SITE INFORMATION

Report Type: Closure

General Site Information:						
Site:	JR's Horz Federal Tank Battery					
Company:	COG Operating LLC					
Section, Township and Range	Unit D	Sec 10	T26S	R29E		
Lease Number:	NMNM-92177					
County:	Eddy County					
GPS:	32.06344° N			103.97959° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	Starting in Malaga travel south 12 miles on Hyw 285, turn left on Co Rd 725 (Longhorn Rd) and travel 4 miles, turn right and travel 1.1 miles to tank battery.					

Release Data:	
Date Released:	11/10/2010
Type Release:	Oil
Source of Contamination:	Oil Tanks
Fluid Released:	328 bbls
Fluids Recovered:	161 bbls

RECEIVED
MAR 13 2013
NMOCD ARTESIA

Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		1910 N. Big Spring
	600 W. Illinois Ave.		
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 425-3878
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		ike.tavarez@tetratech.com

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

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

TETRA TECH

February 13, 2013

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Closure Report for the COG Operating LLC., JR's Horz Federal Tank Battery, Unit D, Section 10, Township 26 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the JR's Horz Federal Tank Battery located in Unit D, Section 10, Township 26 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.06344°, W 103.97959°. 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 November 10, 2010, when an oil tank overflowed and released approximately three hundred and twenty eight (328) barrels of oil. The release was contained inside the facility firewall. To alleviate the problem, COG personnel used vacuum trucks to recover the fluids. One hundred and sixty-one (161) barrels of standing fluids were recovered inside the tank battery firewall. The facility measured approximately 35' X 130'. The C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 10. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 100' below surface. The Geology and Groundwater Resources

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

of Eddy County, New Mexico (Report 3) well report data 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 5,000 mg/kg.

Soil Assessment and Analytical Results

On December 29, 2010, Tetra Tech personnel inspected and sampled the spill area. Prior to sampling, COG had excavated the spill area to a depth from 1.0' to 3.0' below surface and backfilled the excavations. Tetra Tech collected samples below the clean backfilled material. 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. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, AH-2 samples were above the allowed RRAL for TPH and BTEX and declined below the RRAL at 3.0' and the chloride concentration declined with depth to 940 mg/kg. All remaining auger holes had chloride levels that ranged from <200 mg/kg to 1,270 mg/kg. Samples at 0-1.0' from AH-3, AH-4 and AH-6 showed chloride concentrations of 718 mg/kg, 1,270 mg/kg and 988 mg/kg, respectively. Deeper samples were not collected due to a dense formation.

Based on the results, Tetra Tech prepared and submitted a work plan to the NMOCD for approval, dated March 1, 2011. Tetra Tech proposed to excavate the area of AH-2 to a depth of approximately 3.0' to 4.0' to remove the TPH and BTEX above the RRAL. In addition, backhoe trenches were

proposed in the areas of AH-2, AH-3, AH-4 and AH-6 to collect deeper samples to define the chloride extents, if accessible.

Corrective Action

On March 24, 2011, the proposed work plan was performed and excavated the area of AH-2 to a depth of 3.0' below surface. As proposed, the backhoe trenches were installed in the areas of AH-2 (T-4), AH-3 (T-3), AH-4 (T-2) and AH-6 (T-1). Samples were collected to define the chloride extents. The sampling results are shown in Table 1. Referring to Table 1, all of the trench locations showed declining chloride concentrations with depth, except the area of AH-6 (T-1). Auger hole AH-6 (T-1) showed elevated chloride concentrations from 1.0' (5,580 mg/kg) to 7.0' (6,500 mg/kg) and not vertically defined.

On March 26, 2012, Tetra Tech installed a soil boring to define the chloride extents. The soil boring results are shown in Table 1. Referring to Table 1, the chloride concentrations significantly declined at 4-5' below surface.

Based on the results, Tetra Tech personnel supervised the excavation of area of AH-6 to a depth of 3.0' to 4.0' below surface. Once excavated to the appropriate depth, the excavation bottom was capped with a 40 mil liner and backfilled with clean material to grade. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4. All of the excavated soil was transported to the R360 facility for proper disposal.

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

Respectfully submitted,
TETRA TECH

Ike Tavarez
Project Manager

cc: Pat Ellis – COG
cc: Terry Gregston – BLM

Figures

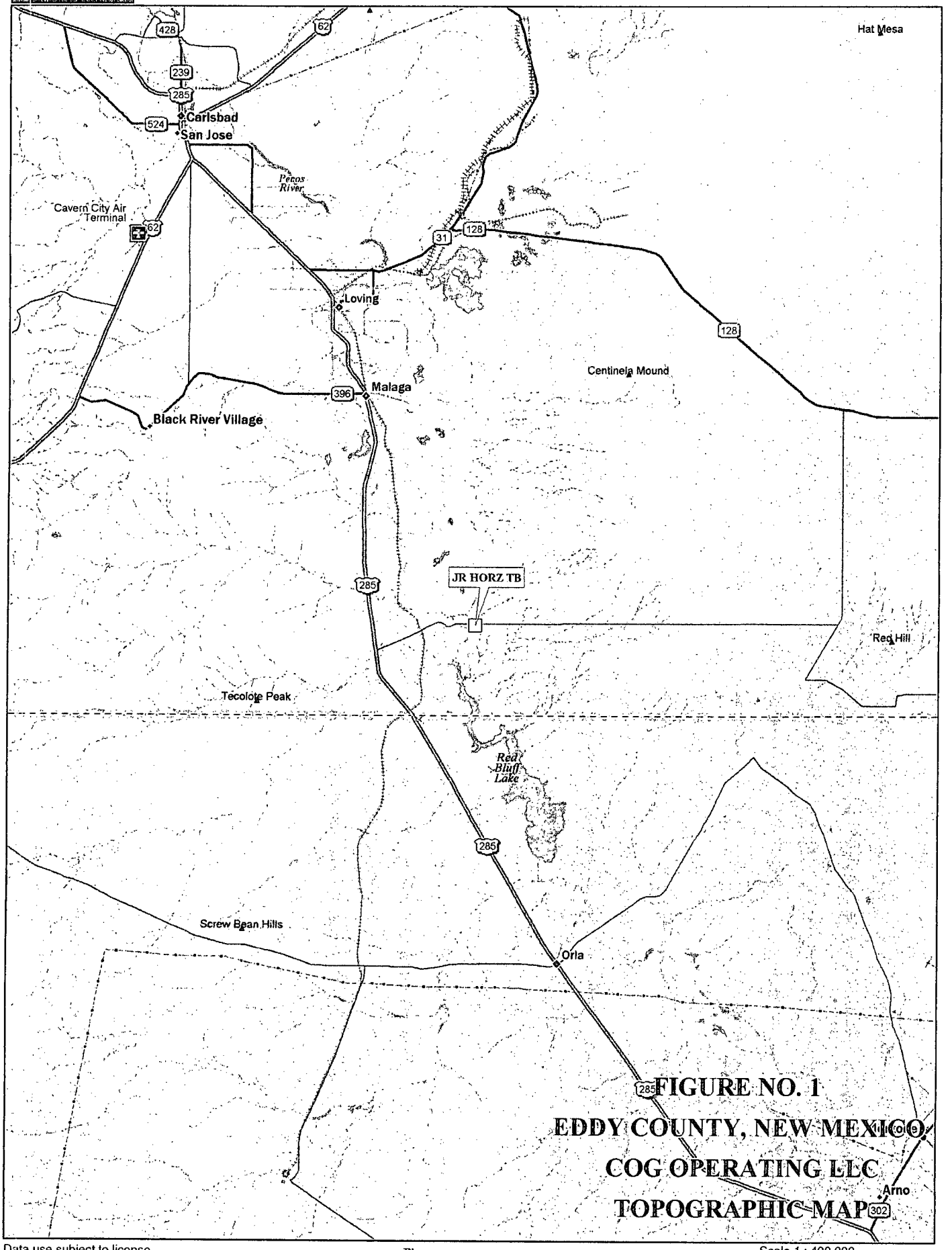


FIGURE NO. 1

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

TN
MN (7.8°E)

