SITE INFORMATION

Report Type: Assessment and Closure Report

RECEIVED
FEB 17 2010
NMOCD ARTESIA

General Site Information:	
Site:	Antelope 36 State 1 Tank Battery
Company:	COG Operating LLC
Section, Township and Range	Section 21 T17S R 31E Unit L
Lease Number:	API-30-015-32040
County:	Eddy County
GPS:	32.78811° N, 103.82625° W
Surface Owner:	State
Mineral Owner:	
Directions:	From intersection 82 and 529, go south on 529 3.8 miles, turn right go 0.1 miles, turn right go 0,7 miles, at Y stay to the right, go 0.6 miles and turn right into tank battery pad.

Release Data:	
Date Released:	9/7/2009
Type Release:	Produced water
Source of Contamination:	Water tank
Fluid Released:	20 bbls
Fluids Recovered:	5 bbls

Official Communication:			
Name:	Pat Ellis		Kim Dorey
Company:	COG Operating, LLC		Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300		1910 N. Big Spring
P.O. Box			
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		kim.dorey@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	0	**greater than 300'**
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 4, 2010

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
1301 West Grand Avenue
Artesia, NM 88210

Re: Closure Report for the COG Operating LLC., Antelope 36 State 1 Tank Battery, Unit K, Section 36, Township 17 South, Range 31 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill at the Antelope 36 State 1 Tank Battery, Unit K, Section 36, Township 17 South, Range 31 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.78811°, W 103.82625°. 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 September 7, 2009. Approximately twenty (20) barrels of produced water was released from a water tank as a result of an electrical failure. Vacuum trucks were utilized to recover five (5) barrels of standing fluids. The initial C-141 is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 21. According to the *Geology and Groundwater Resources of Eddy County, New Mexico* (Report 3), one well is located in Section 34, with reported depth to water of 271' below surface.

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

According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 300' below surface. The Geology and Groundwater Resources 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 Results

On November 29, 2009, Tetra Tech personnel inspected and sampled the spill area, which measured approximately 40' x 50'. The spill remained on the southeast corner of the tank battery pad. Prior to sampling, COG had performed a surficial scrape. A total of four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all the submitted samples were below RRAL for TPH and BTEX. Elevated chloride concentrations were detected at AH-1 (0-1') of 3,610 mg/kg, AH-2 (0-1' thru 6-6.5') decreasing from 2,660 to 1,850 mg/kg, and AH-4 (0-1') of 1,810 mg/kg.

Remediation Work Performed

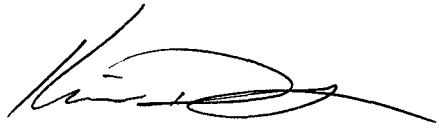
On December 10, 2009, Tetra Tech personnel were onsite to supervise the excavation of impacted material. The areas around AH-1 and AH-4 were excavated approximately 1.0' bgs and the area around AH-2 was excavated to a

TETRA TECH

depth of approximately 12' bgs. A confirmation sample (T-1) was taken at 12' and showed chloride concentrations <200 mg/kg. Approximately 80 cubic yards were removed and hauled to Controlled Recovery, Inc. of Hobbs, New Mexico. The site was then backfilled and brought up to surface grade with clean soil.

Based upon the investigation and remediation performed at this site, COG respectfully requests closure of this site. The final C-141 is enclosed in Appendix A. If you require any additional information or have any questions or comments concerning this work plan report, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH, INC.



