	-	-	-	<200

BEB Below Excavation Bottom

(--) Not Analyzed

Water Well Data
Average Depth to Groundwater (ft)
COG - Lowe 20 #1 Tank Battery
Lea County, New Mexico

12 South			37 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
					30

12 South			38 East		
6 SITE	5	4	3	2	
42	65				
7	8	9	10	11	
36	46	50			
18	17	16	15	14	
19	20	21	22	23	
30	29	28	27	26	
31	32	33	34	35	

13 South			37 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

13 South			38 East		
6	5	4	3	2	65
7	8 70	9	10 60	11	
	100	105	100	70	
18 59	17 95	16	15	14	
90					
19 53	20 40	21 66	22 100	23	
110	50	60	120	120	
30 80	29 72	28	27 53	26	
31 87	32	33	34	35	
					120

14 South			37 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 90	22	23	24
30 75	29 75	28 81	27 74	26	25 85
	77		62	44	55 65
31 80	32 74	33	34 58	35 68	36 55
	73		83 79		63 71

14 South			38 East		
6	5	4	3	2	
7	8	9	10	11	
18	17	16	15	14	
19 59	20	21	22	23	
50					
30 40	29	28	27	26	
31	32	33	34	35	

- 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
- 123 Field water level
- 143 NMOCD Groundwater map well location

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 1301 W. Grand Avenue, Artesia, NM 88210
 District III
 1000 Rio Grande Road, Aztec, NM 87410
 District IV
 1230 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
 Energy Minerals and Natural Resources

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

Form C-141
 Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Lower 20 #1 Tank Battery	Facility Type	Tank Battery
Surface Owner	Private	Mineral Owner	
		Lease No. (API #)	30-025-32860

LOCATION OF RELEASE

Well Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	20	13N	38E					Lea

Latitude 33.183427 Longitude 103.115784

NATURE OF RELEASE

Type of Release	Produced fluids	Volume of Release	80bbls	Volume Recovered	70bbls
Source of Release	Water Tank	Date and Hour of Occurrence	07/18/2010	Date and Hour of Discovery	07/18/2010 3:00 p.m.
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	Larry Johnson—OCD Geoffrey Leding—OCD		
By Whom?	Pat Ellis	Date and Hour	07/20/2010 4:30 p.m.		
Was a Watercourse Reached?	☐ Yes ☒ No	If YES, Volume Impinging the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

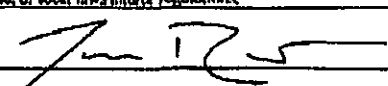
There was a malfunction at the dump valve on the SWD line. The dump valve on the SWD line has been replaced.

Describe Area Affected and Cleanup Action Taken.*

Initially 80bbls of produced water was released from the water tank and we were able to recover 70bbls. The release was contained inside the effluents of the facility. The dimensions of the spill area were 20' x 80'. The chloride concentration of the produced water in this area is 135,500 mg/l. (The closest well location to the release is the Lower 20 #1, Unit B, Sec 20-T138-R38E, 350' FNL 1550' FWS, API# 30-025-32860). Town Tech will sample the spill site area to determine any possible contamination from the release and we will present a remediation work plan to the OCD for approval prior to any spill/leak remediation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCB 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 NMOCB 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, NMOCB 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.

OIL CONSERVATION DIVISION

Signature:		Approved by District Supervisor:	
Printed Name:	Josh Russo	Approval Date:	Expiration Date:
Title:	HSE Coordinator	Conditions of Approval:	
E-mail Address:	jrusso@enochresources.com	Attached ☐	
Date:	07/30/2010	Phone:	432-212-3399

* Attach Additional Sheets if Necessary

Summary Report

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

Report Date: September 27, 2010

Work Order: 10091329



Project Location: Lea Co., NM
Project Name: COG/Lowe 20 #1 TB
Project Number: 114-6400674

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
244413	AH-1 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244414	AH-1 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244415	AH-1 2-2.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244416	AH-2 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244417	AH-2 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244418	AH-3 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244419	AH-4 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244420	AH-4 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244421	AH-5 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244422	AH-5 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244423	AH-6 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244424	AH-6 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244425	AH-6 2-2.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244426	AH-6 3-3.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244427	AH-6 4-4.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244428	AH-6 5-5.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10

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)
244413 - AH-1 0-1' 1' BEB	3.54	18.6	18.6	63.6	279	1320
244414 - AH-1 1-1.5' 1' BEB	5.42	16.0	32.3	64.4	703	663
244415 - AH-1 2-2.5' 1' BEB	<0.200	<0.200	<0.200	<0.200	<50.0	<20.0
244416 - AH-2 0-1' 1' BEB	1.43	4.28	25.8	56.8	546	1930
244417 - AH-2 1-1.5' 1' BEB	0.480	<0.200	2.77	5.76	404	104
244418 - AH-3 0-1' 1' BEB	0.911	9.03	23.4	44.9	536	747
244419 - AH-4 0-1' 1' BEB	1.36	17.0	23.1	39.2	555	838
244420 - AH-4 1-1.5' 1' BEB	2.62	27.7	39.3	59.2	932	538
244421 - AH-5 0-1' 1' BEB					141	382

continued ...

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296

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

... continued

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)
244423 - AH-6 0-1' 1' BEB					76.5	190

Sample: 244413 - AH-1 0-1' 1' BEB

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

Sample: 244414 - AH-1 1-1.5' 1' BEB

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

Sample: 244415 - AH-1 2-2.5' 1' BEB

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

Sample: 244416 - AH-2 0-1' 1' BEB

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

Sample: 244417 - AH-2 1-1.5' 1' BEB

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

Sample: 244418 - AH-3 0-1' 1' BEB

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

Sample: 244419 - AH-4 0-1' 1' BEB

continued ...

sample 244419 continued ...

Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		256	mg/Kg	4.00

Sample: 244420 - AH-4 1-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		707	mg/Kg	4.00

Sample: 244421 - AH-5 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		466	mg/Kg	4.00

Sample: 244422 - AH-5 1-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		345	mg/Kg	4.00

Sample: 244423 - AH-6 0-1' 1' BEB

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

Sample: 244424 - AH-6 1-1.5' 1' BEB

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

Sample: 244425 - AH-6 2-2.5' 1' BEB

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

Sample: 244426 - AH-6 3-3.5' 1' BEB

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

Sample: 244427 - AH-6 4-4.5' 1' BEB

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

Sample: 244428 - AH-6 5-5.5' 1' BEB

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

W00 #10091329

Analysis Request of Chain of Custody Record



TETRA TECH

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

ANALYSIS REQUEST (Circle or Specify Method No.)

CLIENT NAME CoGi		SITE MANAGER Ik Tavares	
PROJECT NO. 114-440 0674		PROJECT NAME COG / Lane 20 #1 TB	
LAB ID. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
244423	9/7		AN-6 0-1' 1' BEB
424			AN-6 1-1.5' 1' BEB
425			AN-6 2-2.5' 1' BEB
426			AN-6 3-3.5' 1' BEB
427			AN-6 4-4.5' 1' BEB
428			AN-6 5-5.5' 1' BEB
PRESERVATIVE METHOD		NUMBER OF CONTAINERS	
HCL		1	
HNO3			
H2O2			
NONE			
BTEX 6021B		X	
TPH 8015 MOD TX1006 (Pd to C35)		X	
PMH 6270			
RCRA Metals Ag As Ba Cd Cr Pb Hg Se			
TCAP Metals Ag As Ba Cd Cr Pb Hg Se			
TCAP Volatiles			
TCAP Semi Volatiles			
RCI			
GC/MS Vol. 8240/8260/824			
GC/MS Semi Vol. 8270/828			
PCB's 8080/808			
Post 808/808			
Germes Spec.			
Alpha Beta (Au)			
PLM (Asbestos)			
Major Airborne/Carbon, pH, TDS			

RELINQUISHED BY (Signature) Ik Tavares	DATE 9/10/00	TIME 15:30
RELINQUISHED BY (Signature)	DATE	TIME
RELINQUISHED BY (Signature)	DATE	TIME
RECEIVING LABORATORY Tetra Tech	DATE 9/10/00	TIME 15:30
ADDRESS 1910 N. Big Spring St.	CITY Midland, TX	STATE TX
ZIP 79705	PHONE (432) 682-4559	FAX (432) 682-3946

REMARKS: **Il Tol 174 elements 100% my/ly run dupes samples**

LABORATORY RETAINS YELLOW COPY - RETURN ORIGINAL COPY TO TETRA TECH - PROJECT MANAGER RETAINS PINK COPY - ACCOUNTING RETAINS GOLD COPY.

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Low 20 #1 Tank Battery
Company:	COG Operating LLC
Section, Township and Range	Section 20, T13S, R38 E Unit Letter - B
Lease Number:	30-025-32860
County:	Lea County
GPS:	33.183427° N, 103.115784° W
Surface Owner:	Private
Mineral Owner:	
Directions:	From Tatum, NM, go 14.5 miles east on Highway 380, turn right (south) on FM 769 for 4.8 miles, turn right (west) on Koch Rd. and go 3.0 miles, turn left (south) go 0.1 mile to site.

Release Data:

	1st Spill	2nd Spill
Date Released:	7/18/2010	1/14/2011
Type Release:	Produced water	Produced water
Source of Contamination:	Water Tank	Water Tank
Fluid Released:	80bbbls	42bbbls
Fluids Recovered:	70bbbls	40bbbls

Official Communication:

Name:	Pat Ellis	Ike Tavaréz
Company:	COG Operating, LLC	Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300	1910 N. Big Spring
P.O. Box		
City:	Midland Texas, 79701	Midland, Texas
Phone number:	(432) 685-4332	432-682-4559
Fax:	(432) 684-7137	
Email:	pellis@conchoresources.com	ike.tavaréz@tetratech.com

Ranking Criteria:

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

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

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TETRA TECH

October 18, 2012

HOBBS OCD

OCT 23 2012

RECEIVED

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

Re: Closure Report for the COG Operating LLC., Lowe 20 #1 Tank Battery, Unit B, Section 20, Township 13 South, Range 38 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess and remediate two releases at the Lowe 20 #1 Tank Battery, Unit B, Section 20, Township 13 South, Range 38 East, Lea County, New Mexico (Site). The spill sites coordinates are N 33.183427°, W 103.115784°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on July 18, 2010 and released approximately eighty (80) barrels of produced water due to a malfunction of the dump valve on the SWD line. To alleviate the problem, COG personnel repaired the dump valve. Seventy (70) barrels of standing fluids were recovered. The spill was contained within the berm of the tank battery. The initial C-141 form is enclosed in Appendix A.

On January 14, 2011, a second release occurred at the site due to the water tank overflowing. Approximately forty-two (42) barrels of produced water were released with forty (40) barrels of fluid were recovered. The spill was entirely contained within the firewalls of the tank battery. The initial C-141 form is enclosed in Appendix A.

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559

Fax 432.682.3946

www.tetrattech.com



Groundwater

The New Mexico Office of the State Engineer data base did show wells in Section 20, T13S, R38E, with reported depths to groundwater of 40' and 50' below surface. The United States Geological Survey (USGS) Well Reports did not list any wells in Section 20. However, wells were reported in Section 17 (95') and Section 21 (66').

On September 20, 2012, Tetra Tech met with Mr. Geoffrey Leking with the NMOCD to discuss the site data and remediation. After reviewing the NMOCD groundwater map, it was determined that the depth to groundwater in the area is approximately 65.0' below surface, which changed the RRAL for the site. The groundwater data information is shown in Appendix B.

Regulatory

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

Soil Assessment and Analytical Results

On September 7, 2010, Tetra Tech personnel inspected and sampled the spill area, which measured approximately 30' x 80' inside the dike. A total of six (6) auger holes (AH-1 through AH-6) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of the laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.



Referring to Table 1, the areas of AH-1, AH-2, AH-3 and AH-4 exceeded the RRAL. The areas of AH-1 and AH-2 were vertically defined at depths of 2-2.5' and 1-1.5', respectively. Auger holes (AH-3 and AH-4) were not vertically defined.

The total BTEX also exceeded the RRAL in the majority of the auger holes. However, the total BTEX did decline below the RRAL in AH-1 (2.0') and AH-2 (1.0'). Auger holes (AH-3 and AH-4) were not vertically defined. Chloride concentrations were only detected in AH-4 and AH-5 with concentrations of 707 mg/kg and 345 mg/kg at 1-1.5', respectively.

Remedial Activities

As stated in the work plan, Tetra Tech personnel were onsite January 13, 2011 to supervise the removal of impacted soils above the RRAL. With the exception of AH-4, the impacted areas were excavated to an approximately depth of 1.0' to 2.0' below surface. Approximately 120 cubic yards were excavated and transported to the R360 facility for proper disposal. While performing the remediation, a second release occurred at the site on January 14, 2011. The second spill area encompassed the top of the first footprint in the areas of AH-2, AH-3, AH-4, AH-5 and AH-6. Once completed, some of the excavation bottoms were evaluated by installing backhoe trenches.

Trench Installation and Evaluation

On January 17, 2011, backhoe trenches (T-1 through T-4) were installed in the areas of AH-2, AH-3, AH-5 and AH-6. In the area of AH-4, a backhoe trench was not accessible due to the equipment and limited spill area. Selected samples were analyzed for TPH, BTEX and chlorides. The sampling results are shown in Table 1.

Referring to Table 1, trenches (T-1 and T-2) were installed in the areas of AH-5 and AH-6, which did not show a significant impact to these soils. In the area of T-3 (AH-3), TPH was not vertically defined and exceeded the RRAL TPH of 3,261 mg/kg at 0-1' (2.0' bottom) and 1,046 mg/kg at 2.0' below excavation bottom (BEB). However, the total BTEX was defined at 0-1' (2.0' bottom). Trench (T-4, AH-2) did not show TPH or BTEX concentrations exceeding the RRAL.

In addition, the chloride samples showed concentrations of 1,140 mg/kg (T-3) at 0-1' (2.0' bottom) and declined to 230 mg/kg at 2.0' BEB. Trench (T-4) showed a chloride of 485 mg/kg at 0-1' (2.0' bottom), which increased to 1,600 mg/kg at 2.0' BEB. The deeper samples did show a slight decline with depth to 885 mg/kg at 4.0' BEB.



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Final Remediation Activities and Conclusions.

On September 20, 2012, Tetra Tech met with Mr. Geoffrey Leking, with the NMOCD, to discuss the remediation results and additional proposed activities. Due to accessibility, the areas of AH-2 and AH-3 proposed additional excavation (1.0' to 2.0') and resample for either TPH or chlorides analysis. Once excavated, these areas would be capped with clay and backfilled to grade with clean material. In addition, the area of AH-4 would require an additional scrape and treatment with a micro-blaze product in order to aid the degradation of the hydrocarbon impact and any additional impact from this area would be deferred until the facility abandonment.

On October 7, 2012, Tetra Tech supervised the excavation at the site. The area of AH-2 and AH-3 were excavated to a depth of 4.0' to 3.0', respectively. Deeper excavation could be performed in these areas due to the dense caliche formation. In addition, the area of AH-4 was only scraped and micro-blazed. Once excavated, confirmation samples (CS-1, CS-2 and CS-3) were collected from each of the areas. The sampling results are shown in Table 1.

An additional 35 cubic yards of soil were excavated and transported to the R360 facility for proper disposal. The excavated areas were capped with a clay liner then backfilled with clean material to surface grade.

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

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Senior Project Manager

cc: Pat Ellis – COG

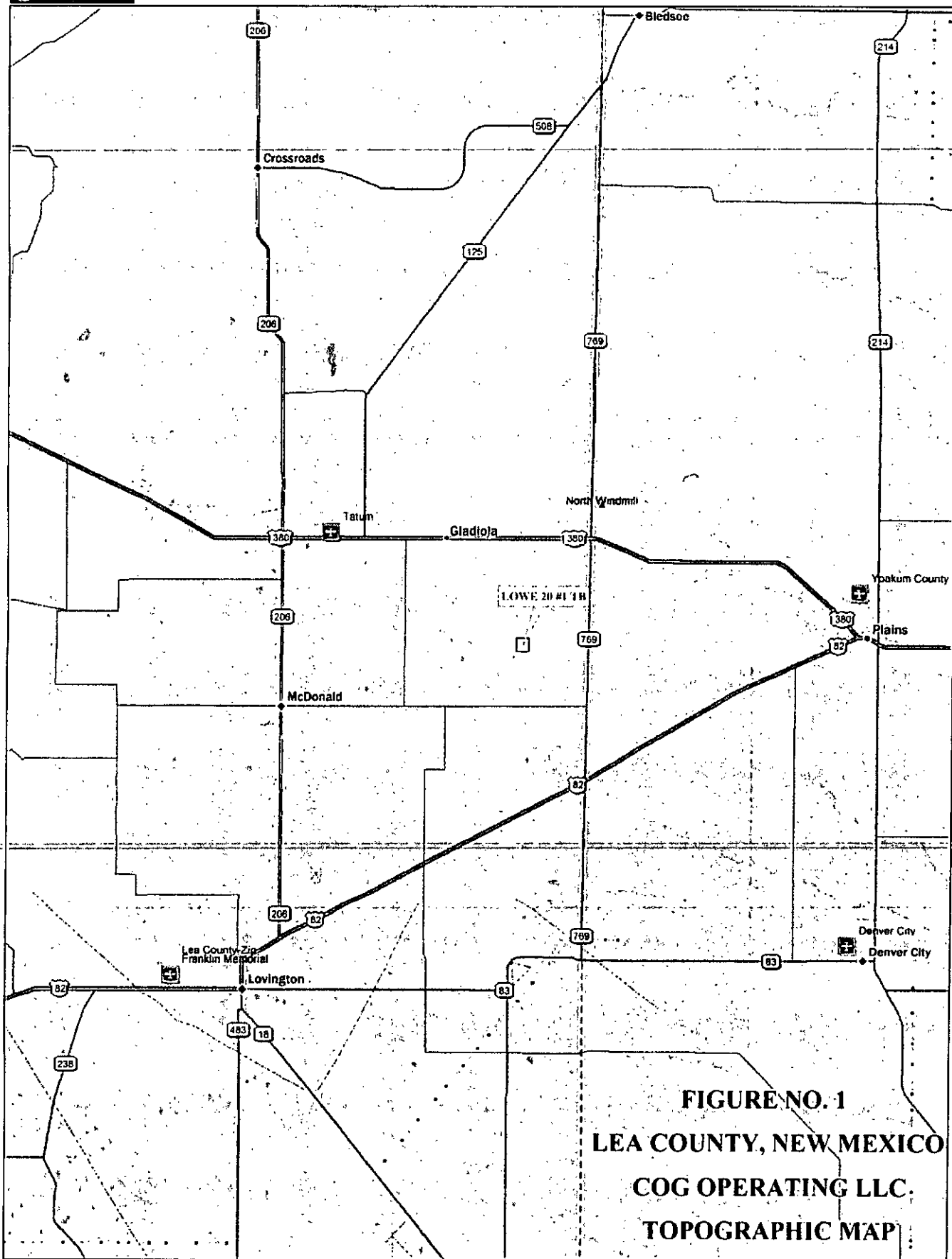
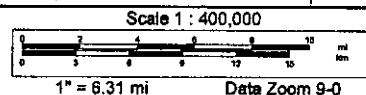