Scale 1 : 400,000
1" = 6.31 mi
Data Zoom 9-0

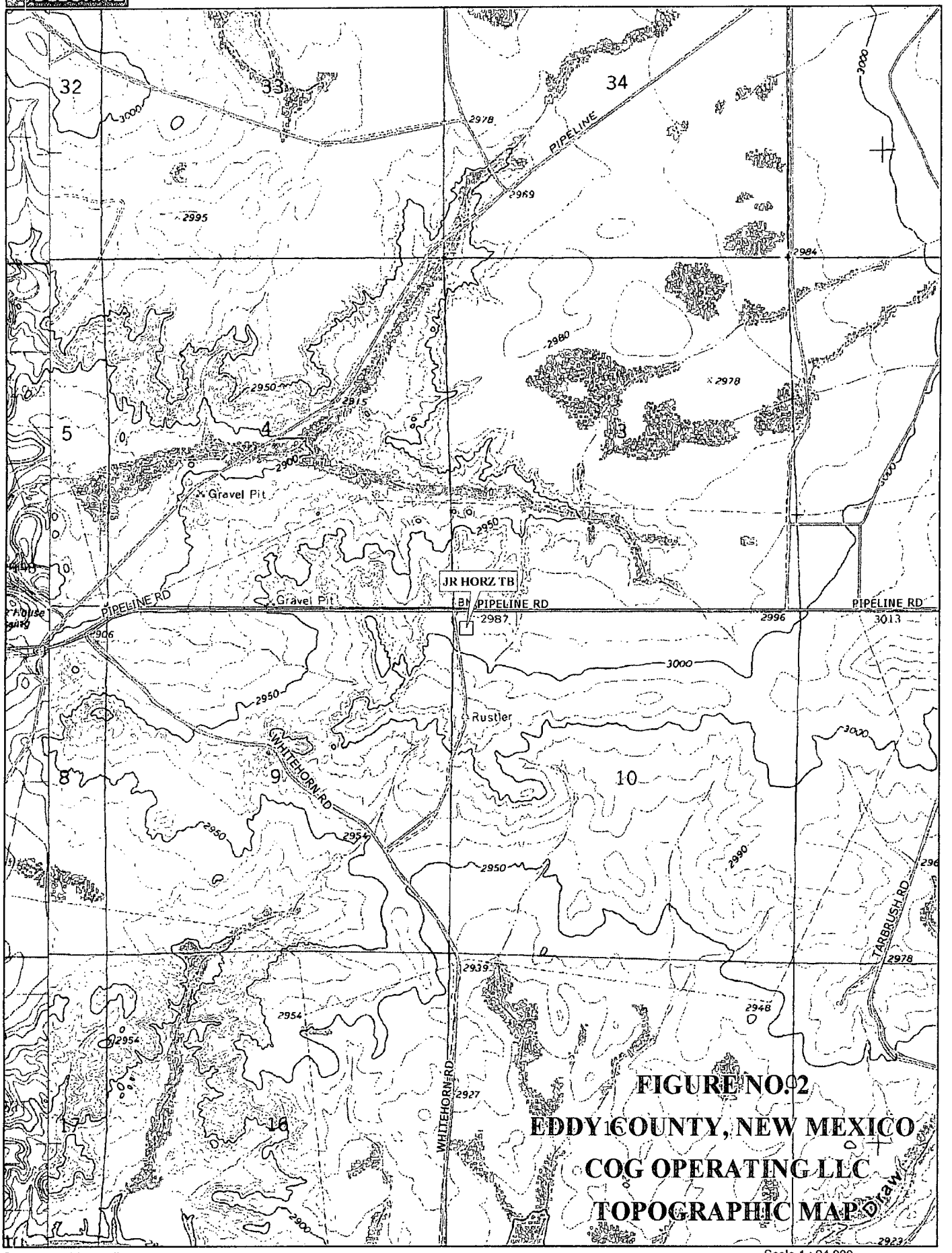
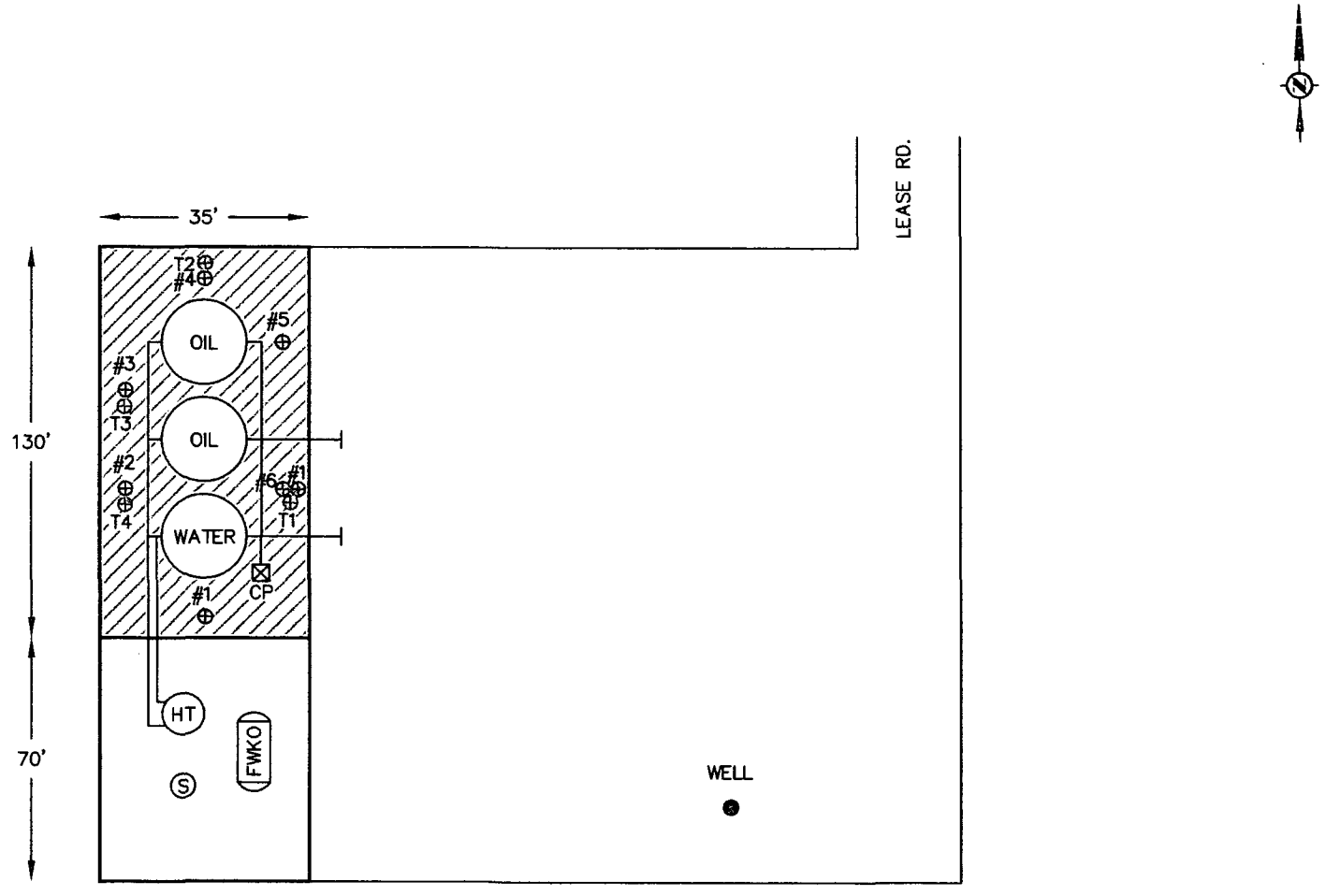


FIGURE NO. 2
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

TN
MN (7.8°E)

Scale 1 : 24,000
1" = 2,000.0 ft
Data Zoom 13-0



SPILL AREA
AUGER HOLE SAMPLE LOCATIONS
BORE HOLE SAMPLE LOCATIONS
TRENCH LOCATIONS

NOT TO SCALE

FIGURE NO. 3

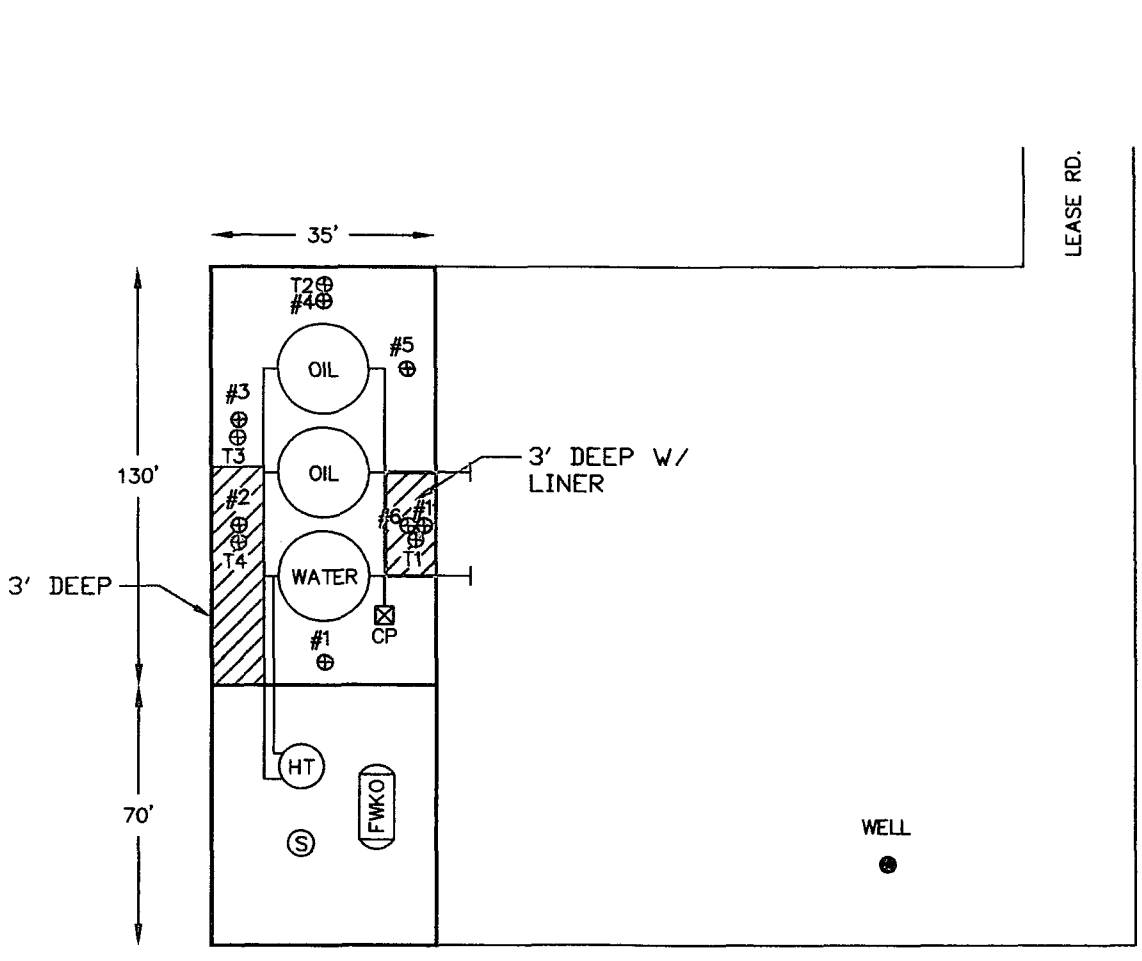
EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

JR HORZ TB
SPILL ASSESSMENT MAP

DATE: 4/5/2011
DWN. BY: IM
FILE: H:\COG\84007743 JR HORZ TB

TETRA TECH, INC.
MIDLAND, TEXAS



⊕ AUGER HOLE SAMPLE LOCATIONS
⊕ BORE HOLE SAMPLE LOCATIONS
⊕ TRENCH LOCATIONS
☐ INSTALLED LINER
▨ EXCAVATED AREA

NOT TO SCALE

FIGURE NO. 4

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

JR HORZ TB
EXCAVATION AREAS & DEPTHS MAP

DATE: 12/4/2012
DWN. BY: IM
FILE: H:\COG\840743 JR HORZ TB

TETRA TECH, INC.
MIDLAND, TEXAS

Tables

Table 1
COG Operating LLC.
JR's Horz Federal Tank Battery
EDDY COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	12/29/2010	0-1'	2'	X		<2.00	<50.0	<50.0	-	-	-	-	408
		1-1.5'	2'	X		-	-	-	-	-	-	-	511
		2-2.5'	2'	X		-	-	-	-	-	-	-	367
		3-3.5'	2'	X		-	-	-	-	-	-	-	475
AH-2	12/29/2010	0-1'	1'		X	4,410	6,420	10,830	8.26	42.4	29.2	86.8	1,200
		1-1.5'	1'		X	6,760	9,700	16,460	9.91	48.5	30.5	86	1,350
		2-2.5'	1'		X	5,720	22,300	28,020	11.9	121	60.3	176	1,030
		3-3.5'	1'	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	940
T-4	3/24/2011	5'				-	-	-	-	-	-	-	1,080
		7'				-	-	-	-	-	-	-	724
AH-3	12/29/2010	0-1'	1'	X		183	398	581	<0.100	0.337	0.864	3.7	718
T-3	3/24/2011	1'				-	-	-	-	-	-	-	<200
		3'				-	-	-	-	-	-	-	1,070
		5'				-	-	-	-	-	-	-	710
		7'				-	-	-	-	-	-	-	553
AH-4	12/29/2010	0-1'	1'	X		27.9	195.0	222.9	-	-	-	-	1,270
T-2	3/24/2011	1'				-	-	-	-	-	-	-	1,980
		3'				-	-	-	-	-	-	-	1,070
		5'				-	-	-	-	-	-	-	1,010
		7'				-	-	-	-	-	-	-	340