Kim Dorey
Staff Geologist

cc: Pat Ellis – COG

FIGURES

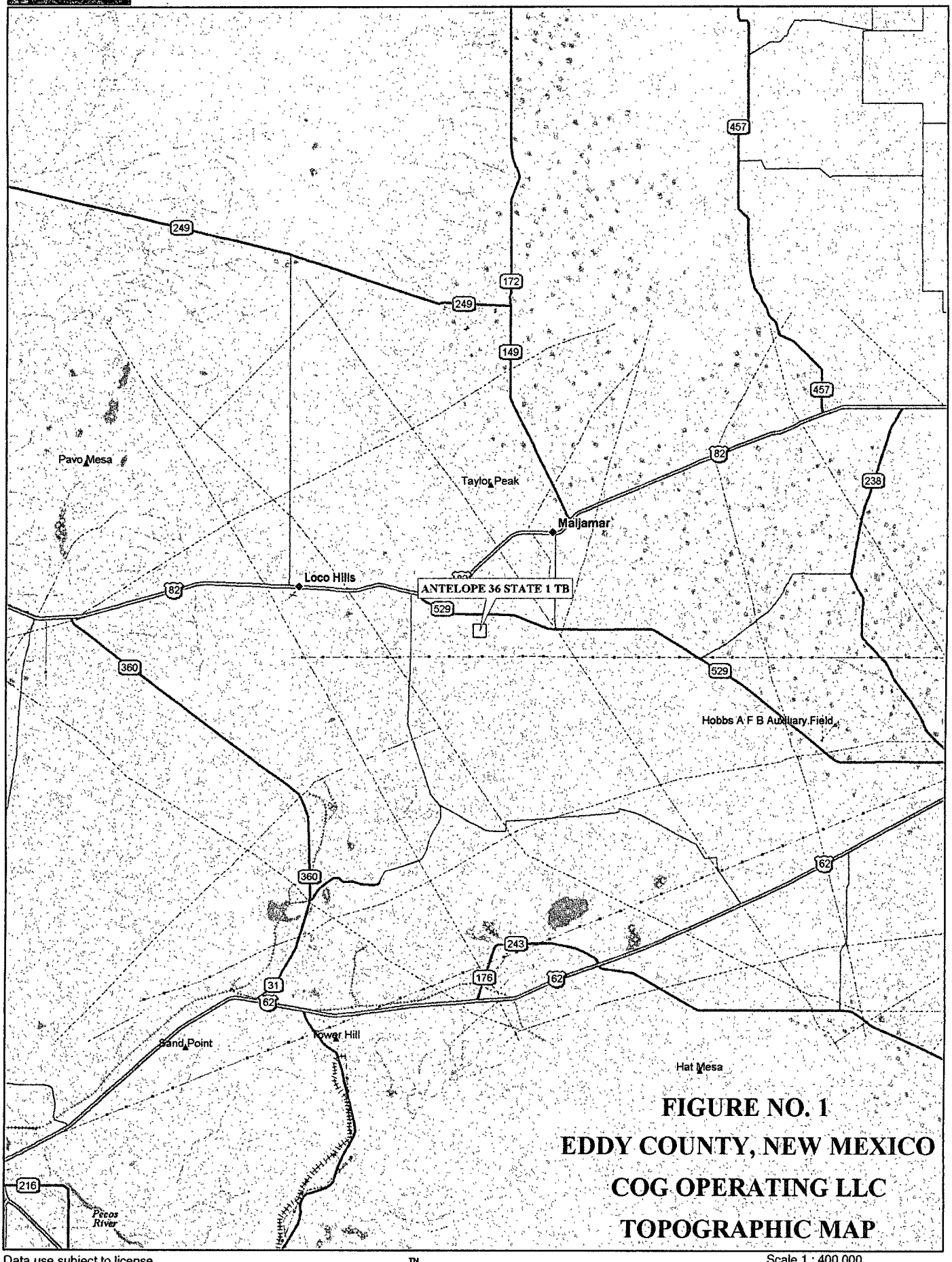


FIGURE NO. 1
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

TN

MN (7.9°E)