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

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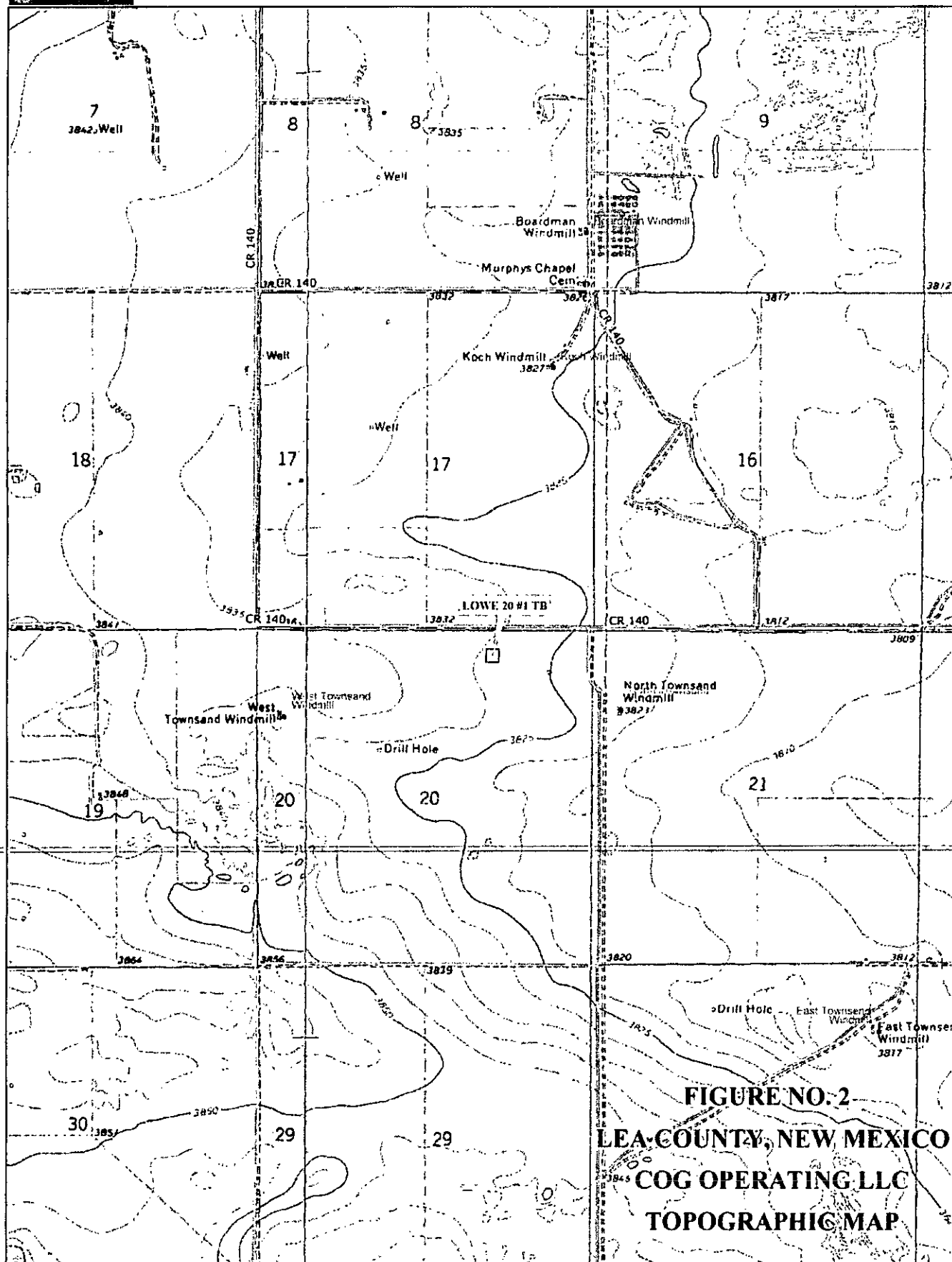
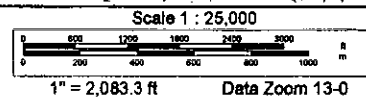


FIGURE NO:2
LEA COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

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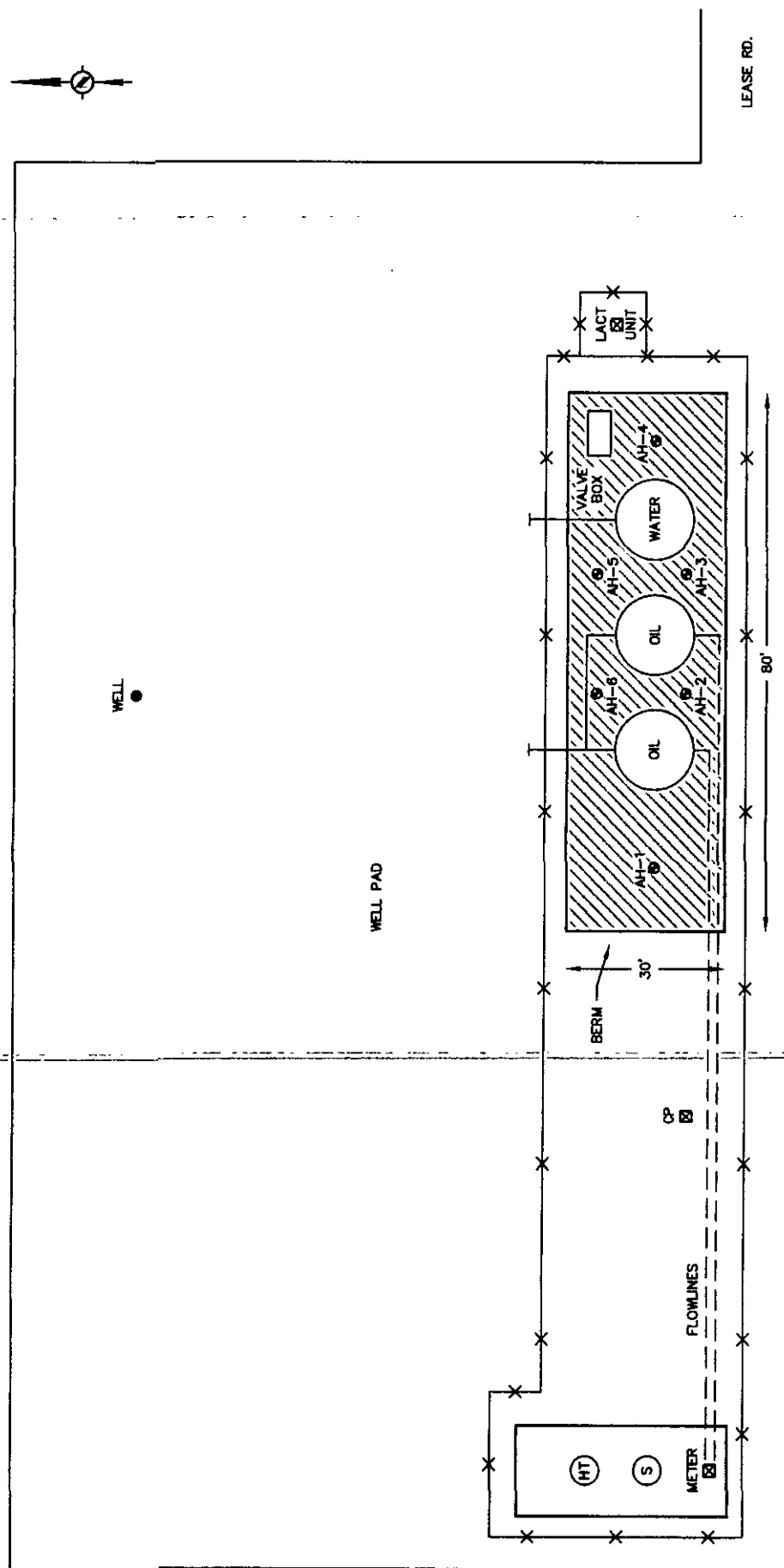


FIGURE NO. 3

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

LOWE 20 #1 TB

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 10/6/10

DATE:

FILE:
t\COG\9400874
CME 30 41 TH

NOT TO SCALE

☒ SPILL AREA
☐ AUGER HOLE SAMPLE LOCATIONS

WELL PAD

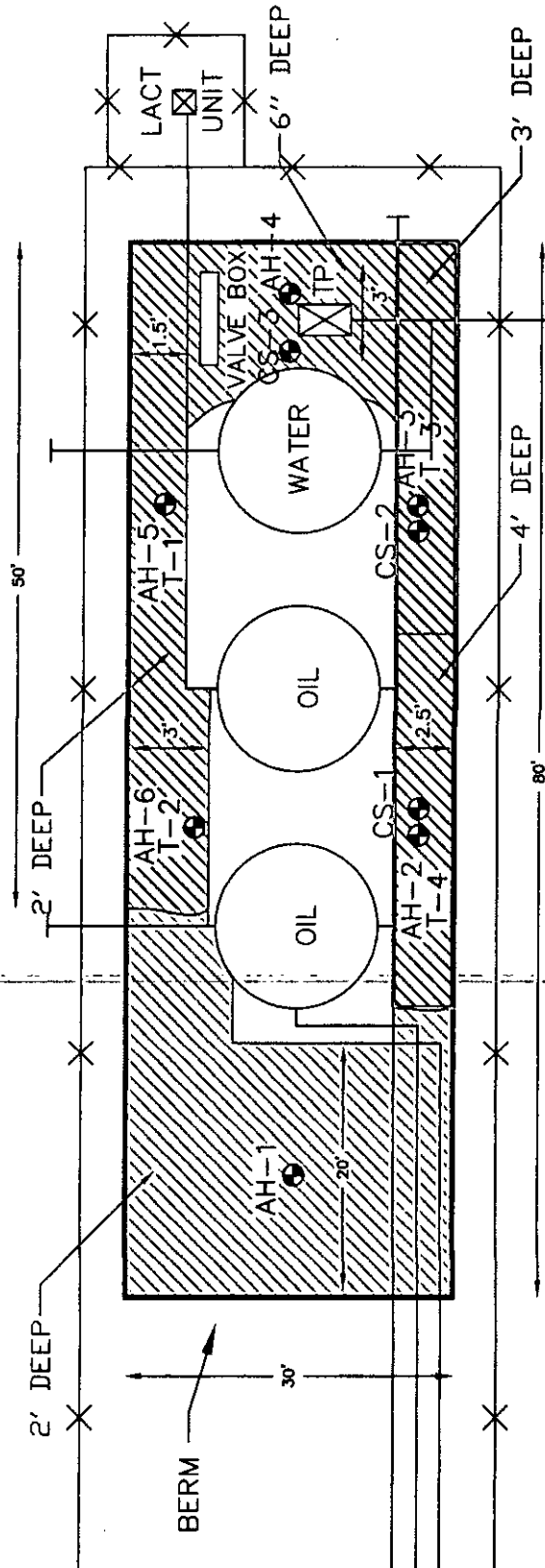


FIGURE NO. 4

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

LOWE 20 #1 TB

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 10/19/2012
DRAWN BY: IN
FILE: TETRA-20-1-TB
SCALE: AS SHOWN

NOT TO SCALE

- AUGER HOLE SAMPLE LOCATIONS
- TRENCH SAMPLE LOCATIONS
- CONFIRMATION SAMPLE LOCATIONS
- ▨ 1st SPILL AREA(EXCAVATED AREA)
- ▨ 1st & 2nd SPILL AREA(EXCAVATED AREA)
- INSTALLED LINER

Table 1

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	9/7/2010	0-1			X	1,320	279	1,599	3.54	18.6	18.6	63.5	<200
	"	1-1.5			X	663	703	1,366	5.42	16.0	32.3	64.4	<200
	"	2-2.5	2' bottom		X	<20.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<200
AH-2	9/7/2010	0-1			X	1,930	546	2,476	1.43	4.28	25.8	56.8	<200
	"	1-1.5			X	104	404	508	0.480	<0.200	2.77	5.76	<200
T-4	1/17/2011	0-1	2' bottom		X	825.0	80	905	<0.01	<0.01	<0.01	<0.01	485
		2			X	23	<50	23	-	-	-	-	1,600
		4			X	-	-	-	-	-	-	-	885
CS-1	10/8/2012	-	4' bottom		X	-	-	-	-	-	-	-	862
AH-3	9/7/2010	0-1			X	747	536	1,283	0.911	9.03	23.4	44.9	<200
T-3	1/17/2011	0-1	2' bottom		X	881	2,380	3,261	<0.04	2.97	11.3	22.6	1,140
		2			X	255	791	1,046	-	-	-	-	230
CS-2	10/8/2012	-	3' bottom		X	7.69	<50.0	7.69	-	-	-	-	-
AH-4	9/7/2010	0-1	bottom		X	838	555	1,393	1.36	17.0	23.1	39.2	256
	"	1-1.5			X	538	932	1,470	2.62	27.7	39.3	59.2	707
CS-3	10/8/2012	0-1	0.5		X	32.0	62.0	94.0	<0.0200	<0.0200	0.432	0.637	1,020
	"	1-1.5	0.5		X	755	511	1,266	<0.0200	0.153	1.46	8.11	695

Table 1

COG Operating LLC.

LOWE 20 #1 TANK BATTERY

Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-5	9/7/2010	0-1'			X	382	141	523					466
		1-1.5			X								345
T-1	1/17/2011	0-1'	2' bottom		X	<2.0	<50	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	597
		2		X			-	-	-	-	-	-	264
		4		X			-	-	-	-	-	-	<200
AH-6	9/7/2010	0-1'			X	190	76.5	266.5					<200
		1-1.5			X								<200
		2-2.5			X								<200
		3-3.5		X			-	-	-	-	-	-	<200
		4-4.5		X			-	-	-	-	-	-	<200
		5-5.5		X			-	-	-	-	-	-	<200
T-2	1/17/2011	0-1'	2' bottom		X	405	119	524	<0.02	1.24	5.93	12.7	264
		2		X		237	380	617	-	-	-	-	<200
		4		X		67	277.0	344.4	-	-	-	-	274