Table 1
COG Operating LLC.
JR's Horz Federal Tank Battery
EDDY COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-5	12/29/2010	0-1'	1'	X		1,910	1,870	3,780	<0.200	4.03	4.88	14.3	<200
AH-6	12/29/2010	0-1'	1'	X		21.1	364.0	385.1	-	-	-	-	988
T-1	3/24/2011	1'			X	-	-	-	-	-	-	-	5,580
		3'			X	-	-	-	-	-	-	-	9,060
		5'				-	-	-	-	-	-	-	3,900
		7'				-	-	-	-	-	-	-	6,500
BH-1	3/26/2012	0-1	-		X	-	-	-	-				4,620
	"	2-3	-		X	-	-	-	-				4,860
	"	4-5	-	X		-	-	-	-	-	-	-	864
	"	6-7	-	X		-	-	-	-	-	-	-	497
	"	9-10	-	X		-	-	-	-	-	-	-	526
	"	14-15	-	X		-	-	-	-	-	-	-	1,250
	"	19-20	-	X		-	-	-	-	-	-	-	241
	"	24-25	-	X		-	-	-	-	-	-	-	594

BEB Below Excavation Bottom

(--) Not Analyzed

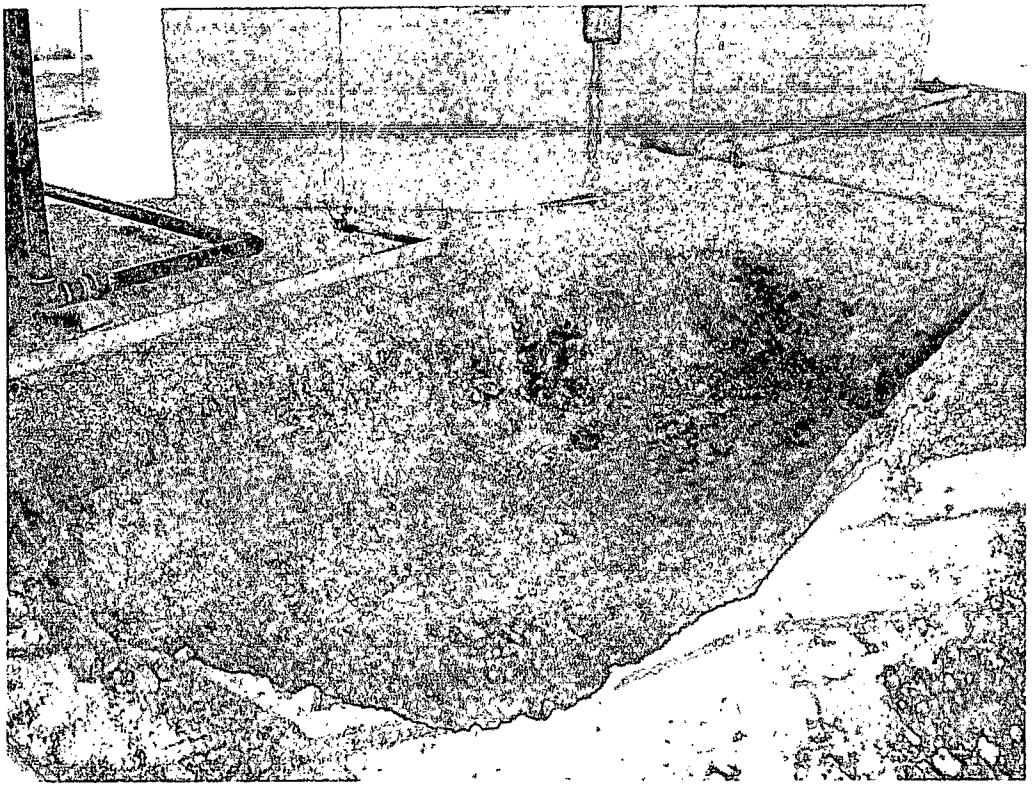
Excavated Depths

Liner Installed

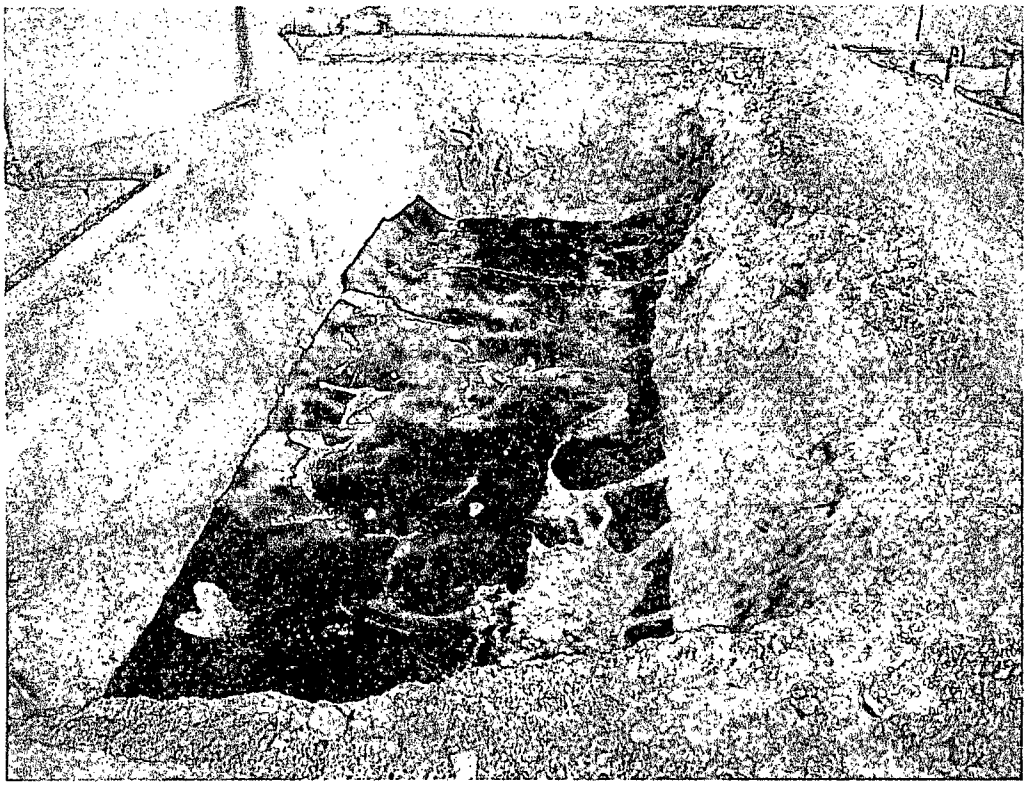
Photos

COG Operating LLC
JR's Horz Federal Tank Battery
Eddy County, New Mexico

TETRA TECH



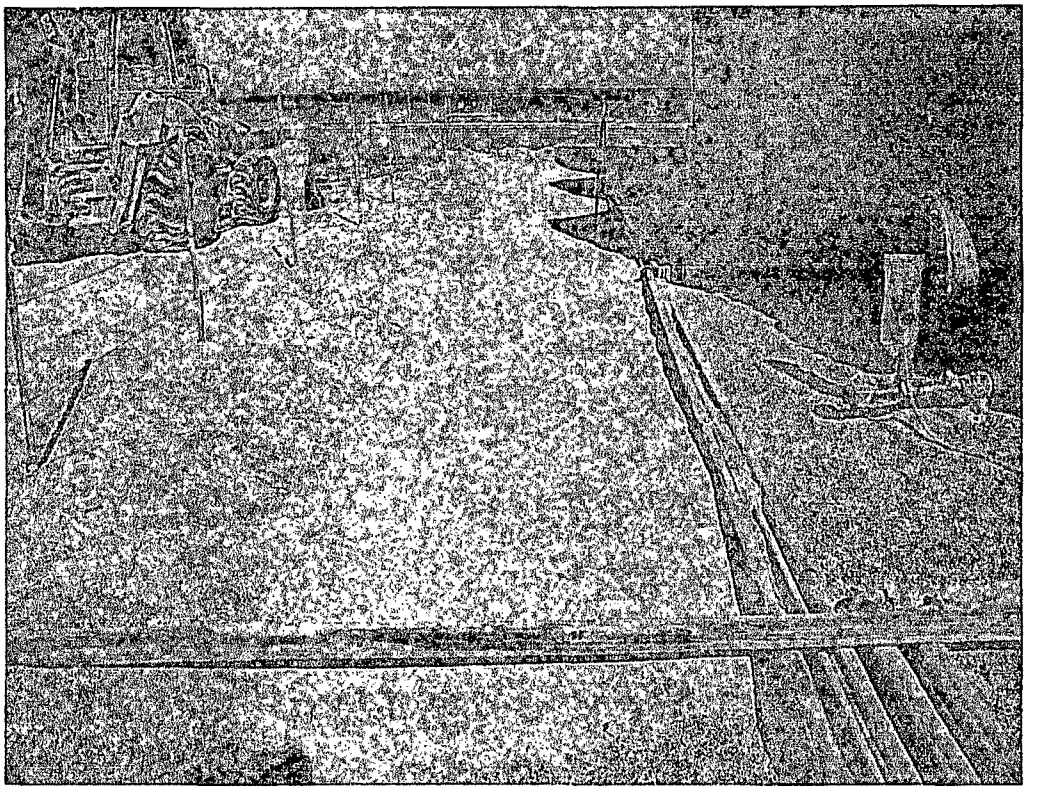
View West – Area of AH-6, BH-1



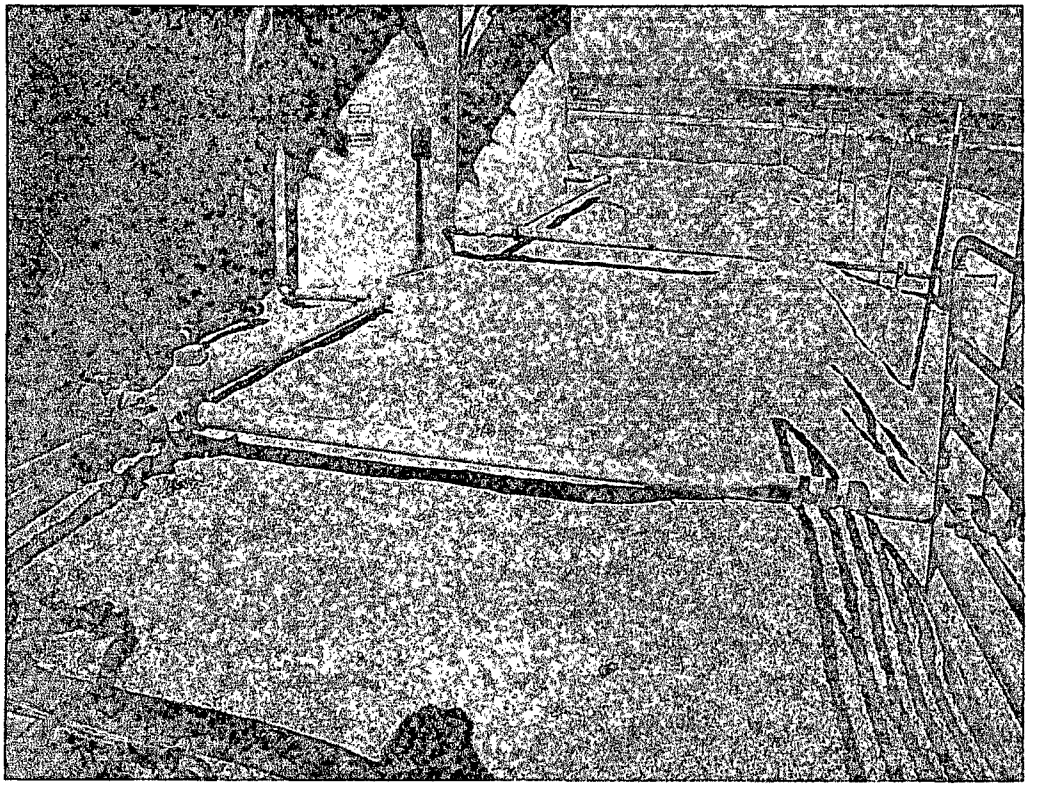
View West – Area of AH-6, BH-1, Liner Installed