Scale 1 : 400,000

1" = 6.31 mi

Data Zoom 9-0

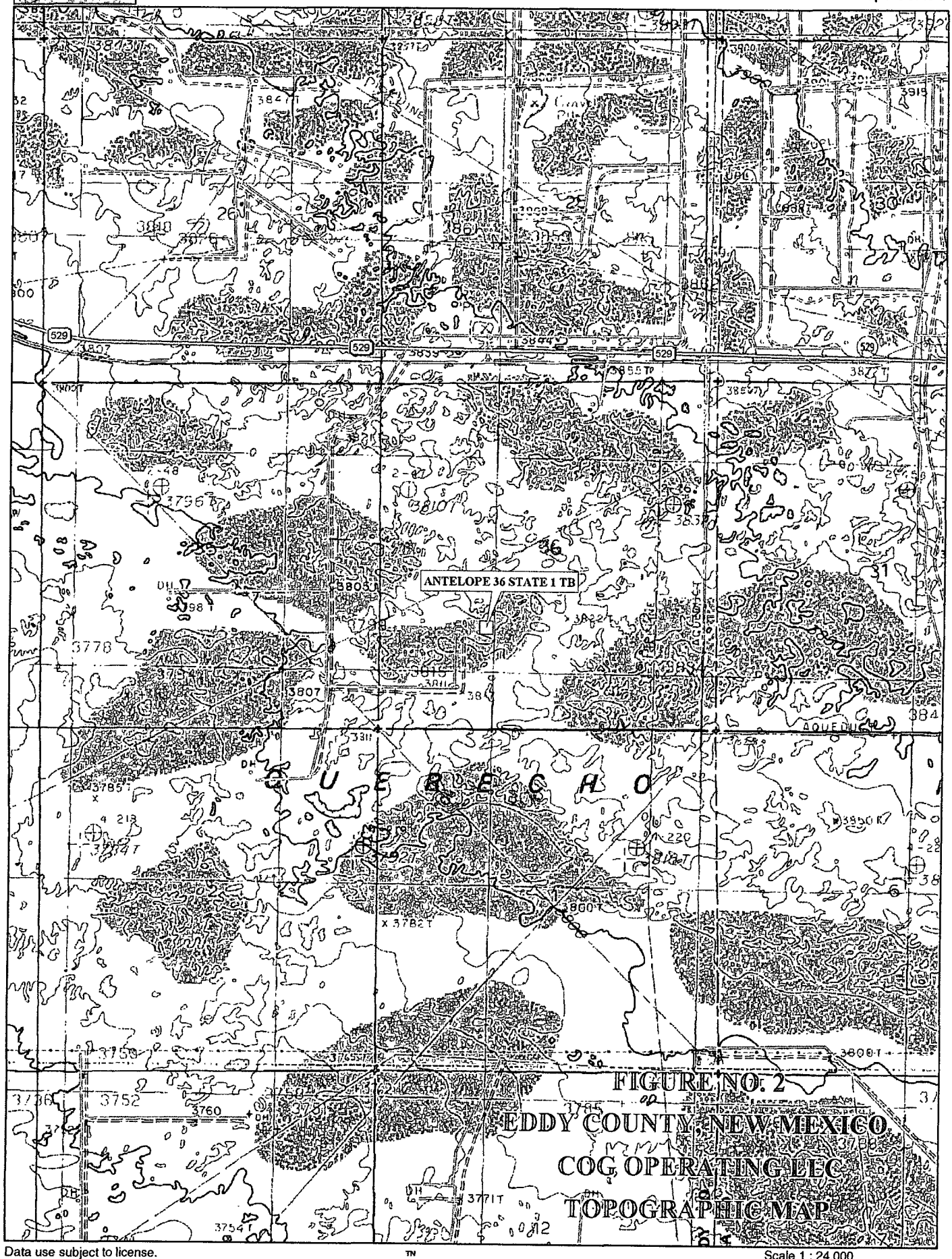


FIGURE NO. 2

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

TN

MN (7.9°E)