BEB Below Excavation Bottom

(-) Not Analyzed

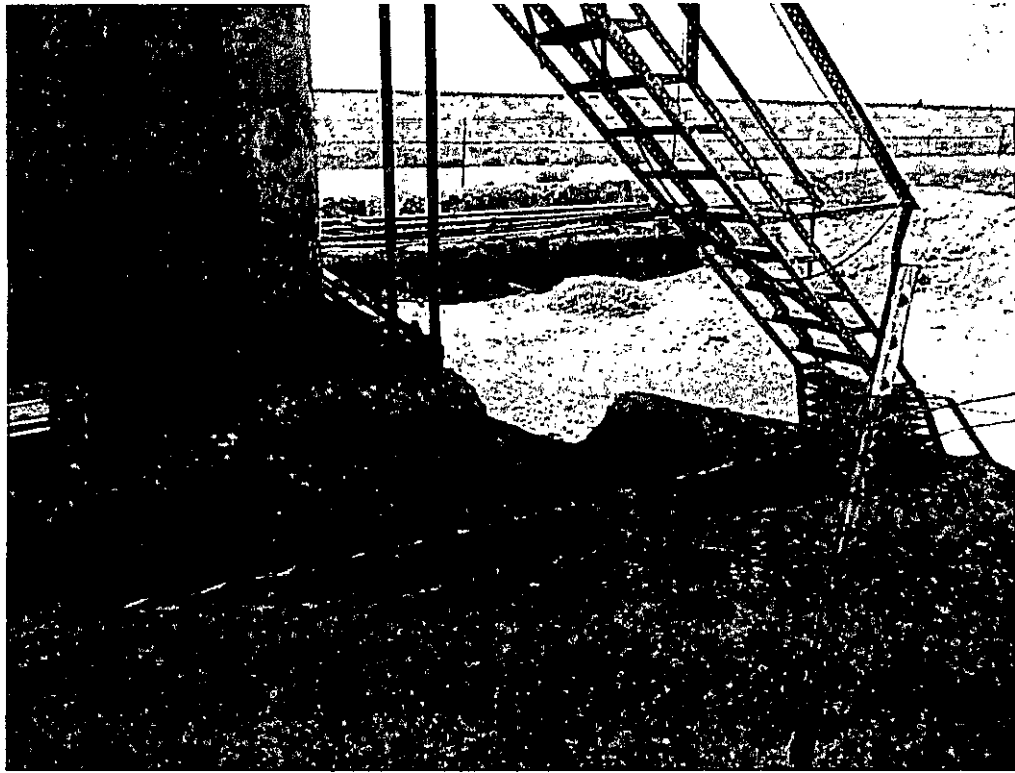
Excavated Depths

Clay Installation

COG Operating LLC
Lowe 20 #1 Tank Battery
Lea County, New Mexico



TETRA TECH

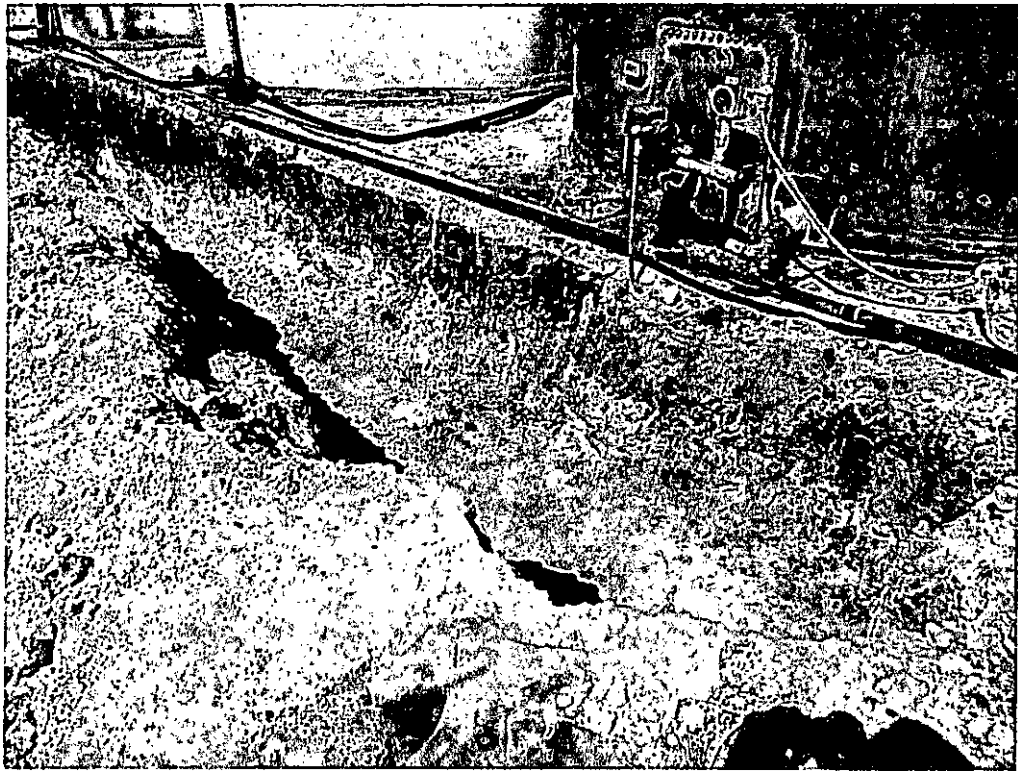


View Southwest – Area of AH-1

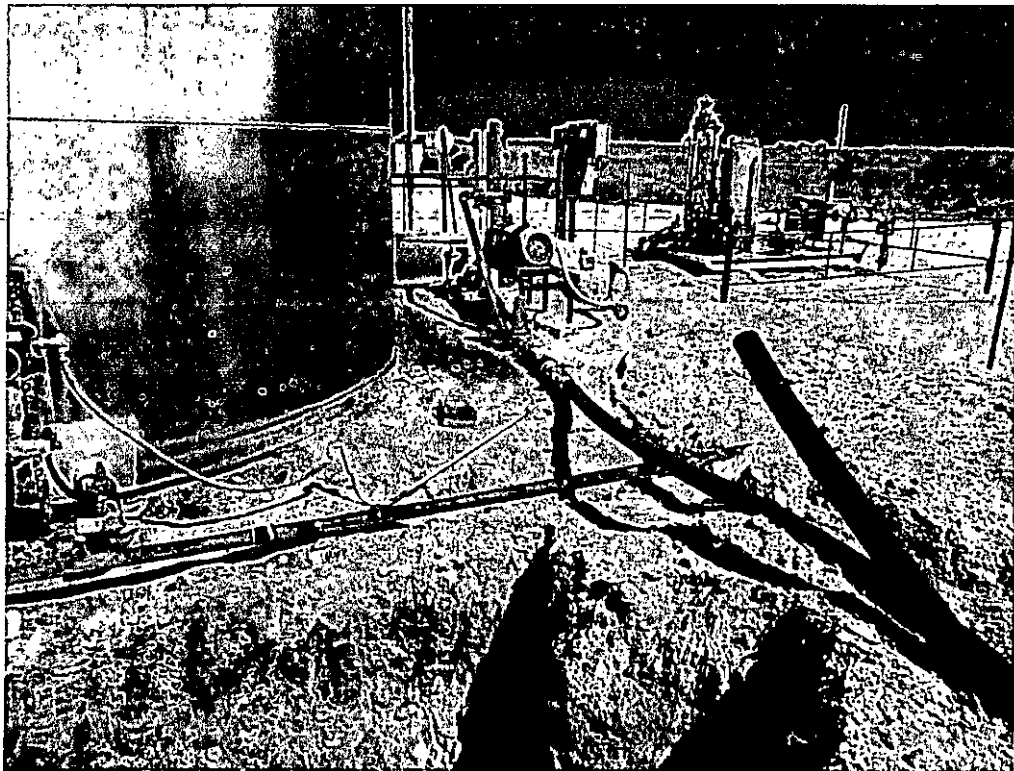


View Northwest – Area of AH-2

COG Operating LLC
Lowe 20 #1 Tank Battery
Lea County, New Mexico



View Northwest – Area of AH-3

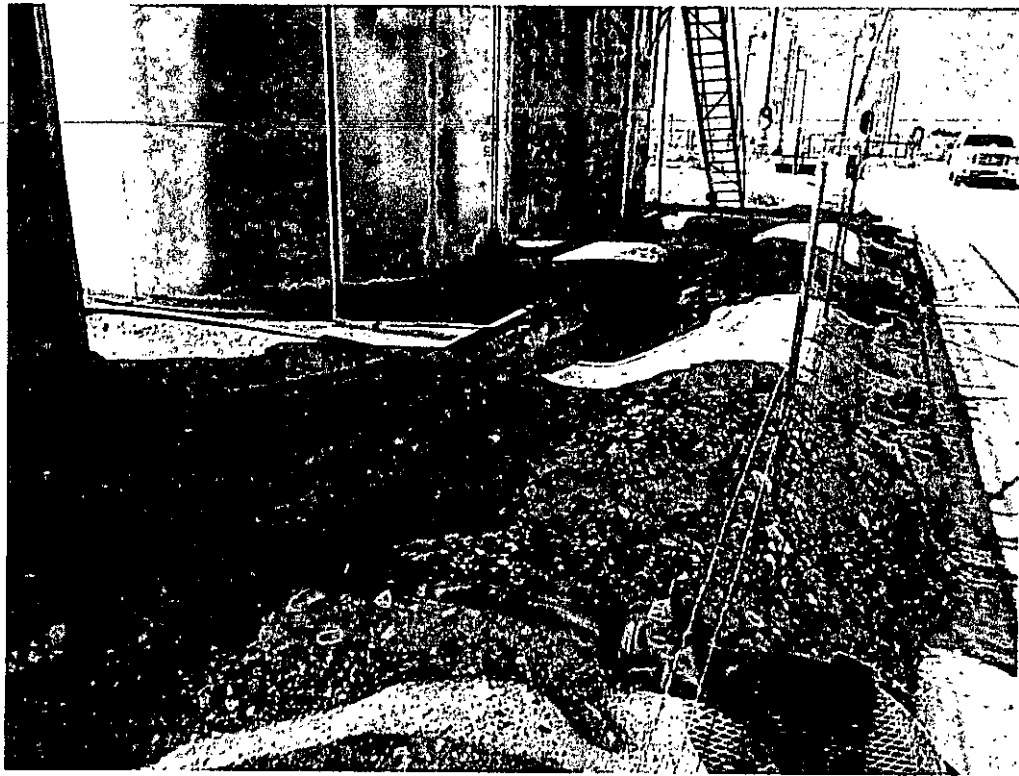


View North – Area of AH-4

COG Operating LLC
Lowe 20 #1 Tank Battery
Lea County, New Mexico



TETRA TECH



View West – Area of AH-5 and AH-6

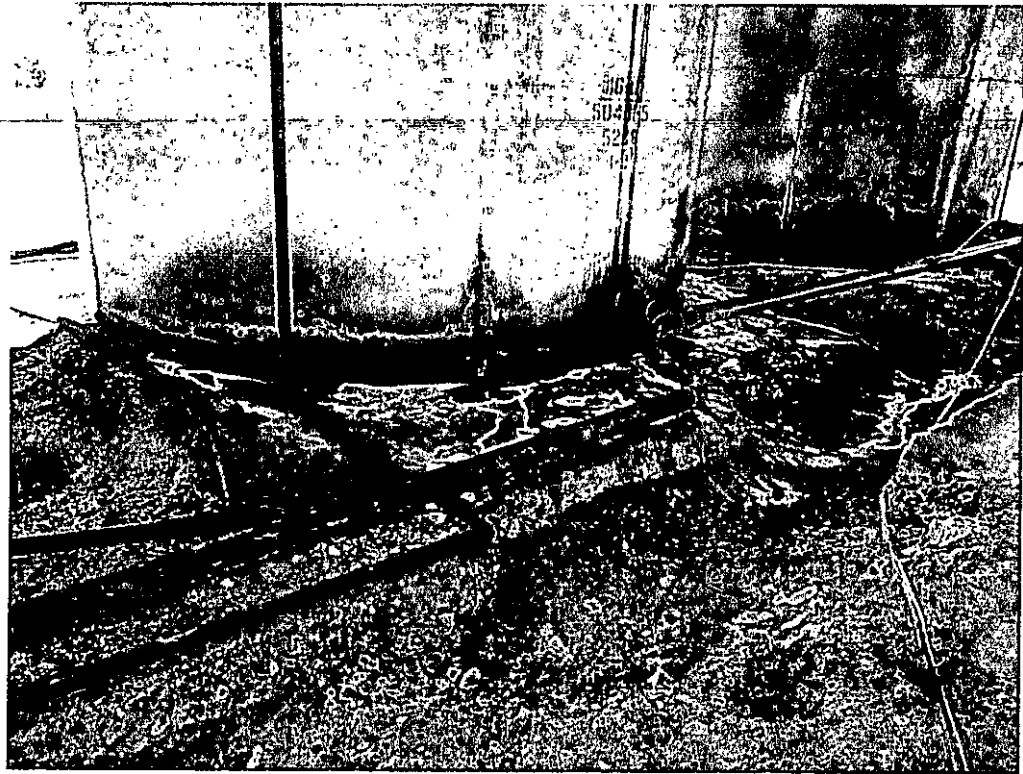


Clay Liner

COG Operating LLC
Lowe 20 #1 Tank Battery
Lea County, New Mexico



TETRA TECH



Application of Microblaze

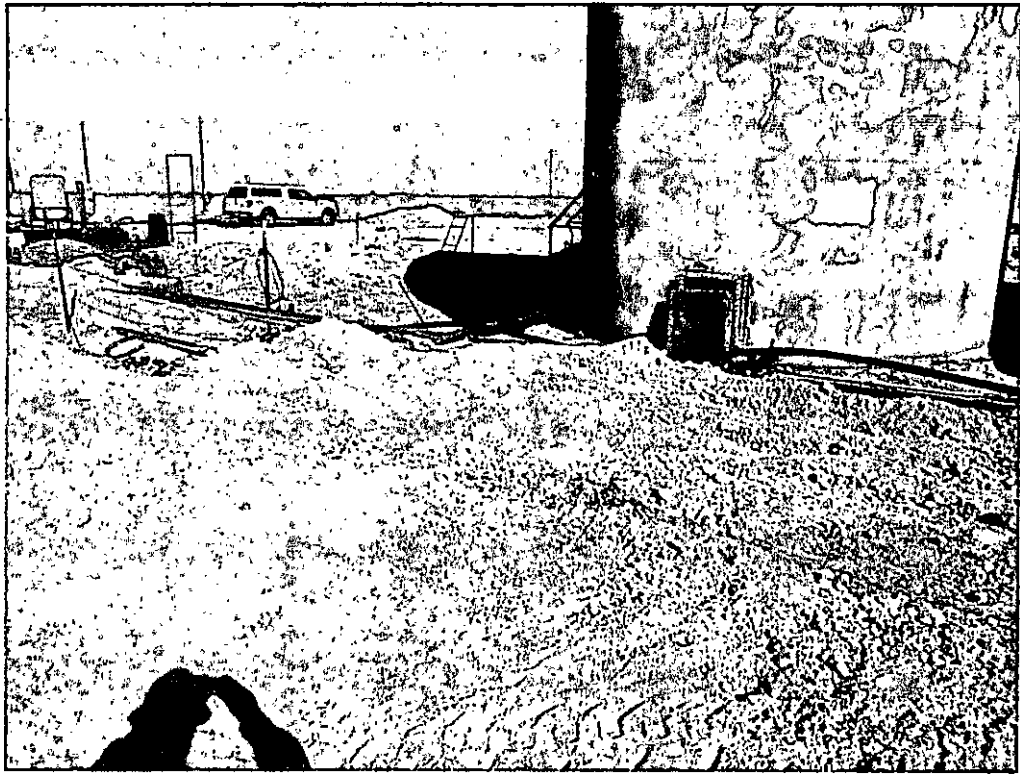


Application of Microblaze

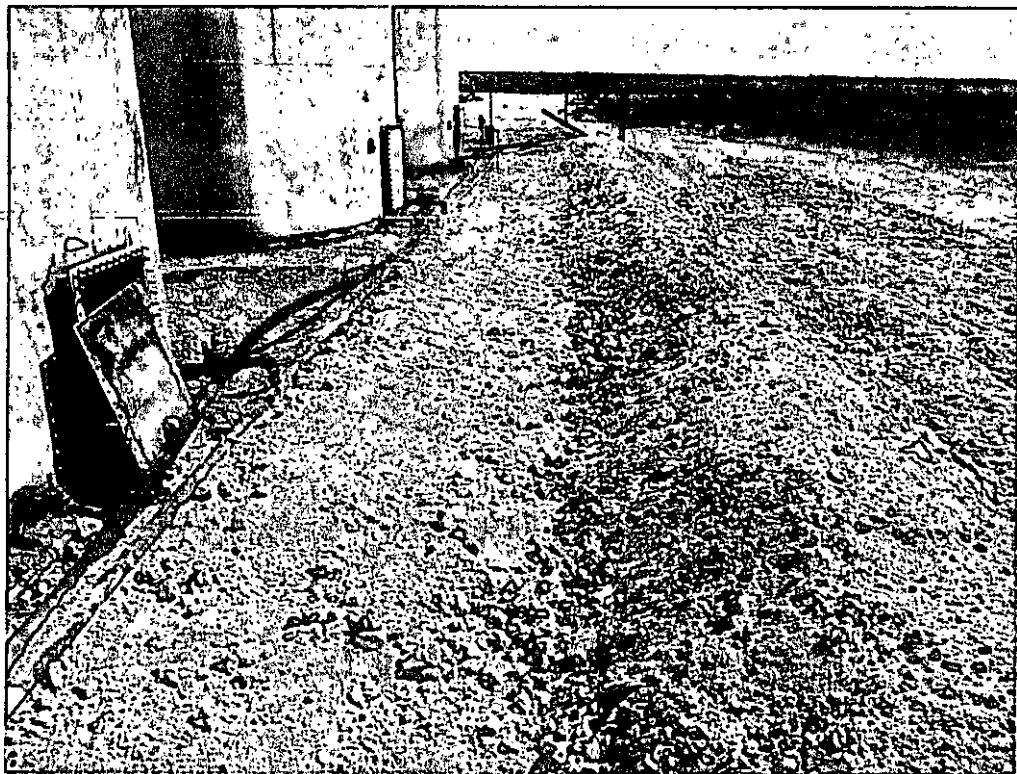
COG Operating LLC
Lowe 20 #1 Tank Battery
Lea County, New Mexico



TETRA TECH



Backfill



Backfill and Firewall construction

Water Well Data
Average Depth to Groundwater (ft)
COG - Lowe 20 #1 Tank Battery
Lea County, New Mexico

12 South			37 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
					30

12 South			38 East		
8 SITE	5	4	3	2	
42	65				
7	8	9	10	11	
38	46	50			
18	17	16	15	14	
19	20	21	22	23	
30	29	28	27	26	
31	32	33	34	35	

13 South			37 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

13 South			38 East		
6	5	4	3	2	66
			90		
7	8 70	9	10 60	11	
	100	105	100	70	
18 59	17 95	16	15	14	
90					
19 53	20 40	21 66	22 100	23	
110	50	60	120	120	
30 80	29 72	28	27 53	26	
31 87	32	33	34	35	
				120	

14 South			37 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 90	22	23	24
30 75	29 75	28 81	27 74	26	25 85
	77		62	44	55 65
31 80	32 74	33	34 58	35 68	36 55
	73		83 79		63 71

14 South			38 East		
6	5	4	3	2	
7	8	9	10	11	
18	17	16	15	14	
19 59	20	21	22	23	
50					
30 40	29	28	27	26	
31	32	33	34	35	

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Summary Report

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

Report Date: October 17, 2012

Work Order: 12101037



Project Location: Lea Co., NM
Project Name: COG/Lowe 20 #1 Tank Battery
Project Number: 114-6400674

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
311449	CS-1 Bottom Hole 4' BEB (AH-2)	soil	2012-10-08	00:00	2012-10-10
311450	CS-2 Bottom Hole 3' BEB (AH-3)	soil	2012-10-08	00:00	2012-10-10
311451	CS-3 0-1' 0.5' BEB (AH-4)	soil	2012-10-08	00:00	2012-10-10
311452	CS-3 1-1.5' 0.5' BEB (AH-4)	soil	2012-10-08	00:00	2012-10-10

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)
311450 - CS-2 Bottom Hole 3' BEB (AH-3)					<50.0	7.69
311451 - CS-3 0-1' 0.5' BEB (AH-4)	<0.0200	<0.0200	0.432	0.637	62.0	32.0
311452 - CS-3 1-1.5' 0.5' BEB (AH-4)	<0.0200	0.153	1.46	8.11	511	755

Sample: 311449 - CS-1 Bottom Hole 4' BEB (AH-2)

Param	Flag	Result	Units	RL
Chloride		862	mg/Kg	4

Sample: 311451 - CS-3 0-1' 0.5' BEB (AH-4)

Param	Flag	Result	Units	RL
Chloride		1020	mg/Kg	4

Sample: 311452 - CS-3 1-1.5' 0.5' BEB (AH-4)

Report Date: October 17, 2012

Work Order: 12101037

Page Number: 2 of 2

Param	Flag	Result	Units	RL
Chloride		695	mg/Kg	4



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

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: October 17, 2012

Work Order: 12101037



Project Location: Lea Co., NM
Project Name: COG/Lowe 20 #1 Tank Battery
Project Number: 114-6400674

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
311449	CS-1 Bottom Hole 4' BEB (AH-2)	soil	2012-10-08	00:00	2012-10-10
311450	CS-2 Bottom Hole 3' BEB (AH-3)	soil	2012-10-08	00:00	2012-10-10
311451	CS-3 0-1' 0.5' BEB (AH-4)	soil	2012-10-08	00:00	2012-10-10
311452	CS-3 1-1.5' 0.5' BEB (AH-4)	soil	2012-10-08	00:00	2012-10-10

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

This report consists of a total of 23 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

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Case Narrative

Samples for project COG/Lowe 20 #1 Tank Battery were received by TraceAnalysis, Inc. on 2012-10-10 and assigned to work order 12101037. Samples for work order 12101037 were received intact at a temperature of -0.6 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	81075	2012-10-09 at 14:39	95681	2012-10-11 at 14:39
Chloride (Titration)	SM 4500-Cl B	81143	2012-10-15 at 12:12	95757	2012-10-16 at 16:13
TPH DRO - NEW	S 8015 D	81152	2012-10-16 at 08:00	95773	2012-10-17 at 08:28
TPH DRO - NEW	S 8015 D	81154	2012-10-16 at 09:00	95775	2012-10-17 at 09:29
TPH GRO	S 8015 D	81075	2012-10-09 at 14:39	95682	2012-10-11 at 14:39
TPH GRO	S 8015 D	81099	2012-10-13 at 12:06	95715	2012-10-13 at 12:06

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12101037 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.