COG Operating LLC
JR's Horz Federal Tank Battery
Eddy County, New Mexico

TETRA TECH



View North – Area of AH-2, T-4, Backfill



View North – Area of AH-6, BH-1, Backfill

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

RECEIVED
MAR 13 2013
NMOCD ARTESIA

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	**COG Operating LLC**	Contact	**Pat Ellis**
Address	**550 W. Texas, Suite 1300 Midland, Texas 79701**	Telephone No.	**(432) 230-0077**
Facility Name	JR's Horz Federal Tank Battery	Facility Type	**Tank Battery**

Surface Owner: Federal	Mineral Owner	Lease No. NMNM-92177

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	10	26S	29E	380	North	330	West	Eddy

Latitude N 32.06344° **Longitude** W 103.97959°

NATURE OF RELEASE

Type of Release: Oil	Volume of Release 328 bbls	Volume Recovered 161 bbls
Source of Release: Oil Tanks	Date and Hour of Occurrence 11/10/2010	Date and Hour of Discovery 11/10/2010 8:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Mike Bratcher—OCD** **Terry Gregston—BLM**	
By Whom? Josh Russo	Date and Hour 11/11/2010 8:24 a.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.*

Oil overflowed out of oil storage tanks due to water flow from JR's Horz #1 well backside. JR's Horz #1 well has had tubing and casing shut in until further notice.

Describe Area Affected and Cleanup Action Taken.*

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

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez (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: 2-13-13 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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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	JR's Horz Federal Tank Battery	Facility Type	Tank Battery

Surface Owner Federal	Mineral Owner	Lease No. NMNM-92177

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	10	26S	29E	380	North	330	West	Eddy

Latitude 32 03.799 **Longitude** 103 58.756

NATURE OF RELEASE

Type of Release Oil	Volume of Release 328bbls	Volume Recovered 161bbls
Source of Release Oil tanks	Date and Hour of Occurrence 11/10/2010	Date and Hour of Discovery 11/10/2010 8:30 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher—OCD Terry Gregston—BLM	
By Whom? Josh Russo	Date and Hour 11/11/2010 8:24 a.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.*

Oil overflowed out of oil storage tanks due to water flow from JR's Horz #1 well backside. JR's Horz #1 well has had tubing and casing shut in until further notice.

Describe Area Affected and Cleanup Action Taken.*

Initially 328bbls of oil was released from the tanks and we were able to recover 161bbls of oil with vacuum trucks. All released fluid was contained inside the dike walls of the facility. The spill area had the dimensions of 30' x 120' inside the dike. (The closest well location to the release is on the same pad location, JR's Horz Federal #1 well, API# 30-015-33066). Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD/BLM for approval prior to any significant remediation work.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Josh Russo	Approved by District Supervisor:	
Title: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 11/16/2010 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Jr's Horz Federal Tank Battery
Eddy County, New Mexico

24 South 28 East

6 70	5 30	4 30	3	2 55	1 60
7	8 50	9	10 17	11 20	12 73
18	17 42	16 29	15 18	14 52	13 34
19	20 48	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South 29 East

6	5	4	3	2	1
7 160	8	9	10	11	12
18	17	16 18	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South 30 East

6	5	4	3	2
7	8 186	9	10	11
18	17	16	15	14
19 231 150	20	21	22	23 400
30	29	28	27	26
31	32	33	34	35

25 South 28 East

6	5	4 35	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20 96	21	22	23	24
30	29	28 90	27	26	25
31	32	33	34	35	36 40

25 South 29 East

6 40	5	4	3	2	1
7	8	9	10 40	11	12
18	17	16	15 60	14	13
19	20	21	22	23	24
30 30	29	28	27	26	25
31	32	33	34	35	36

25 South 30 East

6	5	4	3	2
7 264	8	9 295	10	11
18	17	16	15	14
19	20	21 265 268	22	23
30	29	28	27	26
31	32	33	34	35

26 South 28 East

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

26 South 29 East

6	5	4	3	2	1
7	8	9	10 SITE	11	12
18	17	16	15	14	13
19	20	21	22 57 69	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 30 East

6	5 179 180	4	3	2
7	8 172	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35

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

Appendix C

Summary Report

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

Report Date: April 12, 2012

Work Order: 12032802

Project Location: Eddy Co., NM
Project Name: COG/Jr. Horz
Project Number: 114-6400743

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
292499	BH-1 @ T-1 (AH-6) 0-1'	soil	2012-03-26	00:00	2012-03-27
292500	BH-1 @ T-1 (AH-6) 2-3'	soil	2012-03-26	00:00	2012-03-27
292501	BH-1 @ T-1 (AH-6) 4-5'	soil	2012-03-26	00:00	2012-03-27
292502	BH-1 @ T-1 (AH-6) 6-7'	soil	2012-03-26	00:00	2012-03-27
292503	BH-1 @ T-1 (AH-6) 9-10'	soil	2012-03-26	00:00	2012-03-27
292504	BH-1 @ T-1 (AH-6) 14-15'	soil	2012-03-26	00:00	2012-03-27
292505	BH-1 @ T-1 (AH-6) 19-20'	soil	2012-03-26	00:00	2012-03-27
292506	BH-1 @ T-1 (AH-6) 24-25'	soil	2012-03-26	00:00	2012-03-27

Sample: 292499 - BH-1 @ T-1 (AH-6) 0-1'

Param	Flag	Result	Units	RL
Chloride		**4620**	mg/Kg	4

Sample: 292500 - BH-1 @ T-1 (AH-6) 2-3'

Param	Flag	Result	Units	RL
Chloride		**4860**	mg/Kg	4

Sample: 292501 - BH-1 @ T-1 (AH-6) 4-5'

Param	Flag	Result	Units	RL
Chloride		**864**	mg/Kg	4

Sample: 292502 - BH-1 @ T-1 (AH-6) 6-7'

Param	Flag	Result	Units	RL
Chloride		**497**	mg/Kg	4

Sample: 292503 - BH-1 @ T-1 (AH-6) 9-10'

Param	Flag	Result	Units	RL
Chloride		**526**	mg/Kg	4

Sample: 292504 - BH-1 @ T-1 (AH-6) 14-15'

Param	Flag	Result	Units	RL
Chloride		**1250**	mg/Kg	4

Sample: 292505 - BH-1 @ T-1 (AH-6) 19-20'

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

Sample: 292506 - BH-1 @ T-1 (AH-6) 24-25'

Param	Flag	Result	Units	RL
Chloride		**594**	mg/Kg	4

TRACEANALYSIS, INC.

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

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report
(Corrected Report)

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

Report Date: April 12, 2012

Work Order: 12032802

Project Location: Eddy Co., NM
Project Name: COG/Jr. Horz
Project Number: 114-6400743

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
292499	BH-1 @ T-1 (AH-6) 0-1'	soil	2012-03-26	00:00	2012-03-27
292500	BH-1 @ T-1 (AH-6) 2-3'	soil	2012-03-26	00:00	2012-03-27
292501	BH-1 @ T-1 (AH-6) 4-5'	soil	2012-03-26	00:00	2012-03-27
292502	BH-1 @ T-1 (AH-6) 6-7'	soil	2012-03-26	00:00	2012-03-27
292503	BH-1 @ T-1 (AH-6) 9-10'	soil	2012-03-26	00:00	2012-03-27
292504	BH-1 @ T-1 (AH-6) 14-15'	soil	2012-03-26	00:00	2012-03-27
292505	BH-1 @ T-1 (AH-6) 19-20'	soil	2012-03-26	00:00	2012-03-27
292506	BH-1 @ T-1 (AH-6) 24-25'	soil	2012-03-26	00:00	2012-03-27

Report Corrections (Work Order 12032802)

- 4/5/12: Added chloride test for samples 292505-6.

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 12 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

Report Contents

Case Narrative

Samples for project COG/Jr. Horz were received by TraceAnalysis, Inc. on 2012-03-27 and assigned to work order 12032802. Samples for work order 12032802 were received intact at a temperature of 4.2 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	76274	2012-04-02 at 09:58	89957	2012-04-03 at 10:58
Chloride (Titration)	SM 4500-Cl B	76516	2012-04-11 at 09:17	90175	2012-04-12 at 09:18

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 12032802 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 292499 - BH-1 @ T-1 (AH-6) 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89957	Date Analyzed:	2012-04-03	Analyzed By:	AR
Prep Batch:	76274	Sample Preparation:	2012-04-02	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**4620**	mg/Kg	100	4.00

Sample: 292500 - BH-1 @ T-1 (AH-6) 2-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89957	Date Analyzed:	2012-04-03	Analyzed By:	AR
Prep Batch:	76274	Sample Preparation:	2012-04-02	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**4860**	mg/Kg	100	4.00

Sample: 292501 - BH-1 @ T-1 (AH-6) 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89957	Date Analyzed:	2012-04-03	Analyzed By:	AR
Prep Batch:	76274	Sample Preparation:	2012-04-02	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**864**	mg/Kg	50	4.00

Sample: 292502 - BH-1 @ T-1 (AH-6) 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89957	Date Analyzed:	2012-04-03	Analyzed By:	AR
Prep Batch:	76274	Sample Preparation:	2012-04-02	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**497**	mg/Kg	50	4.00

Sample: 292503 - BH-1 @ T-1 (AH-6) 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89957	Date Analyzed:	2012-04-03	Analyzed By:	AR
Prep Batch:	76274	Sample Preparation:	2012-04-02	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**526**	mg/Kg	50	4.00

Sample: 292504 - BH-1 @ T-1 (AH-6) 14-15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89957	Date Analyzed:	2012-04-03	Analyzed By:	AR
Prep Batch:	76274	Sample Preparation:	2012-04-02	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1250**	mg/Kg	100	4.00

Sample: 292505 - BH-1 @ T-1 (AH-6) 19-20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90175	Date Analyzed:	2012-04-12	Analyzed By:	AR
Prep Batch:	76516	Sample Preparation:	2012-04-11	Prepared By:	AR

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

Sample: 292506 - BH-1 @ T-1 (AH-6) 24-25'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	90175	Date Analyzed:	2012-04-12	Analyzed By:	AR
Prep Batch:	76516	Sample Preparation:	2012-04-11	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**594**	mg/Kg	50	4.00

Method Blanks

Method Blank (1) QC Batch: 89957

QC Batch:	89957	Date Analyzed:	2012-04-03	Analyzed By:	AR
Prep Batch:	76274	QC Preparation:	2012-04-02	Prepared By:	AR