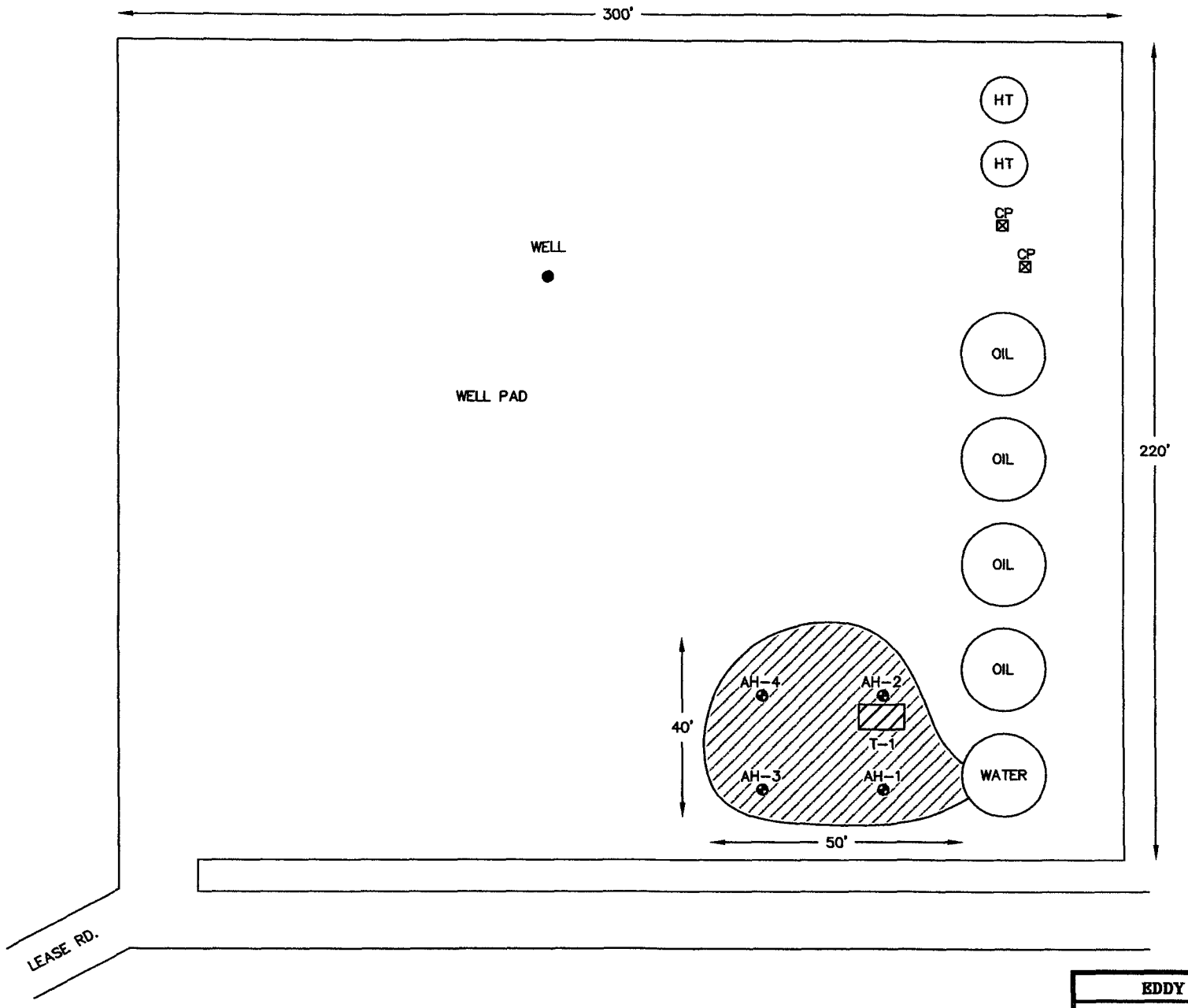
Scale 1 : 24,000

0 600 1200 1800 2400 3000 ft

0 200 400 600 800 1000 m

1" = 2,000.0 ft

Data Zoom 13-0



SPILL AREA
SAMPLE TRENCH & EXCAVATION
SAMPLE LOCATIONS

NOT TO SCALE

FIGURE NO. 3

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

ANTELOPE 36 STATE 1 TB

DATE: 10/30/09
DWN. BY: JJ
FILE: M:\COG\64400326 ANTELOPE 36 STATE 1

TETRA TECH, INC.
MIDLAND, TEXAS

TABLES

Table 1
COG Operating LLC
Antelope 36 State 1 Tank Battery
Eddy County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total						
AH-1	10/29/2009	0-1'		X	<50.0	<1.00	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	3610
	10/29/2009	1-1 5'	X		-	-	-	-	-	-	-	-	<200
	10/29/2009	2-2.5'	X		-	-	-	-	-	-	-	-	<200
AH-2	10/29/2009	0-1'		X	<50.0	<1.00	<50.0	<0.0100	<0 0100	<0.0100	<0.0100	<0.0100	2660
	10/29/2009	1-1 5'		X	-	-	-	-	-	-	-	-	515
	10/29/2009	2-2 5'		X	-	-	-	-	-	-	-	-	881
	10/29/2009	3-3.5'		X	-	-	-	-	-	-	-	-	1040
	10/29/2009	4-4.5'		X	-	-	-	-	-	-	-	-	754
	10/29/2009	5-5.5'		X	-	-	-	-	-	-	-	-	867
	10/29/2009	6-6 5'		X	-	-	-	-	-	-	-	-	1850
	12/10/2009	12'		X	-	-	-	-	-	-	-	-	<200
T-1	12/10/2009	12' Bottom Hole		X	-	-	-	-	-	-	-	-	<200
AH-3	10/29/2009	0-1'	X		<50 0	<1 00	<50 0	<0 0100	<0 0100	<0 0100	<0 0100	<0 0100	<200
	10/29/2009	1-1.5'	X		-	-	-	-	-	-	-	-	<200
	10/29/2009	2-2 5'	X		-	-	-	-	-	-	-	-	<200
AH-4	10/29/2009	0-1'		X	<50.0	<1.00	<50 0	<0.0100	<0.0100	<0 0100	<0.0100	<0.0100	1810
	10/29/2009	1-1 5'	X		-	-	-	-	-	-	-	-	<200
	10/29/2009	2-2 5'	X		-	-	-	-	-	-	-	-	<200

(-) not analyzed

Excavated Areas

APPENDIX A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

iSEB1009182819
nSEB1009130308 SEB1009132905

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **COG Operating LLC** 229137	Contact **Pat Ellis**