Report Date: October 17, 2012
114-6400674

Work Order: 12101037
COG/Lowe 20 #1 Tank Battery

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Lea Co., NM

Analytical Report

Sample: 311449 - CS-1 Bottom Hole 4' BEB (AH-2)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-10-16	Analyzed By:	AR
QC Batch:	95757	Sample Preparation:	2012-10-15	Prepared By:	AR
Prep Batch:	81143				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			862	mg/Kg	10	4.00

Sample: 311450 - CS-2 Bottom Hole 3' BEB (AH-3)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2012-10-17	Analyzed By:	CW
QC Batch:	95773	Sample Preparation:	2012-10-16	Prepared By:	CW
Prep Batch:	81152				

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	55.1 - 135.7

Sample: 311450 - CS-2 Bottom Hole 3' BEB (AH-3)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2012-10-11	Analyzed By:	YG
QC Batch:	95682	Sample Preparation:	2012-10-09	Prepared By:	YG
Prep Batch:	81075				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	7.69	mg/Kg	1	1.00

Report Date: October 17, 2012 --
114-6400674

Work Order: 12101037 --
COG/Lowe 20 #1 Tank Battery

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Lea Co., NM

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.06	mg/Kg	1	2.00	103	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Sample: 311451 - CS-3 0-1' 0.5' BEB (AH-4)

Laboratory: Midland

Analysis: BTEX

QC Batch: 95681

Prep Batch: 81075

Analytical Method: S 8021B

Date Analyzed: 2012-10-11

Sample Preparation: 2012-10-09

Prep Method: S 5035

Analyzed By: YG

Prepared By: YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene		1	0.432	mg/Kg	1	0.0200
Xylene		1	0.637	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			2.31	mg/Kg	1	2.00	116	70 - 130

Sample: 311451 - CS-3 0-1' 0.5' BEB (AH-4)

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 95757

Prep Batch: 81143

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-10-16

Sample Preparation: 2012-10-15

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1020	mg/Kg	10	4.00

Sample: 311451 - CS-3 0-1' 0.5' BEB (AH-4)

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 95775

Prep Batch: 81154

Analytical Method: S 8015 D

Date Analyzed: 2012-10-17

Sample Preparation: 2012-10-16

Prep Method: N/A

Analyzed By: CW

Prepared By: CW

Report Date: October 17, 2012
114-6400674

Work Order: 12101037
COG/Lowe 20 #1 Tank Battery

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Lea Co., NM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B	1	62.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	55.1 - 135.7

Sample: 311451 - CS-3 0-1' 0.5' BEB (AH-4)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 95682
Prep Batch: 81075

Analytical Method: S 8015 D
Date Analyzed: 2012-10-11
Sample Preparation: 2012-10-09

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	32.0	mg/Kg	1	1.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.34	mg/Kg	1	2.00	117	70 - 130
4-Bromofluorobenzene (4-BFB)			2.52	mg/Kg	1	2.00	126	70 - 130

Sample: 311452 - CS-3 1-1.5' 0.5' BEB (AH-4)

Laboratory: Midland
Analysis: BTEX
QC Batch: 95681
Prep Batch: 81075

Analytical Method: S 8021B
Date Analyzed: 2012-10-11
Sample Preparation: 2012-10-09

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene		1	0.153	mg/Kg	1	0.0200
Ethylbenzene		1	1.46	mg/Kg	1	0.0200
Xylene		1	8.11	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.86	mg/Kg	1	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)			1.65	mg/Kg	1	2.00	82	70 - 130

Report Date: October 17, 2012
114-6400674

Work Order: 12101037 --
COG/Lowe 20 #1 Tank Battery

Page Number: 8 of 23
Lea Co., NM

Sample: 311452 - CS-3 1-1.5' 0.5' BEB (AH-4)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 95757 Date Analyzed: 2012-10-16 Analyzed By: AR
Prep Batch: 81143 Sample Preparation: 2012-10-15 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			695	mg/Kg	5	4.00

Sample: 311452 - CS-3 1-1.5' 0.5' BEB (AH-4)

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 95775 Date Analyzed: 2012-10-17 Analyzed By: CW
Prep Batch: 81154 Sample Preparation: 2012-10-16 Prepared By: CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	511	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			135	mg/Kg	1	100	135	55.1 - 135.7

Sample: 311452 - CS-3 1-1.5' 0.5' BEB (AH-4)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 95715 Date Analyzed: 2012-10-13 Analyzed By: YG
Prep Batch: 81099 Sample Preparation: 2012-10-13 Prepared By: YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	755	mg/Kg	5	1.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.07	mg/Kg	5	10.0	91	70 - 130
4-Bromofluorobenzene (4-BFB)			11.3	mg/Kg	5	10.0	113	70 - 130

Report Date: October 17, 2012
114-6400674

Work Order: 12101037
COG/Lowe 20 #1 Tank Battery

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Lea Co., NM

Method Blanks

Method Blank (1) QC Batch: 95681

QC Batch: 95681
Prep Batch: 81075

Date Analyzed: 2012-10-11
QC Preparation: 2012-10-09

Analyzed By: YG
Prepared By: YG

Parameter	Flag	Cert	MDL		Units	RL
			Result			
Benzene		1	<0.00100		mg/Kg	0.02
Toluene		1	<0.00100		mg/Kg	0.02
Ethylbenzene		1	<0.00110		mg/Kg	0.02
Xylene		1	<0.00360		mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.85	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 95682

QC Batch: 95682
Prep Batch: 81075

Date Analyzed: 2012-10-11
QC Preparation: 2012-10-09

Analyzed By: YG
Prepared By: YG

Parameter	Flag	Cert	MDL		Units	RL
			Result			
GRO		1	<0.482		mg/Kg	1

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.72	mg/Kg	1	2.00	86	70 - 130

Method Blank (1) QC Batch: 95715

QC Batch: 95715
Prep Batch: 81099

Date Analyzed: 2012-10-13
QC Preparation: 2012-10-13

Analyzed By: YG
Prepared By: YG

Report Date: October 17, 2012
114-6400674

Work Order: 12101037
COG/Lowe 20 #1 Tank Battery

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Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.482	mg/Kg	1

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	1	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	70 - 130

Method Blank (1) QC Batch: 95757

QC Batch: 95757
Prep Batch: 81143

Date Analyzed: 2012-10-16
QC Preparation: 2012-10-15

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 95773

QC Batch: 95773
Prep Batch: 81152

Date Analyzed: 2012-10-17
QC Preparation: 2012-10-16

Analyzed By: CW
Prepared By: CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			89.1	mg/Kg	1	100	89	61.6 - 141.2

Method Blank (1) QC Batch: 95775

QC Batch: 95775
Prep Batch: 81154

Date Analyzed: 2012-10-17
QC Preparation: 2012-10-16

Analyzed By: CW
Prepared By: CW

Report Date: October 17, 2012
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Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	29.2	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			102	mg/Kg	1	100	102	61.6 - 141.2

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 95681
Prep Batch: 81075

Date Analyzed: 2012-10-11
QC Preparation: 2012-10-09

Analyzed By: YG
Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.89	mg/Kg	1	2.00	<0.00100	94	70 - 130
Toluene		1	1.88	mg/Kg	1	2.00	<0.00100	94	70 - 130
Ethylbenzene		1	1.81	mg/Kg	1	2.00	<0.00110	90	70 - 130
Xylene		1	5.72	mg/Kg	1	6.00	<0.00360	95	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.92	mg/Kg	1	2.00	<0.00100	96	70 - 130	2	20
Toluene		1	1.91	mg/Kg	1	2.00	<0.00100	96	70 - 130	2	20
Ethylbenzene		1	1.82	mg/Kg	1	2.00	<0.00110	91	70 - 130	1	20
Xylene		1	5.74	mg/Kg	1	6.00	<0.00360	96	70 - 130	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.91	1.96	mg/Kg	1	2.00	96	98	70 - 130
4-Bromofluorobenzene (4-BFB)	1.90	1.93	mg/Kg	1	2.00	95	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 95682
Prep Batch: 81075

Date Analyzed: 2012-10-11
QC Preparation: 2012-10-09

Analyzed By: YG
Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.7	mg/Kg	1	20.0	<0.482	88	70 - 130

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

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control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.4	mg/Kg	1	20.0	<0.482	87	70 - 130	2	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.05	2.09	mg/Kg	1	2.00	102	104	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.88	mg/Kg	1	2.00	97	94	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 95715
Prep Batch: 81099

Date Analyzed: 2012-10-13
QC Preparation: 2012-10-13

Analyzed By: YG
Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	19.5	mg/Kg	1	20.0	<0.482	98	70 - 130

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.0	mg/Kg	1	20.0	<0.482	95	70 - 130	3	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.04	2.05	mg/Kg	1	2.00	102	102	70 - 130
4-Bromofluorobenzene (4-BFB)	2.00	1.94	mg/Kg	1	2.00	100	97	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 95757
Prep Batch: 81143

Date Analyzed: 2012-10-16
QC Preparation: 2012-10-15

Analyzed By: AR
Prepared By: AR

continued ...

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control spikes continued ...

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2600	mg/Kg	1	2500	<3.85	104	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 95773
Prep Batch: 81152

Date Analyzed: 2012-10-17
QC Preparation: 2012-10-16

Analyzed By: CW
Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	183	mg/Kg	1	250	<15.7	73	66.9 - 119.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	171	mg/Kg	1	250	<15.7	68	66.9 - 119.9	7	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	86.2	79.3	mg/Kg	1	100	86	79	76.8 - 140.2

Laboratory Control Spike (LCS-1)

QC Batch: 95775
Prep Batch: 81154

Date Analyzed: 2012-10-17
QC Preparation: 2012-10-16

Analyzed By: CW
Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	231	mg/Kg	1	250	29.2	81	66.9 - 119.9

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

Param	F	C	LCSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			Result	Units							
DRO		1	198	mg/Kg	1	250	29.2	68	66.9 - 119.9	15	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	102	87.7	mg/Kg	1	100	102	88	76.8 - 140.2

Matrix Spike (MS-1) Spiked Sample: 311465

QC Batch: 95681
Prep Batch: 81075

Date Analyzed: 2012-10-11
QC Preparation: 2012-10-09

Analyzed By: YG
Prepared By: YG

Param	F	C	MS		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
			Result	Units					
Benzene		1	2.31	mg/Kg	1	2.00	<0.00100	116	70 - 130
Toluene		1	2.33	mg/Kg	1	2.00	<0.00100	116	70 - 130
Ethylbenzene		1	2.26	mg/Kg	1	2.00	<0.00110	113	70 - 130
Xylene		1	7.12	mg/Kg	1	6.00	<0.00360	119	70 - 130

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

Param	F	C	MSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			Result	Units							
Benzene		1	2.34	mg/Kg	1	2.00	<0.00100	117	70 - 130	1	20
Toluene		1	2.35	mg/Kg	1	2.00	<0.00100	118	70 - 130	1	20
Ethylbenzene		1	2.30	mg/Kg	1	2.00	<0.00110	115	70 - 130	2	20
Xylene		1	7.24	mg/Kg	1	6.00	<0.00360	121	70 - 130	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.95	1.94	mg/Kg	1	2	98	97	70 - 130
4-Bromofluorobenzene (4-BFB)	1.95	1.93	mg/Kg	1	2	98	96	70 - 130

Matrix Spike (MS-1) Spiked Sample: 311465

QC Batch: 95682
Prep Batch: 81075

Date Analyzed: 2012-10-11
QC Preparation: 2012-10-09

Analyzed By: YG
Prepared By: YG

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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.8	mg/Kg	1	20.0	<0.482	79	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.8	mg/Kg	1	20.0	<0.482	79	70 - 130	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.77	1.80	mg/Kg	1	2	88	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1.87	1.85	mg/Kg	1	2	94	92	70 - 130

Matrix Spike (MS-1) Spiked Sample: 311553

QC Batch: 95715
Prep Batch: 81099

Date Analyzed: 2012-10-13
QC Preparation: 2012-10-13

Analyzed By: YG
Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.9	mg/Kg	1	20.0	<0.482	74	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	14.8	mg/Kg	1	20.0	<0.482	74	70 - 130	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.04	1.98	mg/Kg	1	2	102	99	70 - 130
4-Bromofluorobenzene (4-BFB)	1.93	1.92	mg/Kg	1	2	96	96	70 - 130

Matrix Spike (MS-1) Spiked Sample: 311457

QC Batch: 95757
Prep Batch: 81143

Date Analyzed: 2012-10-16
QC Preparation: 2012-10-15

Analyzed By: AR
Prepared By: AR

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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2600	mg/Kg	5	2500	76.7	101	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2730	mg/Kg	5	2500	76.7	106	78.9 - 121	5	20

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

Matrix Spike (MS-1) Spiked Sample: 311450

QC Batch: 95773
Prep Batch: 81152

Date Analyzed: 2012-10-17
QC Preparation: 2012-10-16

Analyzed By: CW
Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	229	mg/Kg	1	250	48	72	36.1 - 147.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	238	mg/Kg	1	250	48	76	36.1 - 147.2	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	90.5	90.0	mg/Kg	1	100	90	90	78.3 - 131.6

Matrix Spike (MS-1) Spiked Sample: 311524

QC Batch: 95775
Prep Batch: 81154

Date Analyzed: 2012-10-17
QC Preparation: 2012-10-16

Analyzed By: CW
Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	207	mg/Kg	1	250	31.4	70	36.1 - 147.2

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO			244	mg/Kg	1	250	31.4	85	36.1 - 147.2	16	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	91.4	112	mg/Kg	1	100	91	112	78.3 - 131.6

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Calibration Standards

Standard (CCV-1)

QC Batch: 95681

Date Analyzed: 2012-10-11

Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	2.00	1.97	98	80 - 120	2012-10-11
Toluene		1	mg/kg	2.00	1.97	98	80 - 120	2012-10-11
Ethylbenzene		1	mg/kg	2.00	1.88	94	80 - 120	2012-10-11
Xylene		1	mg/kg	6.00	5.93	99	80 - 120	2012-10-11

Standard (CCV-2)

QC Batch: 95681

Date Analyzed: 2012-10-11

Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	2.00	1.92	96	80 - 120	2012-10-11
Toluene		1	mg/kg	2.00	1.91	96	80 - 120	2012-10-11
Ethylbenzene		1	mg/kg	2.00	1.79	90	80 - 120	2012-10-11
Xylene		1	mg/kg	6.00	5.64	94	80 - 120	2012-10-11

Standard (CCV-1)

QC Batch: 95682

Date Analyzed: 2012-10-11

Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	20.0	18.6	93	80 - 120	2012-10-11

Standard (CCV-2)

QC Batch: 95682

Date Analyzed: 2012-10-11

Analyzed By: YG

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	20.0	23.5	118	80 - 120	2012-10-11

Standard (CCV-1)

QC Batch: 95715

Date Analyzed: 2012-10-13

Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.843	84	80 - 120	2012-10-13

Standard (CCV-2)

QC Batch: 95715

Date Analyzed: 2012-10-13

Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.859	86	80 - 120	2012-10-13

Standard (CCV-1)

QC Batch: 95757

Date Analyzed: 2012-10-16

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-10-16

Standard (CCV-2)

QC Batch: 95757

Date Analyzed: 2012-10-16

Analyzed By: AR

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-10-16

Standard (CCV-1)

QC Batch: 95773

Date Analyzed: 2012-10-17

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	278	111	80 - 120	2012-10-17

Standard (CCV-2)

QC Batch: 95773

Date Analyzed: 2012-10-17

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	233	93	80 - 120	2012-10-17

Standard (CCV-3)

QC Batch: 95773

Date Analyzed: 2012-10-17

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	209	84	80 - 120	2012-10-17

Standard (CCV-4)

QC Batch: 95773

Date Analyzed: 2012-10-17

Analyzed By: CW

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	211	84	80 - 120	2012-10-17

Standard (CCV-1)

QC Batch: 95775

Date Analyzed: 2012-10-17

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	239	96	80 - 120	2012-10-17

Standard (CCV-2)

QC Batch: 95775

Date Analyzed: 2012-10-17

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	225	90	80 - 120	2012-10-17

Standard (CCV-3)

QC Batch: 95775

Date Analyzed: 2012-10-17

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	200	80	80 - 120	2012-10-17

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-12-4	Midland

Standard Flags

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

Attachments

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

12/10/037

Analysis Request of Chain of Custody Record



TETRA TECH

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

CLIENT NAME:		SITE MANAGER:		PROJECT NAME:		PRESERVATIVE METHOD	
PROJECT NO.:		PROJECT NAME:		PROJECT NAME:		PRESERVATIVE METHOD	
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS
311449	10/18					CS-1 Bottom Hole 4' BEB (AH-2)	
450						CS-2 Bottom Hole 3' BEB (AH-3)	
451						CS-3 0-1' 0.5' BEB (AH-4)	
452						CS-3 1-1.5 0.5' BEB (AH-4)	

REQUISITIONED BY (Signature)	RECEIVED BY (Signature)	DATE	TIME
[Signature]	[Signature]	12/10/12	0900
REQUISITIONED BY (Signature)	RECEIVED BY (Signature)	DATE	TIME
[Signature]	[Signature]	10-10-12	1335
REQUISITIONED BY (Signature)	RECEIVED BY (Signature)	DATE	TIME
[Signature]	[Signature]		

RECEIVING LABORATORY:	STATE:	ZIP:	PHONE:	DATE:	TIME:
Midland	TX				

SAMPLE CONDITION WHEN RECEIVED:		REMARKS:	
- 0.6 intact AH		Midland - all	

ANALYSIS REQUEST
(Circle or Specify Method No.)

PAH 8270	TCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCRP Volatiles	TCRP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Al)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
TPH 8015 MOD, TX1005 (Ext. to C95)									X				
BTEX 80216									X				
									X				
									X				
									X				

SAMPLED BY: (Print & Initial)	DATE: 10-10-12	TIME: 0900
SAMPLE SHIPPED BY: (Circle)	AIRBILL #:	
FEDX	BUS	
HAND DELIVERED	UPS	
TETRA TECH CONTACT PERSON:	RESULTS BY:	
Ilse	RUSH CHARGES AUTHORIZED:	Yes
	No	

Summary Report

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

Report Date: January 31, 2011

Work Order: 11012509



Project Location: Lea Co., NM
Project Name: COG/Lowe 20 #1 TB
Project Number: 114-6400674

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
256037	Trench-1 Bottom 0-1' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256038	Trench-1 2' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256039	Trench-1 4' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256040	Trench-2 Bottom 0-1' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256041	Trench-2 2' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256042	Trench-2 4' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256043	Trench-3 Bottom 0-1' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256044	Trench-3 2' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256045	Trench-4 Bottom 0-1' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256046	Trench-4 2' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256047	Trench-4 4' 2' BEB	soil	2011-01-17	00:00	2011-01-24

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)
256037 - Trench-1 Bottom 0-1' 2' BEB	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
256040 - Trench-2 Bottom 0-1' 2' BEB	<0.0200	1.24	5.93	12.7	119	405
256041 - Trench-2 2' 2' BEB					380	237
256042 - Trench-2 4' 2' BEB					277	67.4
256043 - Trench-3 Bottom 0-1' 2' BEB	<0.400	2.97	11.2	22.6	2380	881
256044 - Trench-3 2' 2' BEB					791	255
256045 - Trench-4 Bottom 0-1' 2' BEB	<0.100	<0.100	0.353	1.06	825	79.5
256046 - Trench-4 2' 2' BEB					<50.0	23.1

Sample: 256037 - Trench-1 Bottom 0-1' 2' BEB

Param	Flag	Result	Units	RL
Chloride		597	mg/Kg	4.00

Sample: 256038 - Trench-1 2' 2' BEB

Param	Flag	Result	Units	RL
Chloride		264	mg/Kg	4.00

Sample: 256039 - Trench-1 4' 2' BEB

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

Sample: 256040 - Trench-2 Bottom 0-1' 2' BEB

Param	Flag	Result	Units	RL
Chloride		274	mg/Kg	4.00

Sample: 256041 - Trench-2 2' 2' BEB

Param	Flag	Result	Units	RL
Chloride		423	mg/Kg	4.00

Sample: 256042 - Trench-2 4' 2' BEB

Param	Flag	Result	Units	RL
Chloride		413	mg/Kg	4.00

Sample: 256043 - Trench-3 Bottom 0-1' 2' BEB

Param	Flag	Result	Units	RL
Chloride		1140	mg/Kg	4.00

Sample: 256044 - Trench-3 2' 2' BEB

Param	Flag	Result	Units	RL
Chloride		230	mg/Kg	4.00

Sample: 256045 - Trench-4 Bottom 0-1' 2' BEB

Param	Flag	Result	Units	RL
Chloride		485	mg/Kg	4.00

Sample: 256046 - Trench-4 2' 2' BEB

Param	Flag	Result	Units	RL
Chloride		1600	mg/Kg	4.00

Sample: 256047 - Trench-4 4' 2' BEB

Param	Flag	Result	Units	RL
Chloride		885	mg/Kg	4.00



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1296
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019

HUB: 1752439743100-86536
NCTRCA WFWB38444Y0909

DBE: VN 20657

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: January 31, 2011

Work Order: 11012509



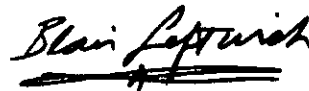
Project Location: Lea Co., NM
Project Name: COG/Lowe 20 #1 TB
Project Number: 114-6400674

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
256037	Trench-1 Bottom 0-1' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256038	Trench-1 2' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256039	Trench-1 4' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256040	Trench-2 Bottom 0-1' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256041	Trench-2 2' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256042	Trench-2 4' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256043	Trench-3 Bottom 0-1' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256044	Trench-3 2' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256045	Trench-4 Bottom 0-1' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256046	Trench-4 2' 2' BEB	soil	2011-01-17	00:00	2011-01-24
256047	Trench-4 4' 2' BEB	soil	2011-01-17	00:00	2011-01-24

- 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 25 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.