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

Method Blank (1) QC Batch: 90175

QC Batch:	90175	Date Analyzed:	2012-04-12	Analyzed By:	AR
Prep Batch:	76516	QC Preparation:	2012-04-11	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 89957 | Date Analyzed: 2012-04-03 | Analyzed By: AR
Prep Batch: 76274 | QC Preparation: 2012-04-02 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			106	mg/Kg	1	100	<3.85	106	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			99.8	mg/Kg	1	100	<3.85	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: 90175 | Date Analyzed: 2012-04-12 | Analyzed By: AR
Prep Batch: 76516 | QC Preparation: 2012-04-11 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			95.5	mg/Kg	1	100	<3.85	96	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			100	mg/Kg	1	100	<3.85	100	85 - 115	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: 292536

QC Batch: 89957 | Date Analyzed: 2012-04-03 | Analyzed By: AR
Prep Batch: 76274 | QC Preparation: 2012-04-02 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			14300	mg/Kg	100	10000	5080	92	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			15000	mg/Kg	100	10000	5080	99	79.4 - 120.6	5	20

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

Matrix Spike (MS-1) Spiked Sample: 292567

QC Batch: 90175 | Date Analyzed: 2012-04-12 | Analyzed By: AR
Prep Batch: 76516 | QC Preparation: 2012-04-11 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			10200	mg/Kg	100	10000	<385	102	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			10600	mg/Kg	100	10000	<385	106	79.4 - 120.6	4	20

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

Calibration Standards

Standard (ICV-1)

QC Batch: 89957 | Date Analyzed: 2012-04-03 | Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-04-03

Standard (CCV-1)

QC Batch: 89957 | Date Analyzed: 2012-04-03 | 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	98.9	99	85 - 115	2012-04-03

Standard (ICV-1)

QC Batch: 90175 | Date Analyzed: 2012-04-12 | Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.1	98	85 - 115	2012-04-12

Standard (CCV-1)

QC Batch: 90175 | Date Analyzed: 2012-04-12 | 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	102	102	85 - 115	2012-04-12

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

Standard Flags

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

Attachments

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

#12032802

Analysis Request of Chain of Custody Record

PAGE: 1 1

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400743

PROJECT NAME: JR Hoz

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride (* Add Chlorides)	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
292499	3/26		S		X	BH-1 @ T-1 (AH-6) Eddy Co., NM 0-1'	1				X													X				
500						2-3'	1				X													X				
501						4-5'	1				X													X				
502						6-7'	1				X													X				
503						9-10'	1				X													X				
504						14-15'	1				X													X				
505						19-20'	1				X													X*				
506						24-25'	1				X													X*				
507						29-30'	1				X																	

Gamma Spec. per Jeanne 4/5/12 @

RELINQUISHED BY: (Signature) — Date: 3/27/12 Time: 1605 — RECEIVED BY: (Signature) — Date: 3/27/12 Time: 1605

SAMPLED BY: (Print & Initial) Kim — Date: 3/26/12 Time:

RELINQUISHED BY: (Signature) — Date: Time: — RECEIVED BY: (Signature) — Date: Time:

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

RELINQUISHED BY: (Signature) — Date: Time: — RECEIVED BY: (Signature) — Date: Time:

RECEIVING LABORATORY: TRACE — RECEIVED BY: (Signature)

ADDRESS: — CITY: MIDLAND STATE: TX ZIP: — CONTACT: — PHONE: — DATE: — TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4° Intact

REMARKS: all tests Lab Midland

APR -4 2012

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

12032802

Analysis Request of Chain of Custody Record

PAGE: 1 of 1

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

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400743

PROJECT NAME: JR Horz

Eddy Co., NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
292499	3/26		S		X	BH-1 @ T-1 (AH-6) 0-1'	1				X	
500						2-3'	1				X	
501						4-5'	1				X	
502						6-7'	1				X	
503						9-10'	1				X	
504						14-15'	1				X	
505						19-20'	1				X	
506						24-25'	1				X	
507						29-30'	1				X	

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B; TPH 8015 MOD. TX1005 (Ext. to C35); PAH 8270; RCRA Metals Ag As Ba Cd Cr Pb Hg Se; TCLP Metals Ag As Ba Cd Vr Pd Hg Se; TCLP Volatiles; TCLP Semi Volatiles; RCI; GC.MS Vol. 8240/8260/624; GC.MS Semi. Vol. 8270/625; PCB's 8080/608; Pest. 808/608; Chloride, ~~Hyd~~ Chlorides; Gamma Spec.; Alpha Beta (Air); PLM (Asbestos); Major Anions/Cations, pH, TDS

Per Jeanne 4/5/12

RELINQUISHED BY: (Signature)	Date: 3/26/12 Time: 1605	RECEIVED BY: (Signature)	Date: 3/27/12 Time: 16:05
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) Kim — Date: 3/26/12 Time:

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: TRACE
ADDRESS:
CITY: MIDLAND STATE: TX ZIP:
CONTACT: PHONE: DATE: TIME:
RECEIVED BY: (Signature)

SAMPLE CONDITION WHEN RECEIVED: 4° Intact

REMARKS: all tests Trace Midland

APR - 4 2012

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

Summary Report

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

Report Date: March 29, 2011

Work Order: 11032818

Project Location: Eddy Co, NM
Project Name: COG/Jr Horz
Project Number: 114-6400743

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
261862	T-1 1'	soil	2011-03-24	00:00	2011-03-28
261863	T-1 3'	soil	2011-03-24	00:00	2011-03-28
261864	T-1 5'	soil	2011-03-24	00:00	2011-03-28
261865	T-1 7'	soil	2011-03-24	00:00	2011-03-28
261866	T-2 1'	soil	2011-03-24	00:00	2011-03-28
261867	T-2 3'	soil	2011-03-24	00:00	2011-03-28
261868	T-2 5'	soil	2011-03-24	00:00	2011-03-28
261869	T-2 7'	soil	2011-03-24	00:00	2011-03-28
261871	T-3 1'	soil	2011-03-24	00:00	2011-03-28
261872	T-3 3'	soil	2011-03-24	00:00	2011-03-28
261873	T-3 5'	soil	2011-03-24	00:00	2011-03-28
261874	T-3 7'	soil	2011-03-24	00:00	2011-03-28
261877	T-4 5'	soil	2011-03-24	00:00	2011-03-28
261878	T-4 7'	soil	2011-03-24	00:00	2011-03-28

Sample: 261862 - T-1 1'

Param	Flag	Result	Units	RL
Chloride		**5580**	mg/Kg	4.00

Sample: 261863 - T-1 3'

Param	Flag	Result	Units	RL
Chloride		**9060**	mg/Kg	4.00

Sample: 261864 - T-1 5'

Param	Flag	Result	Units	RL
Chloride		**3900**	mg/Kg	4.00

Sample: 261865 - T-1 7'

Param	Flag	Result	Units	RL
Chloride		**6500**	mg/Kg	4.00

Sample: 261866 - T-2 1'

Param	Flag	Result	Units	RL
Chloride		**1980**	mg/Kg	4.00

Sample: 261867 - T-2 3'

Param	Flag	Result	Units	RL
Chloride		**1070**	mg/Kg	4.00

Sample: 261868 - T-2 5'

Param	Flag	Result	Units	RL
Chloride		**1010**	mg/Kg	4.00

Sample: 261869 - T-2 7'

Param	Flag	Result	Units	RL
Chloride		**340**	mg/Kg	4.00

Sample: 261871 - T-3 1'

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

Sample: 261872 - T-3 3'

Param	Flag	Result	Units	RL
Chloride		**1070**	mg/Kg	4.00

Sample: 261873 - T-3 5'

Param	Flag	Result	Units	RL
Chloride		**710**	mg/Kg	4.00

Sample: 261874 - T-3 7'

Param	Flag	Result	Units	RL
Chloride		**553**	mg/Kg	4.00

Sample: 261877 - T-4 5'

Param	Flag	Result	Units	RL
Chloride		**1080**	mg/Kg	4.00

Sample: 261878 - T-4 7'

Param	Flag	Result	Units	RL
Chloride		**724**	mg/Kg	4.00

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 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 LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: March 29, 2011

Work Order: 11032818

Project Location: Eddy Co, NM
Project Name: COG/Jr Horz
Project Number: 114-6400743

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
261862	T-1 1'	soil	2011-03-24	00:00	2011-03-28
261863	T-1 3'	soil	2011-03-24	00:00	2011-03-28
261864	T-1 5'	soil	2011-03-24	00:00	2011-03-28
261865	T-1 7'	soil	2011-03-24	00:00	2011-03-28
261866	T-2 1'	soil	2011-03-24	00:00	2011-03-28
261867	T-2 3'	soil	2011-03-24	00:00	2011-03-28
261868	T-2 5'	soil	2011-03-24	00:00	2011-03-28
261869	T-2 7'	soil	2011-03-24	00:00	2011-03-28
261871	T-3 1'	soil	2011-03-24	00:00	2011-03-28
261872	T-3 3'	soil	2011-03-24	00:00	2011-03-28
261873	T-3 5'	soil	2011-03-24	00:00	2011-03-28

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
261874	T-3 7'	soil	2011-03-24	00:00	2011-03-28
261877	T-4 5'	soil	2011-03-24	00:00	2011-03-28
261878	T-4 7'	soil	2011-03-24	00:00	2011-03-28

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.

Blair Leftwich

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/Jr Horz were received by TraceAnalysis, Inc. on 2011-03-28 and assigned to work order 11032818. Samples for work order 11032818 were received intact at a temperature of 3.6 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	67743	2011-03-28 at 10:16	79844	2011-03-29 at 10:16
Chloride (Titration)	SM 4500-Cl B	67743	2011-03-28 at 10:16	79845	2011-03-29 at 10:17

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 11032818 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 261862 - T-1 1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**5580**	mg/Kg	100	4.00

Sample: 261863 - T-1 3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**9060**	mg/Kg	100	4.00

Sample: 261864 - T-1 5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**3900**	mg/Kg	100	4.00

Sample: 261865 - T-1 7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

continued ...

sample 261865 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**6500**	mg/Kg	100	4.00

Sample: 261866 - T-2 1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1980**	mg/Kg	100	4.00

Sample: 261867 - T-2 3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1070**	mg/Kg	100	4.00

Sample: 261868 - T-2 5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1010**	mg/Kg	100	4.00

Sample: 261869 - T-2 7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**340**	mg/Kg	50	4.00

Sample: 261871 - T-3 1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

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

Sample: 261872 - T-3 3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1070**	mg/Kg	50	4.00

Sample: 261873 - T-3 5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79845	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**710**	mg/Kg	50	4.00

Sample: 261874 - T-3 7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79845	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**553**	mg/Kg	50	4.00

Sample: 261877 - T-4 5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79845	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1080**	mg/Kg	100	4.00

Sample: 261878 - T-4 7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79845	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**724**	mg/Kg	50	4.00

Method Blank (1) QC Batch: 79844

QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	QC Preparation:	2011-03-28	Prepared By:	AR

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

Method Blank (1) QC Batch: 79845

QC Batch: 79845 | Date Analyzed: 2011-03-29 | Analyzed By: AR
Prep Batch: 67743 | QC Preparation: 2011-03-28 | Prepared By: AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 79844 | Date Analyzed: 2011-03-29 | Analyzed By: AR
Prep Batch: 67743 | QC Preparation: 2011-03-28 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.8	mg/Kg	1	100	<3.85	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	104	mg/Kg	1	100	<3.85	104	85 - 115	5	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 79845 | Date Analyzed: 2011-03-29 | Analyzed By: AR
Prep Batch: 67743 | QC Preparation: 2011-03-28 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.2	mg/Kg	1	100	<3.85	97	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	103	mg/Kg	1	100	<3.85	103	85 - 115	6	20