-----Samples for project COG/Lowe 20-#1-TB were received by TraceAnalysis, Inc. on 2011-01-24 and assigned to work order 11012509. Samples for work order 11012509 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	66258	2011-01-28 at 09:20	77246	2011-01-28 at 10:41
Chloride (Titration)	SM 4500-Cl B	66172	2011-01-24 at 10:56	77163	2011-01-26 at 15:22
Chloride (Titration)	SM 4500-Cl B	66172	2011-01-24 at 10:56	77164	2011-01-26 at 15:22
TPH DRO - NEW	S 8015 D	66171	2011-01-25 at 11:17	77137	2011-01-25 at 11:17
TPH DRO - NEW	S 8015 D	66225	2011-01-27 at 12:11	77207	2011-01-27 at 12:11
TPH DRO - NEW	S 8015 D	66264	2011-01-28 at 14:43	77252	2011-01-28 at 14:43
TPH GRO	S 8015 D	66258	2011-01-28 at 09:20	77247	2011-01-28 at 10:41

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 11012509 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.

Report Date: January 31, 2011
114-6400674

Work Order: 11012509
COG/Lowe 20 #1 TB

Page Number: 4 of 25
Lea Co., NM

Analytical Report

Sample: 256037 - Trench-1 Bottom 0-1' 2' BEB

Laboratory: Midland
Analysis: BTEX
QC Batch: 77246
Prep Batch: 66258

Analytical Method: S 8021B
Date Analyzed: 2011-01-28
Sample Preparation: 2011-01-28

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.37	mg/Kg	1	2.00	118	51.6 - 149.2
4-Bromofluorobenzene (4-BFB)		2.19	mg/Kg	1	2.00	110	35.7 - 159.6

Sample: 256037 - Trench-1 Bottom 0-1' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 77163
Prep Batch: 66172

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-01-26
Sample Preparation: 2011-01-26

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		597	mg/Kg	50	4.00

Sample: 256037 - Trench-1 Bottom 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 77137
Prep Batch: 66171

Analytical Method: S 8015 D
Date Analyzed: 2011-01-25
Sample Preparation: 2011-01-25

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

Report Date: January 31, 2011
114-6400674

Work Order: 11012509
COG/Lowe 20 #1 TB

Page Number: 5 of 25
Lea Co., NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		96.3	mg/Kg	1	100	96	70 - 130

Sample: 256037 - Trench-1 Bottom 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 77247
Prep Batch: 66258

Analytical Method: S 8015 D
Date Analyzed: 2011-01-28
Sample Preparation: 2011-01-28

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.50	mg/Kg	1	2.00	125	36.3 - 158.9
4-Bromofluorobenzene (4-BFB)		2.08	mg/Kg	1	2.00	104	22.2 - 160.2

Sample: 256038 - Trench-1 2' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 77163
Prep Batch: 66172

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-01-26
Sample Preparation: 2011-01-26

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		264	mg/Kg	50	4.00

Sample: 256039 - Trench-1 4' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 77163
Prep Batch: 66172

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-01-26
Sample Preparation: 2011-01-26

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

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

Report Date: January 31, 2011
114-6400674

Work Order: 11012509
COG/Lowe 20 #1 TB

Page Number: 6 of 25
Lea Co., NM

Sample: 256040 - Trench-2 Bottom 0-1' 2' BEB

Laboratory: Midland

Analysis: BTEX

QC Batch: 77246

Prep Batch: 66258

Analytical Method: S 8021B

Date Analyzed: 2011-01-28

Sample Preparation: 2011-01-28

Prep Method: S 5035

Analyzed By: ME

Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0200	mg/Kg	1	0.0200
Toluene		1.24	mg/Kg	1	0.0200
Ethylbenzene		5.93	mg/Kg	1	0.0200
Xylene		12.7	mg/Kg	1	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.46	mg/Kg	1	2.00	123	51.6 - 149.2
4-Bromofluorobenzene (4-BFB)	¹	6.00	mg/Kg	1	2.00	300	35.7 - 159.6

Sample: 256040 - Trench-2 Bottom 0-1' 2' BEB

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 77163

Prep Batch: 66172

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-01-26

Sample Preparation: 2011-01-26

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		274	mg/Kg	50	4.00

Sample: 256040 - Trench-2 Bottom 0-1' 2' BEB

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 77137

Prep Batch: 66171

Analytical Method: S 8015 D

Date Analyzed: 2011-01-25

Sample Preparation: 2011-01-25

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		119	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		99.0	mg/Kg	1	100	99	70 - 130

¹High surrogate recovery due to peak interference.

Report Date: January 31, 2011
114-6400674

Work Order: 11012509
COG/Lowe 20 #1 TB

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Lea Co., NM

Sample: 256040 - Trench-2 Bottom-0-1'-2'-BEB

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 77247
Prep Batch: 66258

Analytical Method: S 8015 D
Date Analyzed: 2011-01-28
Sample Preparation: 2011-01-28

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		405	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.52	mg/Kg	1	2.00	126	36.3 - 158.9
4-Bromofluorobenzene (4-BFB)	²	6.15	mg/Kg	1	2.00	308	22.2 - 160.2

Sample: 256041 - Trench-2 2' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 77163
Prep Batch: 66172

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-01-26
Sample Preparation: 2011-01-26

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		423	mg/Kg	50	4.00

Sample: 256041 - Trench-2 2' 2' BEB

Laboratory: Midland

Analysis: ~~TPH DRO NEW~~
QC Batch: 77207
Prep Batch: 66225

Analytical Method: ~~S 8015 D~~
Date Analyzed: 2011-01-27
Sample Preparation: 2011-01-27

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

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		380	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		124	mg/Kg	1	100	124	70 - 130

²High surrogate recovery due to peak interference.

Report Date: January 31, 2011
114-6400674

Work Order: 11012509
COG/Lowe 20 #1 TB

Page Number: 8 of 25
Lea Co., NM

Sample: 256041 - Trench-2 2' 2' BEB

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 77247
Prep Batch: 66258

Analytical Method: S 8015 D
Date Analyzed: 2011-01-28
Sample Preparation: 2011-01-28

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		237	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.54	mg/Kg	1	2.00	127	36.3 - 158.9
4-Bromofluorobenzene (4-BFB)	3	4.12	mg/Kg	1	2.00	206	22.2 - 160.2

Sample: 256042 - Trench-2 4' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 77163
Prep Batch: 66172

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-01-26
Sample Preparation: 2011-01-26

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		413	mg/Kg	50	4.00

Sample: 256042 - Trench-2 4' 2' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 77252
Prep Batch: 66264

Analytical Method: S 8015 D
Date Analyzed: 2011-01-28
Sample Preparation: 2011-01-28

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

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		277	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		125	mg/Kg	1	100	125	70 - 130

³High surrogate recovery due to peak interference.

Report Date: January 31, 2011
114-6400674

Work Order: 11012509
COG/Lowe 20 #1 TB

Page Number: 9 of 25
Lea Co., NM

Sample: 256042 - Trench-2 4' 2' BEB

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 77247
Prep Batch: 66258

Analytical Method: S 8015 D
Date Analyzed: 2011-01-28
Sample Preparation: 2011-01-28

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		67.4	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.83	mg/Kg	1	2.00	142	36.3 - 158.9
4-Bromofluorobenzene (4-BFB)		2.92	mg/Kg	1	2.00	146	22.2 - 160.2

Sample: 256043 - Trench-3 Bottom 0-1' 2' BEB

Laboratory: Midland
Analysis: BTEX
QC Batch: 77246
Prep Batch: 66258

Analytical Method: S 8021B
Date Analyzed: 2011-01-28
Sample Preparation: 2011-01-28

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

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.400	mg/Kg	20	0.0200
Toluene		2.97	mg/Kg	20	0.0200
Ethylbenzene		11.2	mg/Kg	20	0.0200
Xylene		22.6	mg/Kg	20	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		23.3	mg/Kg	20	20.0	116	51.6 - 149.2
4-Bromofluorobenzene (4-BFB)		27.2	mg/Kg	20	20.0	136	35.7 - 159.6

Sample: 256043 - Trench-3 Bottom 0-1' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 77164
Prep Batch: 66172

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-01-26
Sample Preparation: 2011-01-26

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1140	mg/Kg	50	4.00

Report Date: January 31, 2011
114-6400674

Work Order: 11012509
COG/Lowc 20 #1 TB

Page Number: 10 of 25
Lea Co., NM

Sample: 256043 - Trench-3 Bottom 0-1' 2' BEB

Laboratory:	Midland		
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D
QC Batch:	77137	Date Analyzed:	2011-01-25
Prep Batch:	66171	Sample Preparation:	2011-01-25
		Prep Method:	N/A
		Analyzed By:	kg
		Prepared By:	kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		2380	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	⁴	236	mg/Kg	1	100	236	70 - 130

Sample: 256043 - Trench-3 Bottom 0-1' 2' BEB

Laboratory:	Midland		
Analysis:	TPH GRO	Analytical Method:	S 8015 D
QC Batch:	77247	Date Analyzed:	2011-01-28
Prep Batch:	66258	Sample Preparation:	2011-01-28
		Prep Method:	S 5035
		Analyzed By:	AG
		Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		881	mg/Kg	20	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		23.8	mg/Kg	20	20.0	119	36.3 - 158.9
4-Bromofluorobenzene (4-BFB)		31.4	mg/Kg	20	20.0	157	22.2 - 160.2

Sample: 256044 - Trench-3 2' 2' BEB

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	77164	Date Analyzed:	2011-01-26
Prep Batch:	66172	Sample Preparation:	2011-01-26
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		230	mg/Kg	50	4.00

⁴High surrogate recovery due to peak interference.

Report Date: January 31, 2011
114-6400674

Work Order: 11012509
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Sample: 256044 - Trench-3-2'-2'-BEB

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 77207 Date Analyzed: 2011-01-27 Analyzed By: kg
Prep Batch: 66225 Sample Preparation: 2011-01-27 Prepared By: kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		791	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	⁵	143	mg/Kg	1	100	143	70 - 130

Sample: 256044 - Trench-3 2' 2' BEB

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 77247 Date Analyzed: 2011-01-28 Analyzed By: AG
Prep Batch: 66258 Sample Preparation: 2011-01-28 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		255	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.60	mg/Kg	1	2.00	130	36.3 - 158.9
4-Bromofluorobenzene (4-BFB)	⁶	3.23	mg/Kg	1	2.00	162	22.2 - 160.2

Sample: 256045 - Trench-4 Bottom 0-1' 2' BEB

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 77246 Date Analyzed: 2011-01-28 Analyzed By: ME
Prep Batch: 66258 Sample Preparation: 2011-01-28 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.100	mg/Kg	5	0.0200
Toluene		<0.100	mg/Kg	5	0.0200
Ethylbenzene		0.353	mg/Kg	5	0.0200
Xylene		1.06	mg/Kg	5	0.0200

⁵High surrogate recovery due to peak interference.

⁶High surrogate recovery due to peak interference.

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		5.80	mg/Kg	5	5.00	116	51.6 - 149.2
4-Bromofluorobenzene (4-BFB)		5.43	mg/Kg	5	5.00	109	35.7 - 159.6

Sample: 256045 - Trench-4 Bottom 0-1' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 77164 Date Analyzed: 2011-01-26 Analyzed By: AR
Prep Batch: 66172 Sample Preparation: 2011-01-26 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		485	mg/Kg	50	4.00

Sample: 256045 - Trench-4 Bottom 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 77137 Date Analyzed: 2011-01-25 Analyzed By: kg
Prep Batch: 66171 Sample Preparation: 2011-01-25 Prepared By: kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		825	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	7	154	mg/Kg	1	100	154	70 - 130

Sample: 256045 - Trench-4 Bottom 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 77247 Date Analyzed: 2011-01-28 Analyzed By: AG
Prep Batch: 66258 Sample Preparation: 2011-01-28 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		79.5	mg/Kg	5	2.00

⁷High surrogate recovery due to peak interference.

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		6.05	mg/Kg	5	5.00	121	36.3 - 158.9
4-Bromofluorobenzene (4-BFB)		5.11	mg/Kg	5	5.00	102	22.2 - 160.2

Sample: 256046 - Trench-4 2' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 77164 Date Analyzed: 2011-01-26 Analyzed By: AR
Prep Batch: 66172 Sample Preparation: 2011-01-26 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1600	mg/Kg	100	4.00

Sample: 256046 - Trench-4 2' 2' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 77207 Date Analyzed: 2011-01-27 Analyzed By: kg
Prep Batch: 66225 Sample Preparation: 2011-01-27 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		92.9	mg/Kg	1	100	93	70 - 130

Sample: 256046 - Trench-4 2' 2' BEB

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 77247 Date Analyzed: 2011-01-28 Analyzed By: AG
Prep Batch: 66258 Sample Preparation: 2011-01-28 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		23.1	mg/Kg	1	2.00

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.48	mg/Kg	1	2.00	124	36.3 - 158.9
4-Bromofluorobenzene (4-BFB)		2.37	mg/Kg	1	2.00	118	22.2 - 160.2

Sample: 256047 - Trench-4 4' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 77164 Date Analyzed: 2011-01-26 Analyzed By: AR
Prep Batch: 66172 Sample Preparation: 2011-01-26 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		885	mg/Kg	50	4.00

Method Blank (1) QC Batch: 77137

QC Batch: 77137 Date Analyzed: 2011-01-25 Analyzed By: kg
Prep Batch: 66171 QC Preparation: 2011-01-25 Prepared By: kg

Parameter	Flag	MDL Result	Units	RL
DRO		<14.6	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		99.4	mg/Kg	1	100	99	70 - 130

Method Blank (1) QC Batch: 77163

QC Batch: 77163 Date Analyzed: 2011-01-26 Analyzed By: AR
Prep Batch: 66172 QC Preparation: 2011-01-24 Prepared By: AR

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

Method Blank (1) QC Batch: 77164

QC Batch: 77164 Date Analyzed: 2011-01-26 Analyzed By: AR
Prep Batch: 66172 QC Preparation: 2011-01-24 Prepared By: AR

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

Method Blank (1) QC Batch: 77207

QC Batch: 77207 Date Analyzed: 2011-01-27 Analyzed By: kg
Prep Batch: 66225 QC Preparation: 2011-01-27 Prepared By: kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		102	mg/Kg	1	100	102	70 - 130

Method Blank (1) QC Batch: 77246

QC Batch: 77246 Date Analyzed: 2011-01-28 Analyzed By: ME
Prep Batch: 66258 QC Preparation: 2011-01-28 Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.0118	mg/Kg	0.02
Toluene		<0.00600	mg/Kg	0.02
Ethylbenzene		<0.00850	mg/Kg	0.02
Xylene		<0.00613	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.28	mg/Kg	1	2.00	114	70.8 - 123.5
4-Bromofluorobenzene (4-BFB)		2.14	mg/Kg	1	2.00	107	48.8 - 134

Method Blank (1) QC Batch: 77247

QC Batch: 77247 Date Analyzed: 2011-01-28 Analyzed By: AG
Prep Batch: 66258 QC Preparation: 2011-01-28 Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.753	mg/Kg	2

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.39	mg/Kg	1	2.00	120	74.6 - 127.8
4-Bromofluorobenzene (4-BFB)		2.01	mg/Kg	1	2.00	100	32.9 - 129.8

Method Blank (1) QC Batch: 77252

QC Batch: 77252
Prep Batch: 66264

Date Analyzed: 2011-01-28
QC Preparation: 2011-01-28

Analyzed By: kg
Prepared By: kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		111	mg/Kg	1	100	111	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 77137
Prep Batch: 66171

Date Analyzed: 2011-01-25
QC Preparation: 2011-01-25

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	198	mg/Kg	1	250	<14.6	79	47.5 - 144.1

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

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD
DRO	228	mg/Kg	1	250	<14.6	91	47.5 - 144.1	14

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
n-Tricosane	111	109	mg/Kg	1	100	111	109	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 77163
Prep Batch: 66172

Date Analyzed: 2011-01-26
QC Preparation: 2011-01-24

Analyzed By: AR
Prepared By: AR

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	96.8	mg/Kg	1	100	<2.18	97	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	104	mg/Kg	1	100	<2.18	104	85 - 115	7	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 77164
Prep Batch: 66172

Date Analyzed: 2011-01-26
QC Preparation: 2011-01-24

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	96.9	mg/Kg	1	100	<2.18	97	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	104	mg/Kg	1	100	<2.18	104	85 - 115	7	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 77207
Prep Batch: 66225

Date Analyzed: 2011-01-27
QC Preparation: 2011-01-27

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	256	mg/Kg	1	250	<15.7	102	47.5 - 144.1

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	264	mg/Kg	1	250	<15.7	106	47.5 - 144.1	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	116	115	mg/Kg	1	100	116	115	70 - 130

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Laboratory Control Spike (LCS-1)

QC Batch: 77246
Prep Batch: 66258

Date Analyzed: 2011-01-28
QC Preparation: 2011-01-28

Analyzed By: ME
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.89	mg/Kg	1	2.00	<0.0118	94	76.4 - 118.4
Toluene	1.90	mg/Kg	1	2.00	<0.00600	95	81.8 - 111.9
Ethylbenzene	2.14	mg/Kg	1	2.00	<0.00850	107	81.1 - 112.2
Xylene	6.42	mg/Kg	1	6.00	<0.00613	107	81.7 - 111.5

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	1.88	mg/Kg	1	2.00	<0.0118	94	76.4 - 118.4	0	20
Toluene	1.93	mg/Kg	1	2.00	<0.00600	96	81.8 - 111.9	2	20
Ethylbenzene	2.10	mg/Kg	1	2.00	<0.00850	105	81.1 - 112.2	2	20
Xylene	6.31	mg/Kg	1	6.00	<0.00613	105	81.7 - 111.5	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)	2.00	2.02	mg/Kg	1	2.00	100	101	69 - 123.3
4-Bromofluorobenzene (4-BFB)	2.01	2.07	mg/Kg	1	2.00	100	104	64.9 - 131.9

Laboratory Control Spike (LCS-1)

QC Batch: 77247
Prep Batch: 66258

Date Analyzed: 2011-01-28
QC Preparation: 2011-01-28

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.3	mg/Kg	1	20.0	<0.753	82	61.8 - 97

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	16.9	mg/Kg	1	20.0	<0.753	84	61.8 - 97	4	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)	2.34	2.44	mg/Kg	1	2.00	117	122	74.6 - 124
4-Bromofluorobenzene (4-BFB)	2.07	2.20	mg/Kg	1	2.00	104	110	53.9 - 121.1

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Laboratory Control Spike (LCS-1)

QC Batch: 77252
Prep Batch: 66264

Date Analyzed: 2011-01-28
QC Preparation: 2011-01-28

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	287	mg/Kg	1	250	<15.7	115	47.5 - 144.1

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	286	mg/Kg	1	250	<15.7	114	47.5 - 144.1	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	123	124	mg/Kg	1	100	123	124	70 - 130

Matrix Spike (MS-1) Spiked Sample: 256045

QC Batch: 77137
Prep Batch: 66171

Date Analyzed: 2011-01-25
QC Preparation: 2011-01-25

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	1060	mg/Kg	1	250	825	94	11.7 - 152.3

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
DRO	⁸ 1360	mg/Kg	1	250	825	214	11.7 - 152.3	25	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	^{9 10} 159	190	mg/Kg	1	100	159	190	70 - 130

Matrix Spike (MS-1) Spiked Sample: 256042

QC Batch: 77163
Prep Batch: 66172

Date Analyzed: 2011-01-26
QC Preparation: 2011-01-24

Analyzed By: AR
Prepared By: AR

⁸Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

⁹High surrogate recovery due to peak interference.