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

Matrix Spike (MS-1) Spiked Sample: 261872

QC Batch: 79844 | Date Analyzed: 2011-03-29 | Analyzed By: AR
Prep Batch: 67743 | QC Preparation: 2011-03-28 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11900	mg/Kg	100	10000	1070	108	80 - 120

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	12200	mg/Kg	100	10000	1070	111	80 - 120	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: 261884

QC Batch: 79845 | Date Analyzed: 2011-03-29 | Analyzed By: AR
Prep Batch: 67743 | QC Preparation: 2011-03-28 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10500	mg/Kg	100	10000	<385	102	80 - 120

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	10800	mg/Kg	100	10000	<385	105	80 - 120	3	20

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

Standard (ICV-1)

QC Batch: 79844 | Date Analyzed: 2011-03-29 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	93.1	93	85 - 115	2011-03-29

Standard (CCV-1)

QC Batch: 79844 | Date Analyzed: 2011-03-29 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	107	107	85 - 115	2011-03-29

Standard (ICV-1)

QC Batch: 79845 | Date Analyzed: 2011-03-29 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.9	99	85 - 115	2011-03-29

Standard (CCV-1)

QC Batch: 79845 | Date Analyzed: 2011-03-29 | 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	2011-03-29

Work Order #: 11032818

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2

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

CLIENT NAME: CEG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640007-43

PROJECT NAME: CEG/ Jo Ann Co, NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2011	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
261862	3/24		S		X	T-1 1'	1				X													X				
863						T-1 3'																		X				
864						T-1 5'																		X				
865						T-1 7'																		X				
866						T-2 1'																		X				
867						T-2 3'																		X				
868						T-2 5'																		X				
869						T-2 7'																		X				
870						T-2 9'																		X				
871	↓		↓		↓	T-3 1'	↓				↓													X				

RELINQUISHED BY: (Signature) Robert Gabbert Jr. Date: 3-24-11 Time: 1100

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Robert Gabbert Jr. Date: 3/24/11 Time: 1100

RELINQUISHED BY: (Signature) Date: 3-28-11 Time: 12:20

RECEIVED BY: (Signature) Date: Time:

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

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RECEIVING LABORATORY: Trace

RECEIVED BY: (Signature)

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: Brenda PHONE:

DATE: 3-28-11 TIME: 12:20

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.6°C Wet

REMARKS: Rush All tests - Midland

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

Work Order #: 11032818

Analysis Request of Chain of Custody Record

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

PAGE: 2 OF: 2

CLIENT NAME: COG

SITE MANAGER: Jake Traweek

PROJECT NO.: 114-6400743

PROJECT NAME: COG / Jc Horz

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Suspnd Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
260872	3/24/2011		S		X	T-3 3'	1				X														X				
873						T-3 5'																			X				
874						T-3 7'																			X				
875						T-4 1'														Hold									
876						T-4 3'														Hold									
877						T-4 5'																			X				
878						T-4 7'																			X				

RELINQUISHED BY: (Signature) — Date: 3/28/11 Time: 1100
RECEIVED BY: (Signature) — Date: Time:
SAMPLED BY: (Print & Initial) Robert Gubbels JC — Date: 3/28/11 Time: 1100

RELINQUISHED BY: (Signature) — Date: 3-28-11 Time: 12:20
RECEIVED BY: (Signature) — Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
TETRA TECH CONTACT PERSON: Jake Traweek — Results by:

RECEIVING LABORATORY: Xenco
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: Mandy PHONE:
RECEIVED BY: (Signature)
DATE: 3.28.11 TIME: 12:20
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.6°C intact
REMARKS:

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

Summary Report

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

Report Date: January 13, 2011

Work Order: 11010504

Project Location: Eddy County, NM
Project Name: COG/JR Horz
Project Number: 114-6400743

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
254664	AH-1 0-1' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254665	AH-1 1-1.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254666	AH-1 2-2.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254667	AH-1 3-3.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254668	AH-2 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254669	AH-2 1-1.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254670	AH-2 2-2.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254671	AH-2 3-3.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254672	AH-3 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254673	AH-4 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254674	AH-5 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254675	AH-6 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05

Sample - Field Code	BTEX Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
254664 - AH-1 0-1' 2' BEB					<50.0	<2.00
254668 - AH-2 0-1' 1' BEB	**8.26**	**42.4**	**29.2**	**86.8**	**6420**	**4410**
254669 - AH-2 1-1.5' 1' BEB	**9.91**	**48.5**	**30.5**	**86.0**	**9700**	**6760**
254670 - AH-2 2-2.5' 1' BEB	**11.9**	**121**	**60.3**	**176**	**22300**	**5720**
254671 - AH-2 3-3.5' 1' BEB	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
254672 - AH-3 0-1' 1' BEB	<0.100	**0.337**	**0.864**	**3.70**	**398**	**183**
254673 - AH-4 0-1' 1' BEB					**195**	**27.9**
254674 - AH-5 0-1' 1' BEB	<0.200	**4.03**	**4.88**	**14.3**	**1870**	**1910**
254675 - AH-6 0-1' 1' BEB					**364**	**21.1**

Sample: 254664 - AH-1 0-1' 2' BEB

Param	Flag	Result	Units	RL
Chloride		**408**	mg/Kg	4.00

Sample: 254665 - AH-1 1-1.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		**511**	mg/Kg	4.00

Sample: 254666 - AH-1 2-2.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		**367**	mg/Kg	4.00

Sample: 254667 - AH-1 3-3.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		**475**	mg/Kg	4.00

Sample: 254668 - AH-2 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**1200**	mg/Kg	4.00

Sample: 254669 - AH-2 1-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**1350**	mg/Kg	4.00

Sample: 254670 - AH-2 2-2.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**1030**	mg/Kg	4.00

Sample: 254671 - AH-2 3-3.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**940**	mg/Kg	4.00

Sample: 254672 - AH-3 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**718**	mg/Kg	4.00

Sample: 254673 - AH-4 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**1270**	mg/Kg	4.00

Sample: 254674 - AH-5 0-1' 1' BEB

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

Sample: 254675 - AH-6 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**988**	mg/Kg	4.00

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 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 LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

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Tetra Tech
1910 N. Big Spring Street
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Report Date: January 13, 2011

Work Order: 11010504

Project Location: Eddy County, NM
Project Name: COG/JR Horz
Project Number: 114-6400743

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
254664	AH-1 0-1' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254665	AH-1 1-1.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254666	AH-1 2-2.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254667	AH-1 3-3.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254668	AH-2 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254669	AH-2 1-1.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254670	AH-2 2-2.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254671	AH-2 3-3.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254672	AH-3 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254673	AH-4 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
254674	AH-5 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254675	AH-6 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05

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

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

Standard Flags

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

Case Narrative

Samples for project COG/JR Horz were received by TraceAnalysis, Inc. on 2011-01-05 and assigned to work order 11010504. Samples for work order 11010504 were received intact at a temperature of 3.0 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	65908	2011-01-12 at 10:10	76857	2011-01-12 at 10:10
Chloride (Titration)	SM 4500-Cl B	65759	2011-01-05 at 10:41	76736	2011-01-07 at 10:24
Chloride (Titration)	SM 4500-Cl B	65759	2011-01-05 at 10:41	76737	2011-01-07 at 10:25
TPH DRO - NEW	S 8015 D	65801	2011-01-06 at 15:19	76742	2011-01-06 at 15:19
TPH DRO - NEW	S 8015 D	65869	2011-01-10 at 14:56	76813	2011-01-10 at 14:56
TPH GRO	S 8015 D	65793	2011-01-06 at 11:27	76727	2011-01-06 at 11:27
TPH GRO	S 8015 D	65888	2011-01-11 at 14:09	76834	2011-01-11 at 14:09

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 11010504 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 254664 - AH-1 0-1' 2' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76736	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**408**		mg/Kg	50	4.00

Sample: 254664 - AH-1 0-1' 2' BEB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	76742	Date Analyzed:	2011-01-06	Analyzed By:	kg
Prep Batch:	65801	Sample Preparation:	2011-01-06	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		94.1	mg/Kg	1	100	94	70 - 130

Sample: 254664 - AH-1 0-1' 2' BEB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	76727	Date Analyzed:	2011-01-06	Analyzed By:	ME
Prep Batch:	65793	Sample Preparation:	2011-01-06	Prepared By:	ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.53	mg/Kg	1	2.00	126	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.36	mg/Kg	1	2.00	118	42 - 159

Sample: 254665 - AH-1 1-1.5' 2' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76736	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**511**	mg/Kg	50	4.00

Sample: 254666 - AH-1 2-2.5' 2' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76736	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**367**	mg/Kg	50	4.00

Sample: 254667 - AH-1 3-3.5' 2' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76736	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**475**	mg/Kg	50	4.00

Sample: 254668 - AH-2 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	76857	Date Analyzed:	2011-01-12	Analyzed By:	ME
Prep Batch:	65908	Sample Preparation:	2011-01-12	Prepared By:	ME

Parameter	Flag	Result	RL Units	Dilution	RL
Benzene		**8.26**	mg/Kg	20	0.0200
Toluene		**42.4**	mg/Kg	20	0.0200

continued ...

sample 254668 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Ethylbenzene		**29.2**	mg/Kg	20	0.0200
Xylene		**86.8**	mg/Kg	20	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		20.7	mg/Kg	20	20.0	104	52.8 - 137
4-Bromofluorobenzene (4-BFB)	[1]	46.6	mg/Kg	20	20.0	233	38.4 - 157

Sample: 254668 - AH-2 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76736	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1200**	mg/Kg	100	4.00

Sample: 254668 - AH-2 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	76742	Date Analyzed:	2011-01-06	Analyzed By:	kg
Prep Batch:	65801	Sample Preparation:	2011-01-06	Prepared By:	kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**6420**	mg/Kg	5	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	[2]	851	mg/Kg	5	100	851	70 - 130

Sample: 254668 - AH-2 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	76727	Date Analyzed:	2011-01-06	Analyzed By:	ME
Prep Batch:	65793	Sample Preparation:	2011-01-06	Prepared By:	ME

[1] High surrogate recovery due to peak interference.
[2] High surrogate recovery due to peak interference.

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**4410**	mg/Kg	20	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		20.2	mg/Kg	20	20.0	101	48.5 - 152
4-Bromofluorobenzene (4-BFB)	[3]	38.1	mg/Kg	20	20.0	190	42 - 159

Sample: 254669 - AH-2 1-1.5' 1' BEB

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	76857	Date Analyzed:	2011-01-12	Analyzed By:	ME
Prep Batch:	65908	Sample Preparation:	2011-01-12	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		**9.91**	mg/Kg	50	0.0200
Toluene		**48.5**	mg/Kg	50	0.0200
Ethylbenzene		**30.5**	mg/Kg	50	0.0200
Xylene		**86.0**	mg/Kg	50	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		44.9	mg/Kg	50	50.0	90	52.8 - 137
4-Bromofluorobenzene (4-BFB)		69.7	mg/Kg	50	50.0	139	38.4 - 157

Sample: 254669 - AH-2 1-1.5' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76736	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1350**	mg/Kg	100	4.00

Sample: 254669 - AH-2 1-1.5' 1' BEB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	76813	Date Analyzed:	2011-01-10	Analyzed By:	kg
Prep Batch:	65869	Sample Preparation:	2011-01-10	Prepared By:	kg

[3]High surrogate recovery due to peak interference.