¹⁰High surrogate recovery due to peak interference.

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11000	mg/Kg	100	10000	413	106	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	11200	mg/Kg	100	10000	413	108	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: 256047

QC Batch: 77164
Prep Batch: 66172

Date Analyzed: 2011-01-26
QC Preparation: 2011-01-24

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11300	mg/Kg	100	10000	885	104	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	11700	mg/Kg	100	10000	885	108	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 256117

QC Batch: 77207
Prep Batch: 66225

Date Analyzed: 2011-01-27
QC Preparation: 2011-01-27

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	357	mg/Kg	1	250	190	67	11.7 - 152.3

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
DRO	345	mg/Kg	1	250	190	62	11.7 - 152.3	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	112	109	mg/Kg	1	100	112	109	70 - 130

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Matrix Spike (MS-1) Spiked Sample: 256037

QC Batch: 77246
Prep Batch: 66258

Date Analyzed: 2011-01-28
QC Preparation: 2011-01-28

Analyzed By: ME
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.91	mg/Kg	1	2.00	<0.0118	96	65.5 - 139.8
Toluene	1.93	mg/Kg	1	2.00	<0.00600	96	70.5 - 137.3
Ethylbenzene	2.16	mg/Kg	1	2.00	<0.00850	108	66.7 - 151
Xylene	6.56	mg/Kg	1	6.00	<0.00613	109	68.7 - 149.5

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
Benzene	2.02	mg/Kg	1	2.00	<0.0118	101	65.5 - 139.8	6	20
Toluene	2.05	mg/Kg	1	2.00	<0.00600	102	70.5 - 137.3	6	20
Ethylbenzene	¹¹ 2.30	mg/Kg	1	2.00	<0.00850	115	66.7 - 151	6	20
Xylene	¹² 6.99	mg/Kg	1	6.00	<0.00613	116	68.7 - 149.5	6	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	¹³ 2.34	2.45	mg/Kg	1	2	117	122	50.9 - 152.9
4-Bromofluorobenzene (4-BFB)	2.12	2.26	mg/Kg	1	2	106	113	48.5 - 165.8

Matrix Spike (MS-1) Spiked Sample: 256119

QC Batch: 77247
Prep Batch: 66258

Date Analyzed: 2011-01-28
QC Preparation: 2011-01-28

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	21.1	mg/Kg	1	20.0	<0.753	106	63 - 108.5

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	22.0	mg/Kg	1	20.0	<0.753	110	63 - 108.5	4	20

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

¹¹MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

¹²MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

¹³High surrogate recovery due to peak interference.

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Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.49	2.53	mg/Kg	1	2	124	126	54.1 - 154.3
4-Bromofluorobenzene (4-BFB)	2.19	2.22	mg/Kg	1	2	110	111	41.9 - 162.8

Matrix Spike (MS-1) Spiked Sample: 256042

QC Batch: 77252

Date Analyzed: 2011-01-28

Analyzed By: kg

Prep Batch: 66264

QC Preparation: 2011-01-28

Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	625	mg/Kg	1	250	277	139	11.7 - 152.3

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
DRO	¹⁴ 710	mg/Kg	1	250	277	173	11.7 - 152.3	13	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane ^{15 16}	144	165	mg/Kg	1	100	144	165	70 - 130

Standard (CCV-2)

QC Batch: 77137

Date Analyzed: 2011-01-25

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	295	118	80 - 120	2011-01-25

Standard (CCV-3)

QC Batch: 77137

Date Analyzed: 2011-01-25

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	237	95	80 - 120	2011-01-25

¹⁴Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

¹⁵High surrogate recovery due to peak interference.

¹⁶High surrogate recovery due to peak interference.

Report Date: January 31, 2011
114-6400674

Work Order: 11012509
COG/Lowe 20 #1 TB

Page Number: 23 of 25
Lea Co., NM

Standard (CCV-4)

QC Batch: 77137

Date Analyzed: 2011-01-25

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	204	82	80 - 120	2011-01-25

Standard (ICV-1)

QC Batch: 77163

Date Analyzed: 2011-01-26

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.2	98	85 - 115	2011-01-26

Standard (CCV-1)

QC Batch: 77163

Date Analyzed: 2011-01-26

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	2011-01-26

Standard (ICV-1)

QC Batch: 77164

Date Analyzed: 2011-01-26

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2011-01-26

Standard (CCV-1)

QC Batch: 77164

Date Analyzed: 2011-01-26

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.7	98	85 - 115	2011-01-26

Report Date: January 31, 2011
114-6400674

Work Order: 11012509
COG/Lowe 20 #1 TB

Page Number: 24 of 25
Lca Co., NM

Standard (CCV-1)

QC Batch: 77207

Date Analyzed: 2011-01-27

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	241	96	80 - 120	2011-01-27

Standard (CCV-2)

QC Batch: 77207

Date Analyzed: 2011-01-27

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	234	94	80 - 120	2011-01-27

Standard (CCV-1)

QC Batch: 77246

Date Analyzed: 2011-01-28

Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.103	103	80 - 120	2011-01-28
Toluene		mg/Kg	0.100	0.0996	100	80 - 120	2011-01-28
Ethylbenzene		mg/Kg	0.100	0.107	107	80 - 120	2011-01-28
Xylene		mg/Kg	0.300	0.325	108	80 - 120	2011-01-28

Standard-(CCV-2)

QC Batch: 77246

Date Analyzed: 2011-01-28

Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0995	100	80 - 120	2011-01-28
Toluene		mg/Kg	0.100	0.0994	99	80 - 120	2011-01-28
Ethylbenzene		mg/Kg	0.100	0.108	108	80 - 120	2011-01-28
Xylene		mg/Kg	0.300	0.326	109	80 - 120	2011-01-28

Standard (CCV-1)

QC Batch: 77247

Date Analyzed: 2011-01-28

Analyzed By: AG

Report Date: January 31, 2011
114-6400674

Work Order: 11012509
COG/Lowe 20 #1 TB

Page Number: 25 of 25
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	0.986	99	80 - 120	2011-01-28

Standard (CCV-2)

QC Batch: 77247

Date Analyzed: 2011-01-28

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	1.07	107	80 - 120	2011-01-28

Standard (CCV-2)

QC Batch: 77252

Date Analyzed: 2011-01-28

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	273	109	80 - 120	2011-01-28

Standard (CCV-3)

QC Batch: 77252

Date Analyzed: 2011-01-28

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	237	95	80 - 120	2011-01-28

Lab # 1102509

Analysis Request of Chain of Custody Record

PAGE: 2 OF 2

ANALYSIS REQUEST
(Circle or Specify Method No.)



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

CLIENT NAME: <i>CLC</i>		SITE MANAGER: <i>The Tovar</i>	
PROJECT NO.: <i>114-6400674</i>		PROJECT NAME: <i>CLC / Lane 20 #1 TR</i>	
LAB I.D. NUMBER <i>280517</i>	DATE <i>1/12</i>	TIME <i>4:12</i>	GRAB <i>5</i>
COMB		MATRIX	
SAMPLE IDENTIFICATION <i>20517-4</i>		NUMBER OF CONTAINERS <i>1</i>	
PRESERVATIVE METHOD <i>ICE</i>		HCL	
HNO3		NONE	
BTEX 8021B		TPH 8015 MOD. TX1005 (Ext. to C35)	
PAH 8270		RCRA Metals Ag As Ba Cd Cr Pb Hg Se	
TCLP Metals Ag As Ba Cd Cr Pb Hg Se		TCLP Volatiles	
TCLP Semi Volatiles		RCI	
GC/MS Vol. 8240/8260/824		GC/MS Semi. Vol. 8270/825	
PCB's 8060/608		Post. 808/608	
Chloride		Gamma Spec.	
Alpha Beta (Am)		PLM (Asbestos)	
Major Anions/Cations, pH, TDS			

RELINQUISHED BY: (Signature) <i>[Signature]</i>	Date: <i>1/12/04</i> Time: <i>11:24 AM</i>	SAMPLED BY: (Print & Initial) <i>Robert L. L. L.</i>	Date: <i>1-17-01</i> Time: <i>1910</i>
RELINQUISHED BY: (Signature) <i>[Signature]</i>	Date: <i>1/12/04</i> Time: <i>11:24 AM</i>	SAMPLE SHIPPED BY: (Circle) FEDEX ☒ BUS ☐ UPS ☐	AIRBILL #
RELINQUISHED BY: (Signature) <i>[Signature]</i>	Date: <i>1/12/04</i> Time: <i>11:24 AM</i>	HAND DELIVERED ☒	OTHER
RECEIVING LABORATORY: ADDRESS: <i>Midland Texas</i> CITY: <i>Midland</i> STATE: <i>Tx</i> ZIP: <i>79705</i> CONTACT: <i>Phone</i>	RECEIVED BY: (Signature) <i>[Signature]</i>	RECEIVED BY: (Signature) <i>[Signature]</i>	RECEIVED BY: (Signature) <i>[Signature]</i>
SAMPLE CONDITION WHEN RECEIVED: <i>4.0°C in Act</i>	REMARKS: <i>4.0°C in Act</i>	TETRA TECH CONTACT PERSON: <i>[Signature]</i>	
RUSH Charges Authorized: ☐		RUSH Charges Authorized: ☐	

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

Summary Report

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

Report Date: September 27, 2010

Work Order: 10091329



Project Location: Lea Co., NM
Project Name: COG/Lowe 20 #1 TB
Project Number: 114-6400674

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
244413	AH-1 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244414	AH-1 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244415	AH-1 2-2.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244416	AH-2 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244417	AH-2 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244418	AH-3 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244419	AH-4 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244420	AH-4 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244421	AH-5 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244422	AH-5 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244423	AH-6 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244424	AH-6 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244425	AH-6 2-2.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244426	AH-6 3-3.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244427	AH-6 4-4.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244428	AH-6 5-5.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10

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)
244413 - AH-1 0-1' 1' BEB	3.54	18.6	18.6	63.5	279	1320
244414 - AH-1 1-1.5' 1' BEB	5.42	16.0	32.3	64.4	703	663
244415 - AH-1 2-2.5' 1' BEB	<0.200	<0.200	<0.200	<0.200	<50.0	<20.0
244416 - AH-2 0-1' 1' BEB	1.43	4.28	25.8	56.8	546	1930
244417 - AH-2 1-1.5' 1' BEB	0.480	<0.200	2.77	5.76	404	104
244418 - AH-3 0-1' 1' BEB	0.911	9.03	23.4	44.9	536	747
244419 - AH-4 0-1' 1' BEB	1.36	17.0	23.1	39.2	555	838
244420 - AH-4 1-1.5' 1' BEB	2.62	27.7	39.3	59.2	932	538
244421 - AH-5 0-1' 1' BEB					141	382

continued ...

continued

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)
244423 - AH-6 0-1' 1' BEB					76.5	190

Sample: 244413 - AH-1 0-1' 1' BEB

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

Sample: 244414 - AH-1 1-1.5' 1' BEB

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

Sample: 244415 - AH-1 2-2.5' 1' BEB

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

Sample: 244416 - AH-2 0-1' 1' BEB

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

Sample: 244417 - AH-2 1-1.5' 1' BEB

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

Sample: 244418 - AH-3 0-1' 1' BEB

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

Sample: 244419 - AH-4 0-1' 1' BEB*continued ...*

sample 244419 continued...

Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		256	mg/Kg	4.00

Sample: 244420 - AH-4 1-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		707	mg/Kg	4.00

Sample: 244421 - AH-5 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		466	mg/Kg	4.00

Sample: 244422 - AH-5 1-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		345	mg/Kg	4.00

Sample: 244423 - AH-6 0-1' 1' BEB

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

Sample: 244424 - AH-6 1-1.5' 1' BEB

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

Sample: 244425 - AH-6 2-2.5' 1' BEB

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

Sample: 244426 - AH-6 3-3.5' 1' BEB

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

Sample: 244427 - AH-6 4-4.5' 1' BEB

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

Sample: 244428 - AH-6 5-5.5' 1' BEB

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

Analysis Request of Chain of Custody Record



TETRA TECH

**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3948**

[illegible]

SAMPLE CONDITION WHEN RECEIVED:	REMARKS:	DATE	TIME
3,7°C Wt-Gr	22 Totl 174 errors/1000		

errors in last 20 samples 1.2

run longer samples

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



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

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: September 27, 2010

Work Order: 10091329



-Project Location: Lea Co., NM-

Project Name: COG/Lowe 20 #1 TB
Project Number: 114-6400674

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
244413	AH-1 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244414	AH-1 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244415	AH-1 2-2.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244416	AH-2 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244417	AH-2 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244418	AH-3 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244419	AH-4 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244420	AH-4 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244421	AH-5 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244422	AH-5 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
244423	AH-6 0-1' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244424	AH-6 1-1.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244425	AH-6 2-2.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244426	AH-6 3-3.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244427	AH-6 4-4.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10
244428	AH-6 5-5.5' 1' BEB	soil	2010-09-07	00:00	2010-09-10

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

This report consists of a total of 40 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 COG/Lowe 20 #1 TB were received by TraceAnalysis, Inc. on 2010-09-10 and assigned to work order 10091329. Samples for work order 10091329 were received intact at a temperature of 3.7 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	63055	2010-09-15 at 08:15	73591	2010-09-15 at 09:19
BTEX	S 8021B	63134	2010-09-16 at 12:00	73621	2010-09-16 at 20:46
BTEX	S 8021B	63249	2010-09-21 at 16:00	73738	2010-09-21 at 22:53
Chloride (Titration)	SM 4500-Cl B	63188	2010-09-20 at 12:41	73694	2010-09-21 at 15:03
Chloride (Titration)	SM 4500-Cl B	63189	2010-09-20 at 12:41	73695	2010-09-21 at 15:04
TPH DRO - NEW	S 8015 D	63015	2010-09-13 at 14:45	73458	2010-09-13 at 14:45
TPH DRO - NEW	S 8015 D	63150	2010-09-17 at 11:25	73617	2010-09-17 at 11:25
TPH DRO - NEW	S 8015 D	63205	2010-09-20 at 15:06	73674	2010-09-20 at 15:06
TPH DRO - NEW	S 8015 D	63241	2010-09-21 at 18:35	73720	2010-09-21 at 18:35
TPH GRO	S 8015 D	63055	2010-09-15 at 08:15	73583	2010-09-15 at 09:46
TPH GRO	S 8015 D	63134	2010-09-16 at 12:00	73620	2010-09-16 at 21:14
TPH GRO	S 8015 D	63249	2010-09-21 at 16:00	73737	2010-09-21 at 23:20

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 10091329 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.

Report Date: September 27, 2010
114-6400674

Work Order: 10091329
COG/Lowe 20 #1 TB

Page Number: 4 of 40
Lea Co., NM

Analytical Report

Sample: 244413 - AH-1 0-1' 1' BEB

Laboratory: Midland
Analysis: BTEX
QC Batch: 73621
Prep Batch: 63134

Analytical Method: S 8021B
Date Analyzed: 2010-09-16
Sample Preparation: 2010-09-16

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

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		3.54	mg/Kg	20	0.0200
Toluene		18.6	mg/Kg	20	0.0200
Ethylbenzene		18.6	mg/Kg	20	0.0200
Xylene		63.5	mg/Kg	20	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		22.6	mg/Kg	20	20.0	113	52.8 - 137
4-Bromofluorobenzene (4-BFB)	¹	41.0	mg/Kg	20	20.0	205	38.4 - 157

Sample: 244413 - AH-1 0-1' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 73694
Prep Batch: 63188

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-09-21
Sample Preparation: 2010-09-20

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: 244413 - AH-1 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 73458
Prep Batch: 63015

Analytical Method: S 8015 D
Date Analyzed: 2010-09-13
Sample Preparation: 2010-09-13

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

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		279	mg/Kg	1	50.0

¹ High surrogate recovery due to peak interference.

Report Date: September 27, 2010
114-6400674

Work Order: 10091329
COG/Lowe 20 #1 TB

Page Number: 5 of 40
Lea Co., NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		101	mg/Kg	1	100	101	70 - 130

Sample: 244413 - AH-1 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 73620 Date Analyzed: 2010-09-16 Analyzed By: AG
Prep Batch: 63134 Sample Preparation: 2010-09-16 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		1320	mg/Kg	20	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		22.5	mg/Kg	20	20.0	112	48.5 - 152
4-Bromofluorobenzene (4-BFB)	²	40.5	mg/Kg	20	20.0	202	42 - 159

Sample: 244414 - AH-1 1-1.5' 1' BEB

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 73738 Date Analyzed: 2010-09-21 Analyzed By: AG
Prep Batch: 63249 Sample Preparation: 2010-09-21 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		5.42	mg/Kg	10	0.0200
Toluene		16.0	mg/Kg	10	0.0200
Ethylbenzene		32.3	mg/Kg	10	0.0200
Xylene		64.4	mg/Kg	10	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		10.9	mg/Kg	10	10.0	109	52.8 - 137
4-Bromofluorobenzene (4-BFB)	³	54.2	mg/Kg	10	10.0	542	38.4 - 157

Sample: 244414 - AH-1 1-1.5' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 73694 Date Analyzed: 2010-09-21 Analyzed By: AR
Prep Batch: 63188 Sample Preparation: 2010-09-20 Prepared By: AR

²High surrogate recovery due to peak interference.