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**9700**	mg/Kg	10	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	[4]	796	mg/Kg	10	100	796	70 - 130

Sample: 254669 - AH-2 1-1.5' 1' BEB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	76834	Date Analyzed:	2011-01-11	Analyzed By:	ME
Prep Batch:	65888	Sample Preparation:	2011-01-11	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**6760**	mg/Kg	50	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		51.9	mg/Kg	50	50.0	104	48.5 - 152
4-Bromofluorobenzene (4-BFB)		70.4	mg/Kg	50	50.0	141	42 - 159

Sample: 254670 - AH-2 2-2.5' 1' BEB

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	76857	Date Analyzed:	2011-01-12	Analyzed By:	ME
Prep Batch:	65908	Sample Preparation:	2011-01-12	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		**11.9**	mg/Kg	50	0.0200
Toluene		**121**	mg/Kg	50	0.0200
Ethylbenzene		**60.3**	mg/Kg	50	0.0200
Xylene		**176**	mg/Kg	50	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		52.0	mg/Kg	50	50.0	104	52.8 - 137
4-Bromofluorobenzene (4-BFB)	[5]	104	mg/Kg	50	50.0	208	38.4 - 157

[4]High surrogate recovery due to peak interference.
[5]High surrogate recovery due to peak interference.

Sample: 254670 - AH-2 2-2.5' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76736	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**1030**		mg/Kg	100	4.00

Sample: 254670 - AH-2 2-2.5' 1' BEB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	76813	Date Analyzed:	2011-01-10	Analyzed By:	kg
Prep Batch:	65869	Sample Preparation:	2011-01-10	Prepared By:	kg

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		**22300**		mg/Kg	10	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	[6]	1900	mg/Kg	10	100	1900	70 - 130

Sample: 254670 - AH-2 2-2.5' 1' BEB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	76834	Date Analyzed:	2011-01-11	Analyzed By:	ME
Prep Batch:	65888	Sample Preparation:	2011-01-11	Prepared By:	ME

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		**5720**		mg/Kg	50	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		50.4	mg/Kg	50	50.0	101	48.5 - 152
4-Bromofluorobenzene (4-BFB)		71.5	mg/Kg	50	50.0	143	42 - 159

[6] High surrogate recovery due to peak interference.

Sample: 254671 - AH-2 3-3.5' 1' BEB

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	76857	Date Analyzed:	2011-01-12	Analyzed By:	ME
Prep Batch:	65908	Sample Preparation:	2011-01-12	Prepared By:	ME

Parameter	Flag	Result	RL	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)		1.92	mg/Kg	1	2.00	96	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.90	mg/Kg	1	2.00	95	38.4 - 157

Sample: 254671 - AH-2 3-3.5' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76736	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**940**		mg/Kg	100	4.00

Sample: 254671 - AH-2 3-3.5' 1' BEB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	76813	Date Analyzed:	2011-01-10	Analyzed By:	kg
Prep Batch:	65869	Sample Preparation:	2011-01-10	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		92.0	mg/Kg	1	100	92	70 - 130

Sample: 254671 - AH-2 3-3.5' 1' BEB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	76834	Date Analyzed:	2011-01-11	Analyzed By:	ME
Prep Batch:	65888	Sample Preparation:	2011-01-11	Prepared By:	ME

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)		2.30	mg/Kg	1	2.00	115	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.21	mg/Kg	1	2.00	110	42 - 159

Sample: 254672 - AH-3 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	76857	Date Analyzed:	2011-01-12	Analyzed By:	ME
Prep Batch:	65908	Sample Preparation:	2011-01-12	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.100	mg/Kg	5	0.0200
Toluene		**0.337**	mg/Kg	5	0.0200
Ethylbenzene		**0.864**	mg/Kg	5	0.0200
Xylene		**3.70**	mg/Kg	5	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		4.76	mg/Kg	5	5.00	95	52.8 - 137
4-Bromofluorobenzene (4-BFB)		5.18	mg/Kg	5	5.00	104	38.4 - 157

Sample: 254672 - AH-3 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76736	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**718**	mg/Kg	50	4.00

Sample: 254672 - AH-3 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	76742	Date Analyzed:	2011-01-06	Analyzed By:	kg
Prep Batch:	65801	Sample Preparation:	2011-01-06	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	[7]	155	mg/Kg	1	100	155	70 - 130

Sample: 254672 - AH-3 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	76727	Date Analyzed:	2011-01-06	Analyzed By:	ME
Prep Batch:	65793	Sample Preparation:	2011-01-06	Prepared By:	ME

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		**183**		mg/Kg	10	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		11.1	mg/Kg	10	10.0	111	48.5 - 152
4-Bromofluorobenzene (4-BFB)		11.8	mg/Kg	10	10.0	118	42 - 159

Sample: 254673 - AH-4 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76736	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**1270**		mg/Kg	100	4.00

[7]High surrogate recovery due to peak interference.

Sample: 254673 - AH-4 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	76742	Date Analyzed:	2011-01-06	Analyzed By:	kg
Prep Batch:	65801	Sample Preparation:	2011-01-06	Prepared By:	kg

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		**195**		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	[8]	133	mg/Kg	1	100	133	70 - 130

Sample: 254673 - AH-4 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	76727	Date Analyzed:	2011-01-06	Analyzed By:	ME
Prep Batch:	65793	Sample Preparation:	2011-01-06	Prepared By:	ME

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		**27.9**		mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.41	mg/Kg	1	2.00	120	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.46	mg/Kg	1	2.00	123	42 - 159

Sample: 254674 - AH-5 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	76857	Date Analyzed:	2011-01-12	Analyzed By:	ME
Prep Batch:	65908	Sample Preparation:	2011-01-12	Prepared By:	ME

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.200		mg/Kg	10	0.0200
Toluene		**4.03**		mg/Kg	10	0.0200
Ethylbenzene		**4.88**		mg/Kg	10	0.0200
Xylene		**14.3**		mg/Kg	10	0.0200

[8] High surrogate recovery due to peak interference.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.21	mg/Kg	10	10.0	92	52.8 - 137
4-Bromofluorobenzene (4-BFB)		14.4	mg/Kg	10	10.0	144	38.4 - 157

Sample: 254674 - AH-5 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76737	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

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

Sample: 254674 - AH-5 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	76742	Date Analyzed:	2011-01-06	Analyzed By:	kg
Prep Batch:	65801	Sample Preparation:	2011-01-06	Prepared By:	kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**1870**	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	[9]	360	mg/Kg	1	100	360	70 - 130

Sample: 254674 - AH-5 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	76727	Date Analyzed:	2011-01-06	Analyzed By:	ME
Prep Batch:	65793	Sample Preparation:	2011-01-06	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**1910**	mg/Kg	50	2.00

[9] High surrogate recovery due to peak interference.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		56.0	mg/Kg	50	50.0	112	48.5 - 152
4-Bromofluorobenzene (4-BFB)		64.6	mg/Kg	50	50.0	129	42 - 159

Sample: 254675 - AH-6 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	76737	Date Analyzed:	2011-01-07	Analyzed By:	AR
Prep Batch:	65759	Sample Preparation:	2011-01-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**988**	mg/Kg	100	4.00

Sample: 254675 - AH-6 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	76742	Date Analyzed:	2011-01-06	Analyzed By:	kg
Prep Batch:	65801	Sample Preparation:	2011-01-06	Prepared By:	kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**364**	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	[10]	158	mg/Kg	1	100	158	70 - 130

Sample: 254675 - AH-6 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	76727	Date Analyzed:	2011-01-06	Analyzed By:	ME
Prep Batch:	65793	Sample Preparation:	2011-01-06	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**21.1**	mg/Kg	1	2.00

[10]High surrogate recovery due to peak interference.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.28	mg/Kg	1	2.00	114	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.22	mg/Kg	1	2.00	111	42 - 159

Method Blank (1) QC Batch: 76727

QC Batch: 76727 | Date Analyzed: 2011-01-06 | Analyzed By: ME
Prep Batch: 65793 | QC Preparation: 2011-01-06 | Prepared By: ME

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)		1.73	mg/Kg	1	2.00	86	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1.61	mg/Kg	1	2.00	80	52.4 - 130

Method Blank (1) QC Batch: 76736

QC Batch: 76736 | Date Analyzed: 2011-01-07 | Analyzed By: AR
Prep Batch: 65759 | QC Preparation: 2011-01-05 | Prepared By: AR

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

Method Blank (1) QC Batch: 76737

QC Batch: 76737 | Date Analyzed: 2011-01-07 | Analyzed By: AR
Prep Batch: 65759 | QC Preparation: 2011-01-05 | Prepared By: AR

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

Method Blank (1) QC Batch: 76742

QC Batch: 76742 | Date Analyzed: 2011-01-06 | Analyzed By: kg
Prep Batch: 65801 | QC Preparation: 2011-01-06 | 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		85.1	mg/Kg	1	100	85	70 - 130

Method Blank (1) QC Batch: 76813

QC Batch: 76813 Date Analyzed: 2011-01-10 Analyzed By: kg
Prep Batch: 65869 QC Preparation: 2011-01-10 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		99.6	mg/Kg	1	100	100	70 - 130

Method Blank (1) QC Batch: 76834

QC Batch: 76834 Date Analyzed: 2011-01-11 Analyzed By: ME
Prep Batch: 65888 QC Preparation: 2011-01-11 Prepared By: ME

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)		1.70	mg/Kg	1	2.00	85	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1.56	mg/Kg	1	2.00	78	52.4 - 130

Method Blank (1) QC Batch: 76857

QC Batch: 76857 Date Analyzed: 2011-01-12 Analyzed By: ME
Prep Batch: 65908 QC Preparation: 2011-01-12 Prepared By: ME

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.0150	mg/Kg	0.02

continued ...

method blank continued ...