³High 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: 244414 - AH-1 1-1.5' 1' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 73674 Date Analyzed: 2010-09-20 Analyzed By: kg
Prep Batch: 63205 Sample Preparation: 2010-09-20 Prepared By: kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		703	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	⁴	154	mg/Kg	1	100	154	70 - 130

Sample: 244414 - AH-1 1-1.5' 1' BEB

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 73737 Date Analyzed: 2010-09-21 Analyzed By: AG
Prep Batch: 63249 Sample Preparation: 2010-09-21 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		663	mg/Kg	10	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.68	mg/Kg	10	10.0	97	48.5 - 152
4-Bromofluorobenzene (4-BFB)	⁵	65.1	mg/Kg	10	10.0	651	42 - 159

Sample: 244415 - AH-1 2-2.5' 1' BEB

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 73738 Date Analyzed: 2010-09-21 Analyzed By: AG
Prep Batch: 63249 Sample Preparation: 2010-09-21 Prepared By: AG

⁴High surrogate recovery due to peak interference.

⁵High surrogate recovery due to peak interference.

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Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.200	mg/Kg	10	0.0200
Toluene		<0.200	mg/Kg	10	0.0200
Ethylbenzene		<0.200	mg/Kg	10	0.0200
Xylene		<0.200	mg/Kg	10	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		10.6	mg/Kg	10	10.0	106	52.8 - 137
4-Bromofluorobenzene (4-BFB)		10.1	mg/Kg	10	10.0	101	38.4 - 157

Sample: 244415 - AH-1 2-2.5' 1' BEB

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 73694

Prep Batch: 63188

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-09-21

Sample Preparation: 2010-09-20

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: 244415 - AH-1 2-2.5' 1' BEB

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 73720

Prep Batch: 63241

Analytical Method: S 8015 D

Date Analyzed: 2010-09-21

Sample Preparation: 2010-09-21

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

Sample: 244415 - AH-1 2-2.5' 1' BEB

Laboratory: Midland

Analysis: TPH GRO

QC Batch: 73737

Prep Batch: 63249

Analytical Method: S 8015 D

Date Analyzed: 2010-09-21

Sample Preparation: 2010-09-21

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

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Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<20.0	mg/Kg	10	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.46	mg/Kg	10	10.0	95	48.5 - 152
4-Bromofluorobenzene (4-BFB)		7.57	mg/Kg	10	10.0	76	42 - 159

Sample: 244416 - AH-2 0-1' 1' BEB

Laboratory: Midland
Analysis: BTEX
QC Batch: 73621
Prep Batch: 63134

Analytical Method: S 8021B
Date Analyzed: 2010-09-16
Sample Preparation: 2010-09-16

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

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		1.43	mg/Kg	20	0.0200
Toluene		4.28	mg/Kg	20	0.0200
Ethylbenzene		25.8	mg/Kg	20	0.0200
Xylene		56.8	mg/Kg	20	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		23.8	mg/Kg	20	20.0	119	52.8 - 137
4-Bromofluorobenzene (4-BFB)	⁶	56.3	mg/Kg	20	20.0	282	38.4 - 157

Sample: 244416 - AH-2 0-1' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 73694
Prep Batch: 63188

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-09-21
Sample Preparation: 2010-09-20

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: 244416 - AH-2 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 73458
Prep Batch: 63015

Analytical Method: S 8015 D
Date Analyzed: 2010-09-13
Sample Preparation: 2010-09-13

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

⁶High surrogate recovery due to peak interference.

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Parameter	Flag	RL Result	Units	Dilution	RL
DRO		546	mg/Kg	1	50.0

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

Sample: 244416 - AH-2 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 73620
Prep Batch: 63134

Analytical Method: S 8015 D
Date Analyzed: 2010-09-16
Sample Preparation: 2010-09-16

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		1930	mg/Kg	20	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		23.3	mg/Kg	20	20.0	116	48.5 - 152
4-Bromofluorobenzene (4-BFB)	⁷	51.9	mg/Kg	20	20.0	260	42 - 159

Sample: 244417 - AH-2 1-1.5' 1' BEB

Laboratory: Midland
Analysis: BTEX
QC Batch: 73738
Prep Batch: 63249

Analytical Method: S 8021B
Date Analyzed: 2010-09-21
Sample Preparation: 2010-09-21

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

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		0.480	mg/Kg	10	0.0200
Toluene		<0.200	mg/Kg	10	0.0200
Ethylbenzene		2.77	mg/Kg	10	0.0200
Xylene		5.76	mg/Kg	10	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		11.1	mg/Kg	10	10.0	111	52.8 - 137
4-Bromofluorobenzene (4-BFB)	⁸	17.9	mg/Kg	10	10.0	179	38.4 - 157

⁷High surrogate recovery due to peak interference.

⁸High surrogate recovery due to peak interference.

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Sample: 244417 - AH-2 1-1.5' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 73694 Date Analyzed: 2010-09-21 Analyzed By: AR
Prep Batch: 63188 Sample Preparation: 2010-09-20 Prepared By: AR

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

Sample: 244417 - AH-2 1-1.5' 1' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 73674 Date Analyzed: 2010-09-20 Analyzed By: kg
Prep Batch: 63205 Sample Preparation: 2010-09-20 Prepared By: kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		404	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	⁹	138	mg/Kg	1	100	138	70 - 130

Sample: 244417 - AH-2 1-1.5' 1' BEB

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 73737 Date Analyzed: 2010-09-21 Analyzed By: AG
Prep Batch: 63249 Sample Preparation: 2010-09-21 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		104	mg/Kg	10	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.90	mg/Kg	10	10.0	99	48.5 - 152
4-Bromofluorobenzene (4-BFB)		13.6	mg/Kg	10	10.0	136	42 - 159

⁹High surrogate recovery due to peak interference.

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Sample: 244418 - AH-3 0-1' 1' BEB

Laboratory: Midland
Analysis: BTEX
QC Batch: 73591
Prep Batch: 63055

Analytical Method: S 8021B
Date Analyzed: 2010-09-15
Sample Preparation: 2010-09-15

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

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		0.911	mg/Kg	10	0.0200
Toluene		9.03	mg/Kg	10	0.0200
Ethylbenzene		23.4	mg/Kg	10	0.0200
Xylene		44.9	mg/Kg	10	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		10.1	mg/Kg	10	10.0	101	52.8 - 137
4-Bromofluorobenzene (4-BFB)	¹⁰	24.3	mg/Kg	10	10.0	243	38.4 - 157

Sample: 244418 - AH-3 0-1' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 73694
Prep Batch: 63188

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-09-21
Sample Preparation: 2010-09-20

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: 244418 - AH-3 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 73458
Prep Batch: 63015

Analytical Method: S 8015 D
Date Analyzed: 2010-09-13
Sample Preparation: 2010-09-13

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

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		536	mg/Kg	1	50.0

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

¹⁰High surrogate recovery due to peak interference.

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Sample: 244418 - AH-3 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 73583
Prep Batch: 63055

Analytical Method: S 8015 D
Date Analyzed: 2010-09-15
Sample Preparation: 2010-09-15

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		747	mg/Kg	10	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		10.1	mg/Kg	10	10.0	101	48.5 - 152
4-Bromofluorobenzene (4-BFB)	¹¹	23.3	mg/Kg	10	10.0	233	42 - 159

Sample: 244419 - AH-4 0-1' 1' BEB

Laboratory: Midland
Analysis: BTEX
QC Batch: 73591
Prep Batch: 63055

Analytical Method: S 8021B
Date Analyzed: 2010-09-15
Sample Preparation: 2010-09-15

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

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		1.36	mg/Kg	10	0.0200
Toluene		17.0	mg/Kg	10	0.0200
Ethylbenzene		23.1	mg/Kg	10	0.0200
Xylene		39.2	mg/Kg	10	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.99	mg/Kg	10	10.0	100	52.8 - 137
4-Bromofluorobenzene (4-BFB)	¹²	24.4	mg/Kg	10	10.0	244	38.4 - 157

Sample: 244419 - AH-4 0-1' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 73694
Prep Batch: 63188

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-09-21
Sample Preparation: 2010-09-20

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		256	mg/Kg	50	4.00

¹¹High surrogate recovery due to peak interference.

¹²High surrogate recovery due to peak interference.

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Sample: 244419 - AH-4 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 73458
Prep Batch: 63015

Analytical Method: S 8015 D
Date Analyzed: 2010-09-13
Sample Preparation: 2010-09-13

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

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		555	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		111	mg/Kg	1	100	111	70 - 130

Sample: 244419 - AH-4 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 73583
Prep Batch: 63055

Analytical Method: S 8015 D
Date Analyzed: 2010-09-15
Sample Preparation: 2010-09-15

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		838	mg/Kg	10	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.74	mg/Kg	10	10.0	97	48.5 - 152
4-Bromofluorobenzene (4-BFB)	¹³	30.8	mg/Kg	10	10.0	308	42 - 159

Sample: 244420 - AH-4 1-1.5' 1' BEB

Laboratory: Midland
Analysis: BTEX
QC Batch: 73738
Prep Batch: 63249

Analytical Method: S 8021B
Date Analyzed: 2010-09-21
Sample Preparation: 2010-09-21

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

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		2.62	mg/Kg	20	0.0200
Toluene		27.7	mg/Kg	20	0.0200
Ethylbenzene		39.3	mg/Kg	20	0.0200
Xylene		59.2	mg/Kg	20	0.0200

¹³High surrogate recovery due to peak interference.

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		22.6	mg/Kg	20	20.0	113	52.8 - 137
4-Bromofluorobenzene (4-BFB)	¹⁴	64.6	mg/Kg	20	20.0	323	38.4 - 157

Sample: 244420 - AH-4 1-1.5' 1' BEB

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 73694

Prep Batch: 63188

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-09-21

Sample Preparation: 2010-09-20

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		707	mg/Kg	50	4.00

Sample: 244420 - AH-4 1-1.5' 1' BEB

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 73617

Prep Batch: 63150

Analytical Method: S 8015 D

Date Analyzed: 2010-09-17

Sample Preparation: 2010-09-17

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		932	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	¹⁵	152	mg/Kg	1	100	152	70 - 130

Sample: 244420 - AH-4 1-1.5' 1' BEB

Laboratory: Midland

Analysis: TPH GRO

QC Batch: 73737

Prep Batch: 63249

Analytical Method: S 8015 D

Date Analyzed: 2010-09-21

Sample Preparation: 2010-09-21

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		538	mg/Kg	20	2.00

¹⁴High surrogate recovery due to peak interference.

¹⁵High surrogate recovery due to peak interference.

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		20.0	mg/Kg	20	20.0	100	48.5 - 152
4-Bromofluorobenzene (4-BFB)	¹⁶	70.2	mg/Kg	20	20.0	351	42 - 159

Sample: 244421 - AH-5 0-1' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 73694 Date Analyzed: 2010-09-21 Analyzed By: AR
Prep Batch: 63188 Sample Preparation: 2010-09-20 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		466	mg/Kg	50	4.00

Sample: 244421 - AH-5 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 73458 Date Analyzed: 2010-09-13 Analyzed By: kg
Prep Batch: 63015 Sample Preparation: 2010-09-13 Prepared By: kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		141	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		98.9	mg/Kg	1	100	99	70 - 130

Sample: 244421 - AH-5 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 73583 Date Analyzed: 2010-09-15 Analyzed By: AG
Prep Batch: 63055 Sample Preparation: 2010-09-15 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		382	mg/Kg	1	2.00

¹⁶High surrogate recovery due to peak interference.

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.60	mg/Kg	1	2.00	130	48.5 - 152
4-Bromofluorobenzene (4-BFB)	¹⁷	8.76	mg/Kg	1	2.00	438	42 - 159

Sample: 244422 - AH-5 1-1.5' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 73695 Date Analyzed: 2010-09-21 Analyzed By: AR
Prep Batch: 63189 Sample Preparation: 2010-09-20 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		345	mg/Kg	50	4.00

Sample: 244423 - AH-6 0-1' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 73695 Date Analyzed: 2010-09-21 Analyzed By: AR
Prep Batch: 63189 Sample Preparation: 2010-09-20 Prepared By: AR

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

Sample: 244423 - AH-6 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 73458 Date Analyzed: 2010-09-13 Analyzed By: kg
Prep Batch: 63015 Sample Preparation: 2010-09-13 Prepared By: kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		76.5	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		93.6	mg/Kg	1	100	94	70 - 130

¹⁷High surrogate recovery due to peak interference.

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Sample: 244423 - AH-6 0-1' 1' BEB

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-09-15	Analyzed By:	AG
QC Batch:	73583	Sample Preparation:	2010-09-15	Prepared By:	AG
Prep Batch:	63055				

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		190	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.52	mg/Kg	1	2.00	126	48.5 - 152
4-Bromofluorobenzene (4-BFB)	¹⁸	5.80	mg/Kg	1	2.00	290	42 - 159

Sample: 244424 - AH-6 1-1.5' 1' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-09-21	Analyzed By:	AR
QC Batch:	73695	Sample Preparation:	2010-09-20	Prepared By:	AR
Prep Batch:	63189				

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

Sample: 244425 - AH-6 2-2.5' 1' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-09-21	Analyzed By:	AR
QC Batch:	73695	Sample Preparation:	2010-09-20	Prepared By:	AR
Prep Batch:	63189				

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

Sample: 244426 - AH-6 3-3.5' 1' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-09-21	Analyzed By:	AR
QC Batch:	73695	Sample Preparation:	2010-09-20	Prepared By:	AR
Prep Batch:	63189				

¹⁸High 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: 244427 - AH-6 4-4.5' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 73695 Date Analyzed: 2010-09-21 Analyzed By: AR
Prep Batch: 63189 Sample Preparation: 2010-09-20 Prepared By: AR

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

Sample: 244428 - AH-6 5-5.5' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 73695 Date Analyzed: 2010-09-21 Analyzed By: AR
Prep Batch: 63189 Sample Preparation: 2010-09-20 Prepared By: AR

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

Method Blank (1) QC Batch: 73458

QC Batch: 73458 Date Analyzed: 2010-09-13 Analyzed By: kg
Prep Batch: 63015 QC Preparation: 2010-09-13 Prepared By: kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		99.6	mg/Kg	1	100	100	70 - 130

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Method Blank (1) QC Batch: 73583

QC Batch: 73583
Prep Batch: 63055

Date Analyzed: 2010-09-15
QC Preparation: 2010-09-15

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<1.65	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.42	mg/Kg	1	2.00	121	67.6 - 150
4-Bromofluorobenzene (4-BFB)		2.19	mg/Kg	1	2.00	110	52.4 - 130

Method Blank (1) QC Batch: 73591

QC Batch: 73591
Prep Batch: 63055

Date Analyzed: 2010-09-15
QC Preparation: 2010-09-15

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.0150	mg/Kg	0.02
Toluene		<0.00950	mg/Kg	0.02
Ethylbenzene		<0.0106	mg/Kg	0.02
Xylene		<0.00930	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.31	mg/Kg	1	2.00	116	66.6 - 122
4-Bromofluorobenzene (4-BFB)		2.63	mg/Kg	1	2.00	132	55.4 - 132

Method Blank (1) QC Batch: 73617

QC Batch: 73617
Prep Batch: 63150

Date Analyzed: 2010-09-17
QC Preparation: 2010-09-17

Analyzed By: kg
Prepared By: kg

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

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

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Method Blank (1) QC Batch: 73620

QC Batch: 73620
Prep Batch: 63134

Date Analyzed: 2010-09-16
QC Preparation: 2010-09-16

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<1.65	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.10	mg/Kg	1	2.00	105	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1.98	mg/Kg	1	2.00	99	52.4 - 130

Method Blank (1) QC Batch: 73621

QC Batch: 73621
Prep Batch: 63134

Date Analyzed: 2010-09-16
QC Preparation: 2010-09-16

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.0150	mg/Kg	0.02
Toluene		<0.00950	mg/Kg	0.02
Ethylbenzene		<0.0106	mg/Kg	0.02
Xylene		<0.00930	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.06	mg/Kg	1	2.00	103	66.6 - 122
4-Bromofluorobenzene (4-BFB)		2.13	mg/Kg	1	2.00	106	55.4 - 132

Method Blank (1) QC Batch: 73674

QC Batch: 73674
Prep Batch: 63205

Date Analyzed: 2010-09-20
QC Preparation: 2010-09-20

Analyzed By: kg
Prepared By: kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		125	mg/Kg	1	100	125	70 - 130

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Method Blank (1) QC Batch: 73694

QC Batch: 73694
Prep Batch: 63188

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-20

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 73695

QC Batch: 73695
Prep Batch: 63189

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-20

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 73720

QC Batch: 73720
Prep Batch: 63241

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-21

Analyzed By: kg
Prepared By: kg

Parameter	Flag	MDL Result	Units	RL
DRO		<14.6	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		98.8	mg/Kg	1	100	99	70 - 130

Method Blank (1) QC Batch: 73737

QC Batch: 73737
Prep Batch: 63249

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-21

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<1.65	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.80	mg/Kg	1	2.00	90	67.6 - 150

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method blank continued ...

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)		1.07	mg/Kg	1	2.00	54	52.4 - 130

Method Blank (1) QC Batch: 73738

QC Batch: 73738
Prep Batch: 63249

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-21

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.0150	mg/Kg	0.02
Toluene		<0.00950	mg/Kg	0.02
Ethylbenzene		<0.0106	mg/Kg	0.02
Xylene		<0.00930	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	66.6 - 122
4-Bromofluorobenzene (4-BFB)		1.53	mg/Kg	1	2.00	76	55.4 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 73458
Prep Batch: 63015

Date Analyzed: 2010-09-13
QC Preparation: 2010-09-13

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	232	mg/Kg	1	250	<14.5	93	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	247	mg/Kg	1	250	<14.5	99	57.4 - 133.4	6	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	92.9	92.8	mg/Kg	1	100	93	93	70 - 130

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Laboratory Control Spike (LCS-1)

QC Batch: 73583
Prep Batch: 63055

Date Analyzed: 2010-09-15
QC Preparation: 2010-09-15

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	14.4	mg/Kg	1	20.0	<1.65	72	69.9 - 95.4

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
GRO	16.4	mg/Kg	1	20.0	<1.65	82	69.9 - 95.4	13	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)	2.00	2.11	mg/Kg	1	2.00	100	106	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.42	1.34	mg/Kg	1	2.00	71	67	65.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 73591
Prep Batch: 63055

Date Analyzed: 2010-09-15
QC Preparation: 2010-09-15

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.00	mg/Kg	1	2.00	<0.0150	100	81.9 - 108
Toluene	1.94	mg/Kg	1	2.00	<0.00950	97	81.9 - 107
Ethylbenzene	1.85	mg/Kg	1	2.00	<0.0106	92	78.4 - 107
Xylene	5.35	mg/Kg	1	6.00	<0.00930	89	79.1 - 107

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	2.12	mg/Kg	1	2.00	<0.0150	106	81.9 - 108	6	20
Toluene	2.05	mg/Kg	1	2.00	<0.00950	102	81.9 - 107	6	20
Ethylbenzene	1.98	mg/Kg	1	2.00	<0.0106	99	78.4 - 107	7	20
Xylene	5.74	mg/Kg	1	6.00	<0.00930	96	79.1 - 107	7	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.04	2.13	mg/Kg	1	2.00	102	106	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1.50	1.61	mg/Kg	1	2.00	75	80	69.8 - 121

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Laboratory Control Spike (LCS-1)

QC Batch: 73617
Prep Batch: 63150

Date Analyzed: 2010-09-17
QC Preparation: 2010-09-17

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	258	mg/Kg	1	250	<14.5	103	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	265	mg/Kg	1	250	<14.5	106	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	113	114	mg/Kg	1	100	113	114	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 73620
Prep Batch: 63134

Date Analyzed: 2010-09-16
QC Preparation: 2010-09-16

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	18.3	mg/Kg	1	20.0	<1.65	92	69.9 - 95.4

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
GRO	¹⁹ 19.9	mg/Kg	1	20.0	<1.65	100	69.9 - 95.4	8	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.23	2.18	mg/Kg	1	2.00	112	109	61.9 - 142
4-Bromofluorobenzene (4-BFB)	2.21	2.34	mg/Kg	1	2.00	110	117	65.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 73621
Prep Batch: 63134

Date Analyzed: 2010-09-16
QC Preparation: 2010-09-16

Analyzed By: AG
Prepared By: AG

¹⁹LCSD analyte out of range. LCS/LCSD has a RPD within limits. Therefore, LCS shows extraction occurred properly.

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.12	mg/Kg	1	2.00	<0.0150	106	81.9 - 108
Toluene	2.09	mg/Kg	1	2.00	<0.00950	104	81.9 - 107
Ethylbenzene	2.08	mg/Kg	1	2.00	<0.0106	104	78.4 - 107
Xylene	6.27	mg/Kg	1	6.00	<0.00930	104	79.1 - 107

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	2.04	mg/Kg	1	2.00	<0.0150	102	81.9 - 108	4	20
Toluene	2.07	mg/Kg	1	2.00	<0.00950	104	81.9 - 107	1	20
Ethylbenzene	2.12	mg/Kg	1	2.00	<0.0106	106	78.4 - 107	2	20
Xylene	6.28	mg/Kg	1	6.00	<0.00930	105	79.1 - 107	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.09	2.20	mg/Kg	1	2.00	104	110	70.2 - 114
4-Bromofluorobenzene (4-BFB)	2.41	2.39	mg/Kg	1	2.00	120	120	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 73674
Prep Batch: 63205

Date Analyzed: 2010-09-20
QC Preparation: 2010-09-20

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	328	mg/Kg	1	250	<14.5	131	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	330	mg/Kg	1	250	<14.5	132	57.4 - 133.4	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	120	118	mg/Kg	1	100	120	118	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 73694
Prep Batch: 63188

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-20

Analyzed By: AR
Prepared By: AR

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	94.5	mg/Kg	1	100	<2.18	94	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	6	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 73695
Prep Batch: 63189

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-20

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.3	mg/Kg	1	100	<2.18	97	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	103	mg/Kg	1	100	<2.18	103	85 - 115	6	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 73720
Prep Batch: 63241

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-21

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	173	mg/Kg	1	250	<14.6	69	47.5 - 144.1

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	204	mg/Kg	1	250	<14.6	82	47.5 - 144.1	16	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	106	120	mg/Kg	1	100	106	120	70 - 130

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Laboratory Control Spike (LCS-1)

QC Batch: 73737
Prep Batch: 63249

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-21

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.4	mg/Kg	1	20.0	<1.65	77	69.9 - 95.4

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
GRO	14.7	mg/Kg	1	20.0	<1.65	74	69.9 - 95.4	5	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.94	1.85	mg/Kg	1	2.00	97	92	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.70	1.64	mg/Kg	1	2.00	85	82	65.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 73738
Prep Batch: 63249

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-21

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.05	mg/Kg	1	2.00	<0.0150	102	81.9 - 108
Toluene	2.04	mg/Kg	1	2.00	<0.00950	102	81.9 - 107
Ethylbenzene	2.07	mg/Kg	1	2.00	<0.0106	104	78.4 - 107
Xylene	6.21	mg/Kg	1	6.00	<0.00930	104	79.1 - 107

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	2.07	mg/Kg	1	2.00	<0.0150	104	81.9 - 108	1	20
Toluene	2.06	mg/Kg	1	2.00	<0.00950	103	81.9 - 107	1	20
Ethylbenzene	2.09	mg/Kg	1	2.00	<0.0106	104	78.4 - 107	1	20
Xylene	6.32	mg/Kg	1	6.00	<0.00930	105	79.1 - 107	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.99	2.09	mg/Kg	1	2.00	100	104	70.2 - 114
4-Bromofluorobenzene (4-BFB)	2.30	2.35	mg/Kg	1	2.00	115	118	69.8 - 121

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Matrix Spike (MS-1) Spiked Sample: 244435

QC Batch: 73458
Prep Batch: 63015

Date Analyzed: 2010-09-13
QC Preparation: 2010-09-13

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	²⁰ 726	mg/Kg	1	250	726	0	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	²¹ 1120	mg/Kg	1	250	726	122	35.2 - 167.1	43	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	²² 109	141	mg/Kg	1	100	109	141	70 - 130

Matrix Spike (MS-1) Spiked Sample: 244319

QC Batch: 73583
Prep Batch: 63055

Date Analyzed: 2010-09-15
QC Preparation: 2010-09-15

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.3	mg/Kg	1	20.0	<1.65	82	61.8 - 114

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	²³ 20.1	mg/Kg	1	20.0	<1.65	100	61.8 - 114	21	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)	1.96	2.31	mg/Kg	1	2	98	116	50 - 162
4-Bromofluorobenzene (4-BFB)	1.73	2.09	mg/Kg	1	2	86	104	50 - 162

²⁰ Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

²¹ MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

²² High surrogate recovery due to peak interference.

²³ MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

Matrix Spike (MS-1) Spiked Sample: 244456

QC Batch: 73591
Prep Batch: 63055

Date Analyzed: 2010-09-15
QC Preparation: 2010-09-15

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.16	mg/Kg	1	2.00	<0.0150	108	80.5 - 112
Toluene	2.21	mg/Kg	1	2.00	<0.00950	110	82.4 - 113
Ethylbenzene	²⁴ 2.34	mg/Kg	1	2.00	<0.0106	117	83.9 - 114
Xylene	²⁵ 6.92	mg/Kg	1	6.00	<0.00930	115	84 - 114

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
Benzene	²⁶ 2.42	mg/Kg	1	2.00	<0.0150	121	80.5 - 112	11	20
Toluene	²⁷ 2.46	mg/Kg	1	2.00	<0.00950	123	82.4 - 113	11	20
Ethylbenzene	²⁸ 2.61	mg/Kg	1	2.00	<0.0106	130	83.9 - 114	11	20
Xylene	²⁹ 7.88	mg/Kg	1	6.00	<0.00930	131	84 - 114	13	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	³⁰ 2.34	2.54	mg/Kg	1	2	117	127	41.3 - 117
4-Bromofluorobenzene (4-BFB)	^{31 32} 2.72	2.93	mg/Kg	1	2	136	146	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 244989

QC Batch: 73617
Prep Batch: 63150

Date Analyzed: 2010-09-17
QC Preparation: 2010-09-17

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	280	mg/Kg	1	250	38.3	97	35.2 - 167.1

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

²⁴Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

²⁵Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

²⁶MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

²⁷MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

²⁸MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

²⁹MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

³⁰High surrogate recovery due to peak interference.

³¹High surrogate recovery due to peak interference.

³²High surrogate recovery due to peak interference.

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	271	mg/Kg	1	250	38.3	93	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	107	105	mg/Kg	1	100	107	105	70 - 130

Matrix Spike (MS-1) Spiked Sample: 244471

QC Batch: 73620
Prep Batch: 63134

Date Analyzed: 2010-09-16
QC Preparation: 2010-09-16

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	22.4	mg/Kg	1	20.0	<1.65	112	61.8 - 114

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	22.6	mg/Kg	1	20.0	<1.65	113	61.8 - 114	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.28	2.23	mg/Kg	1	2	114	112	50 - 162
4-Bromofluorobenzene (4-BFB)	2.43	2.49	mg/Kg	1	2	122	124	50 - 162

Matrix Spike (MS-1) Spiked Sample: 244760

QC Batch: 73621
Prep Batch: 63134

Date Analyzed: 2010-09-16
QC Preparation: 2010-09-16

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	³³ 2.54	mg/Kg	1	2.00	<0.0150	127	80.5 - 112
Toluene	³⁴ 2.60	mg/Kg	1	2.00	<0.00950	130	82.4 - 113
Ethylbenzene	³⁵ 2.86	mg/Kg	1	2.00	<0.0106	143	83.9 - 114
Xylene	³⁶ 8.36	mg/Kg	1	6.00	<0.00930	139	84 - 114

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

³³Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

³⁴Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

³⁵Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

³⁶Matrix spike recovery out of control limits due to peak interference. 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
Benzene	³⁷ 2.55	mg/Kg	1	2.00	<0.0150	128	80.5 - 112	0	20
Toluene	³⁸ 2.64	mg/Kg	1	2.00	<0.00950	132	82.4 - 113	2	20
Ethylbenzene	³⁹ 2.88	mg/Kg	1	2.00	<0.0106	144	83.9 - 114	1	20
Xylene	⁴⁰ 8.57	mg/Kg	1	6.00	<0.00930	143	84 - 114	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.91	2.32	mg/Kg	1	2	96	116	41.3 - 117
4-Bromofluorobenzene (4-BFB)	⁴¹ 2.33	2.86	mg/Kg	1	2	116	143	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 245188

QC Batch: 73674
Prep Batch: 63205

Date Analyzed: 2010-09-20
QC Preparation: 2010-09-20

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	318	mg/Kg	1	250	83.1	94	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	373	mg/Kg	1	250	83.1	116	35.2 - 167.1	16	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	117	114	mg/Kg	1	100	117	114	70 - 130

Matrix Spike (MS-1) Spiked Sample: 244421

QC Batch: 73694
Prep Batch: 63188

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-20

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10400	mg/Kg	100	10000	466	99	85 - 115

³⁷MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

³⁸MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

³⁹MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

⁴⁰MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

⁴¹High surrogate recovery due to peak interference.

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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	10600	mg/Kg	100	10000	466	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: 244431

QC Batch: 73695
Prep Batch: 63189

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-20

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11000	mg/Kg	100	10000	1010	100	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	11400	mg/Kg	100	10000	1010	104	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 245270

QC Batch: 73720
Prep Batch: 63241

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-21

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	158	mg/Kg	1	250	<14.6	63	11.7 - 152.3

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
DRO	170	mg/Kg	1	250	<14.6	68	11.7 - 152.3	7	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	104	112	mg/Kg	1	100	104	112	70 - 130

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Matrix Spike (MS-1) Spiked Sample: 244875

QC Batch: 73737
Prep Batch: 63249

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-21

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.3	mg/Kg	1	20.0	<1.65	82	61.8 - 114

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	16.8	mg/Kg	1	20.0	<1.65	84	61.8 - 114	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
Trifluorotoluene (TFT)	2.09	1.96	mg/Kg	1	2	104	98	50 - 162
4-Bromofluorobenzene (4-BFB)	2.03	1.87	mg/Kg	1	2	102	94	50 - 162

Matrix Spike (MS-1) Spiked Sample: 244827

QC Batch: 73738
Prep Batch: 63249

Date Analyzed: 2010-09-21
QC Preparation: 2010-09-21

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.05	mg/Kg	1	2.00	<0.0150	102	80.5 - 112
Toluene	2.09	mg/Kg	1	2.00	<0.00950	104	82.4 - 113
Ethylbenzene	2.22	mg/Kg	1	2.00	<0.0106	111	83.9 - 114
Xylene	6.60	mg/Kg	1	6.00	<0.00930	110	84 - 114

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
Benzene	⁴²	2.28	mg/Kg	1	2.00	<0.0150	114	80.5 - 112	11	20
Toluene	⁴³	2.32	mg/Kg	1	2.00	<0.00950	116	82.4 - 113	10	20
Ethylbenzene	⁴⁴	2.49	mg/Kg	1	2.00	<0.0106	124	83.9 - 114	12	20
Xylene	⁴⁵	7.39	mg/Kg	1	6.00	<0.00930	123	84 - 114	11	20

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

⁴²MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

⁴³MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

⁴⁴MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

⁴⁵MSD analyte out of range. MS/MSD has a RPD within limits. Therefore, MS shows extraction occurred properly.

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Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	⁴⁶	2.04	2.44	mg/Kg	1	2	102	122	41.3 - 117
4-Bromofluorobenzene (4-BFB)	⁴⁷	2.43	2.80	mg/Kg	1	2	122	140	35.5 - 129

Standard (CCV-1)

QC Batch: 73458 Date Analyzed: 2010-09-13 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	256	102	80 - 120	2010-09-13

Standard (CCV-2)

QC Batch: 73458 Date Analyzed: 2010-09-13 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	269	108	80 - 120	2010-09-13

Standard (CCV-3)

QC Batch: 73458 Date Analyzed: 2010-09-13 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	290	116	80 - 120	2010-09-13

Standard (CCV-2)

QC Batch: 73583 Date Analyzed: 2010-09-15 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	1.19	119	80 - 120	2010-09-15

⁴⁶High surrogate recovery due to peak interference.

⁴⁷High surrogate recovery due to peak interference.

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Standard (CCV-3)

QC Batch: 73583

Date Analyzed: 2010-09-15

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	1.16	116	80 - 120	2010-09-15

Standard (CCV-2)

QC Batch: 73591

Date Analyzed: 2010-09-15

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	0.113	113	80 - 120	2010-09-15
Toluene		mg/Kg	0.100	0.112	112	80 - 120	2010-09-15
Ethylbenzene		mg/Kg	0.100	0.112	112	80 - 120	2010-09-15
Xylene		mg/Kg	0.300	0.339	113	80 - 120	2010-09-15

Standard (CCV-3)

QC Batch: 73591

Date Analyzed: 2010-09-15

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	0.110	110	80 - 120	2010-09-15
Toluene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-15
Ethylbenzene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-15
Xylene		mg/Kg	0.300	0.331	110	80 - 120	2010-09-15

Standard (CCV-1)

QC Batch: 73617

Date Analyzed: 2010-09-17

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	261	104	80 - 120	2010-09-17

Standard (CCV-2)

QC Batch: 73617

Date Analyzed: 2010-09-17

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	287	115	80 - 120	2010-09-17

Standard (CCV-2)

QC Batch: 73620

Date Analyzed: 2010-09-16

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	1.05	105	80 - 120	2010-09-16

Standard (CCV-3)

QC Batch: 73620

Date Analyzed: 2010-09-16

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	1.16	116	80 - 120	2010-09-16

Standard (CCV-2)

QC Batch: 73621

Date Analyzed: 2010-09-16

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	0.108	108	80 - 120	2010-09-16
Toluene		mg/Kg	0.100	0.107	107	80 - 120	2010-09-16
Ethylbenzene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-16
Xylene		mg/Kg	0.300	0.323	108	80 - 120	2010-09-16

Standard (CCV-3)

QC Batch: 73621

Date Analyzed: 2010-09-16

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	0.106	106	80 - 120	2010-09-16
Toluene		mg/Kg	0.100	0.104	104	80 - 120	2010-09-16
Ethylbenzene		mg/Kg	0.100	0.105	105	80 - 120	2010-09-16

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Xylene		mg/Kg	0.300	0.315	105	80 - 120	2010-09-16

Standard (CCV-1)

QC Batch: 73674

Date Analyzed: 2010-09-20

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	288	115	80 - 120	2010-09-20

Standard (CCV-2)

QC Batch: 73674

Date Analyzed: 2010-09-20

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	201	80	80 - 120	2010-09-20

Standard (ICV-1)

QC Batch: 73694

Date Analyzed: 2010-09-21

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2010-09-21

Standard (CCV-1)

QC Batch: 73694

Date Analyzed: 2010-09-21

Analyzed By: AR

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	2010-09-21

Standard (ICV-1)

QC Batch: 73695

Date Analyzed: 2010-09-21

Analyzed By: AR

Report Date: September 27, 2010
114-6400674

Work Order: 10091329
COG/Lowe 20 #1 TB

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Lea Co., NM

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	2010-09-21

Standard (CCV-1)

QC Batch: 73695

Date Analyzed: 2010-09-21

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.7	99	85 - 115	2010-09-21

Standard (CCV-1)

QC Batch: 73720

Date Analyzed: 2010-09-21

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	210	84	80 - 120	2010-09-21

Standard (CCV-2)

QC Batch: 73720

Date Analyzed: 2010-09-21

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	217	87	80 - 120	2010-09-21

Standard (CCV-1)

QC Batch: 73737

Date Analyzed: 2010-09-21

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	0.968	97	80 - 120	2010-09-21

Standard (CCV-2)

QC Batch: 73737

Date Analyzed: 2010-09-21

Analyzed By: AG

Report Date: September 27, 2010
114-6400674

Work Order: 10091329
COG/Lowe 20 #1 TB

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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	0.887	89	80 - 120	2010-09-21

Standard (CCV-3)

QC Batch: 73737

Date Analyzed: 2010-09-21

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	0.882	88	80 - 120	2010-09-21

Standard (CCV-1)

QC Batch: 73738

Date Analyzed: 2010-09-21

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	0.109	109	80 - 120	2010-09-21
Toluene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-21
Ethylbenzene		mg/Kg	0.100	0.110	110	80 - 120	2010-09-21
Xylene		mg/Kg	0.300	0.333	111	80 - 120	2010-09-21

Standard (CCV-2)

QC Batch: 73738

Date Analyzed: 2010-09-21

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	0.109	109	80 - 120	2010-09-21
Toluene		mg/Kg	0.100	0.108	108	80 - 120	2010-09-21
Ethylbenzene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-21
Xylene		mg/Kg	0.300	0.327	109	80 - 120	2010-09-21

Standard (CCV-3)

QC Batch: 73738

Date Analyzed: 2010-09-21

Analyzed By: AG

Report Date: September 27, 2010
114-6400674

Work Order: 10091329
COG/Lowe 20 #1 TB

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Lea Co., NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.105	105	80 - 120	2010-09-21
Toluene		mg/Kg	0.100	0.104	104	80 - 120	2010-09-21
Ethylbenzene		mg/Kg	0.100	0.104	104	80 - 120	2010-09-21
Xylene		mg/Kg	0.300	0.314	105	80 - 120	2010-09-21

Analysis Request of Chain of Custody Record

ANALYSIS REQUEST
(Circle or Specify Method No.)

TETRA TECH

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

CLIENT NAME:		PROJECT NAME:		SITE MANAGER:	
COG		COG		Ike Taverz	
PROJECT NO.:		DATE		TIME	
114-4400674		2010		9/4	
LAB I.D. NUMBER		DATE		TIME	
244113		2010		9/4	
LAB I.D. NUMBER		DATE		TIME	
414		2010		9/4	
415		2010		9/4	
416		2010		9/4	
417		2010		9/4	
418		2010		9/4	
419		2010		9/4	
420		2010		9/4	
421		2010		9/4	
422		2010		9/4	
LAB I.D. NUMBER		DATE		TIME	
423		2010		9/4	
424		2010		9/4	
425		2010		9/4	
426		2010		9/4	
427		2010		9/4	
428		2010		9/4	
429		2010		9/4	
430		2010		9/4	
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495		2010		9/4	
496		2010		9/4	
497		2010		9/4	
498		2010		9/4	

SAMPLE CONDITION WHEN RECEIVED:	REMARKS:
37°C intact	21 total TPH exceeds 1000 mg/kg, run deeper sample ALL tests midlevel Return Original copy to Tetra Tech Project Manager retains Pink copy - Accounting receives Gold copy. Run (4) BTEX on highest TPH.