Parameter	Flag	MDL Result	Units	RL
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)		1.75	mg/Kg	1	2.00	88	66.6 - 122
4-Bromofluorobenzene (4-BFB)		1.77	mg/Kg	1	2.00	88	55.4 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 76727 | Date Analyzed: 2011-01-06 | Analyzed By: ME
Prep Batch: 65793 | QC Preparation: 2011-01-06 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.8	mg/Kg	1	20.0	<1.65	79	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	15.6	mg/Kg	1	20.0	<1.65	78	69.9 - 95.4	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
Trifluorotoluene (TFT)	1.64	1.80	mg/Kg	1	2.00	82	90	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.59	1.78	mg/Kg	1	2.00	80	89	65.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 76736 | Date Analyzed: 2011-01-07 | Analyzed By: AR
Prep Batch: 65759 | QC Preparation: 2011-01-05 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	96.1	mg/Kg	1	100	<2.18	96	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	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: 76737 Date Analyzed: 2011-01-07 Analyzed By: AR
Prep Batch: 65759 QC Preparation: 2011-01-05 Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	96.6	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: 76742 Date Analyzed: 2011-01-06 Analyzed By: kg
Prep Batch: 65801 QC Preparation: 2011-01-06 Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	200	mg/Kg	1	250	<14.6	80	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	217	mg/Kg	1	250	<14.6	87	47.5 - 144.1	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
n-Tricosane	117	120	mg/Kg	1	100	117	120	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 76813 Date Analyzed: 2011-01-10 Analyzed By: kg
Prep Batch: 65869 QC Preparation: 2011-01-10 Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	265	mg/Kg	1	250	<14.6	106	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	257	mg/Kg	1	250	<14.6	103	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	124	123	mg/Kg	1	100	124	123	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 76834 | Date Analyzed: 2011-01-11 | Analyzed By: ME
Prep Batch: 65888 | QC Preparation: 2011-01-11 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	14.7	mg/Kg	1	20.0	<1.65	74	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	15.4	mg/Kg	1	20.0	<1.65	77	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)	1.58	1.69	mg/Kg	1	2.00	79	84	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.54	1.67	mg/Kg	1	2.00	77	84	65.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 76857 | Date Analyzed: 2011-01-12 | Analyzed By: ME
Prep Batch: 65908 | QC Preparation: 2011-01-12 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.19	mg/Kg	1	2.00	<0.0150	110	81.9 - 115
Toluene	2.02	mg/Kg	1	2.00	<0.00950	101	81.9 - 113
Ethylbenzene	1.97	mg/Kg	1	2.00	<0.0106	98	78.4 - 107

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Xylene	5.89	mg/Kg	1	6.00	<0.00930	98	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	2.30	mg/Kg	1	2.00	<0.0150	115	81.9 - 115	5	20
Toluene	2.10	mg/Kg	1	2.00	<0.00950	105	81.9 - 113	4	20
Ethylbenzene	2.08	mg/Kg	1	2.00	<0.0106	104	78.4 - 107	5	20
Xylene	6.18	mg/Kg	1	6.00	<0.00930	103	79.1 - 107	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)	1.73	1.65	mg/Kg	1	2.00	86	82	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1.82	1.74	mg/Kg	1	2.00	91	87	69.8 - 121

Matrix Spike (MS-1) Spiked Sample: 254664

QC Batch: 76727 | Date Analyzed: 2011-01-06 | Analyzed By: ME
Prep Batch: 65793 | QC Preparation: 2011-01-06 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.4	mg/Kg	1	20.0	<1.65	77	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	15.6	mg/Kg	1	20.0	<1.65	78	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)	2.49	2.47	mg/Kg	1	2	124	124	50 - 162
4-Bromofluorobenzene (4-BFB)	2.45	2.44	mg/Kg	1	2	122	122	50 - 162

Matrix Spike (MS-1) Spiked Sample: 254673

QC Batch: 76736 | Date Analyzed: 2011-01-07 | Analyzed By: AR
Prep Batch: 65759 | QC Preparation: 2011-01-05 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10400	mg/Kg	100	10000	1270	91	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	11100	mg/Kg	100	10000	1270	98	85 - 115	6	20

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

Matrix Spike (MS-1) Spiked Sample: 254696

QC Batch: 76737 | Date Analyzed: 2011-01-07 | Analyzed By: AR
Prep Batch: 65759 | QC Preparation: 2011-01-05 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11100	mg/Kg	100	10000	1160	99	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11700	mg/Kg	100	10000	1160	105	85 - 115	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: 254664

QC Batch: 76742 | Date Analyzed: 2011-01-06 | Analyzed By: kg
Prep Batch: 65801 | QC Preparation: 2011-01-06 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	161	mg/Kg	1	250	<14.6	64	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	162	mg/Kg	1	250	<14.6	65	11.7 - 152.3	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	106	106	mg/Kg	1	100	106	106	70 - 130

Matrix Spike (MS-1) Spiked Sample: 254671

QC Batch: 76813 | Date Analyzed: 2011-01-10 | Analyzed By: kg
Prep Batch: 65869 | QC Preparation: 2011-01-10 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	220	mg/Kg	1	250	<14.6	88	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	221	mg/Kg	1	250	<14.6	88	11.7 - 152.3	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	107	105	mg/Kg	1	100	107	105	70 - 130

Matrix Spike (MS-1) Spiked Sample: 254671

QC Batch: 76834 | Date Analyzed: 2011-01-11 | Analyzed By: ME
Prep Batch: 65888 | QC Preparation: 2011-01-11 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	17.1	mg/Kg	1	20.0	<1.65	81	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	16.9	mg/Kg	1	20.0	<1.65	80	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	2.22	mg/Kg	1	2	114	111	50 - 162
4-Bromofluorobenzene (4-BFB)	2.33	2.29	mg/Kg	1	2	116	114	50 - 162

Matrix Spike (MS-1) Spiked Sample: 255031

QC Batch: 76857 | Date Analyzed: 2011-01-12 | Analyzed By: ME
Prep Batch: 65908 | QC Preparation: 2011-01-12 | Prepared By: ME

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	[11]	2.48	mg/Kg	1	2.00	<0.0150	124	80.5 - 112
Toluene		2.25	mg/Kg	1	2.00	<0.00950	112	82.4 - 113
Ethylbenzene		2.25	mg/Kg	1	2.00	<0.0106	112	83.9 - 114
Xylene		6.77	mg/Kg	1	6.00	0.1443	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	[12]	2.40	mg/Kg	1	2.00	<0.0150	120	80.5 - 112	3	20
Toluene		2.21	mg/Kg	1	2.00	<0.00950	110	82.4 - 113	2	20
Ethylbenzene		2.22	mg/Kg	1	2.00	<0.0106	111	83.9 - 114	1	20
Xylene		6.69	mg/Kg	1	6.00	0.1443	109	84 - 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)	[13] [14]	2.35	2.42	mg/Kg	1	2	118	121	41.3 - 117
4-Bromofluorobenzene (4-BFB)		2.29	2.38	mg/Kg	1	2	114	119	35.5 - 129

Standard (CCV-1)

QC Batch: 76727 | Date Analyzed: 2011-01-06 | Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.914	91	80 - 120	2011-01-06

Standard (CCV-2)

QC Batch: 76727 | Date Analyzed: 2011-01-06 | Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.913	91	80 - 120	2011-01-06

Standard (CCV-3)

QC Batch: 76727 | Date Analyzed: 2011-01-06 | Analyzed By: ME

[11] Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.
[12] Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.
[13] Surrogate out due to peak interference.
[14] Surrogate out due to peak interference.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.976	98	80 - 120	2011-01-06

Standard (ICV-1)

QC Batch: 76736 Date Analyzed: 2011-01-07 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.6	98	85 - 115	2011-01-07

Standard (CCV-1)

QC Batch: 76736 Date Analyzed: 2011-01-07 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	2011-01-07

Standard (ICV-1)

QC Batch: 76737 Date Analyzed: 2011-01-07 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.9	98	85 - 115	2011-01-07

Standard (CCV-1)

QC Batch: 76737 Date Analyzed: 2011-01-07 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	2011-01-07

Standard (CCV-1)

QC Batch: 76742 Date Analyzed: 2011-01-06 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	200	80	80 - 120	2011-01-06

Standard (CCV-2)

QC Batch: 76742 Date Analyzed: 2011-01-06 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	251	100	80 - 120	2011-01-06

Standard (CCV-3)

QC Batch: 76742 Date Analyzed: 2011-01-06 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	224	90	80 - 120	2011-01-06

Standard (CCV-2)

QC Batch: 76813 Date Analyzed: 2011-01-10 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	286	114	80 - 120	2011-01-10

Standard (CCV-3)

QC Batch: 76813 Date Analyzed: 2011-01-10 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	253	101	80 - 120	2011-01-10

Standard (CCV-1)

QC Batch: 76834 Date Analyzed: 2011-01-11 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.877	88	80 - 120	2011-01-11

Standard (CCV-2)

QC Batch: 76834 Date Analyzed: 2011-01-11 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.988	99	80 - 120	2011-01-11

Standard (CCV-1)

QC Batch: 76857 Date Analyzed: 2011-01-12 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	0.114	114	80 - 120	2011-01-12
Toluene		mg/Kg	0.100	0.102	102	80 - 120	2011-01-12
Ethylbenzene		mg/Kg	0.100	0.0987	99	80 - 120	2011-01-12
Xylene		mg/Kg	0.300	0.295	98	80 - 120	2011-01-12

Standard (CCV-2)

QC Batch: 76857 Date Analyzed: 2011-01-12 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	0.111	111	80 - 120	2011-01-12
Toluene		mg/Kg	0.100	0.103	103	80 - 120	2011-01-12
Ethylbenzene		mg/Kg	0.100	0.101	101	80 - 120	2011-01-12
Xylene		mg/Kg	0.300	0.302	101	80 - 120	2011-01-12

Standard (CCV-3)

QC Batch: 76857 Date Analyzed: 2011-01-12 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	0.112	112	80 - 120	2011-01-12
Toluene		mg/Kg	0.100	0.104	104	80 - 120	2011-01-12
Ethylbenzene		mg/Kg	0.100	0.101	101	80 - 120	2011-01-12
Xylene		mg/Kg	0.300	0.297	99	80 - 120	2011-01-12

WO# 11010504

Analysis Request of Chain of Custody Record

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

PAGE: 1 OF: 2

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400[illegible]13

PROJECT NAME: COG / Ic Horz Eddy Co, NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
254664	12/29		S		X	AH-1 0-1' 2' BEB	1				X			X											X				
665						AH-1 1-1.5' 2' BEB																			X				
666						AH-1 2-2.5' 2' BEB																			X				
667						AH-1 3-3.5' 2' BEB																			X				
668						AH-2 0-1' 1' BEB								X											X				
669						AH-2 1-1.5' 1' BEB																			X				
670						AH-2 2-2.5' 1' BEB																			X				
671						AH-2 3-3.5' 1' BEB																			X				
672						AH-3 0-1 1' BEB								X											X				
673						AH-4 0-1 1' BEB								X											X				

RELINQUISHED BY: (Signature) [signature] Date: 11/5/10 Time: 0530

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Robert Galler TT Date: 12/29/10 Time: 15:30

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

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

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RECEIVING LABORATORY: Trace

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: Mandy PHONE:

RECEIVED BY: (Signature) [signature]

DATE: 11-5-10 TIME: 9:30

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.0°C intact

REMARKS: If TPH exceeds 100 mg/kg run deeper depths.

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

Run (3) BTEX ~~#~~ on highest TPH.

NO # 11010504

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:	SITE MANAGER:
COG	Ike Tavarez

PROJECT NO.:	PROJECT NAME:
114-6406743	COG / JC Horn Eddy Co, NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. (Ext. to C35) TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
254674	12/29		S		X	AH-5 0-1 1'BER	1				X			X											X				
675	12/29		S		X	AH-6 0-1 1'BER	1				X			X											X				

RELINQUISHED BY: (Signature)	Date: 12/5/10 Time: 0530	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) Robert Gabbs, Jr. Date: 12/29/10 Time: 1440

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

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: Plano PHONE:
RECEIVED BY: (Signature)
DATE: 11-5-10 TIME: 9:30

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.0°C intact

REMARKS:

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