Address **550 W. Texas, Suite 1300 Midland, Texas 79701**	Telephone No. **(432) 685-4332**
Facility Name **Antelope 36 State #1**	Facility Type **Tank Battery**

Surface Owner State	Mineral Owner	Lease No. 30-015-32040

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	36	17S	31E	1650	South	1650	West	Eddy

Latitude N 32.818480° **Longitude** W 103.873063°

NATURE OF RELEASE

Type of Release **Produced water**	Volume of Release **20 bbls**	Volume Recovered **5 bbls**
Source of Release **Water Tank**	Date and Hour of Occurrence **09/07/09 AM**	Date and Hour of Discovery **09/07/09 AM**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? /	
By Whom? **Pat Ellis**	Date and Hour **10/08/09**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse N/A	

If a Watercourse was Impacted, Describe Fully *

N/A

Describe Cause of Problem and Remedial Action Taken.*

Electrical failure

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech inspected site and collected samples to define spills extent Soil that exceeded RRAL was removed and hauled away to Controlled Recovery, Inc., Hobbs, NM. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez	Approved by District Supervisor	
Title. Project Manager	Approval Date: 3/3/10	Expiration Date: N/A
E-mail Address: ike tavarez@tetratech.com	Conditions of Approval: N/A	Attached ☐ N/A
Date. Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

2RP-375

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report Final Report

Name of Company COG OPERATING LLC	Contact Kanicia Carrillo
Address 550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No. 432-685-4332
Facility Name – Antelope 36 State #1	Facility Type- Battery

Surface Owner State	Mineral Owner	Lease No. 30-015-32040

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	36	17S	31E	1650	South	1650	West	Eddy

Latitude **Longitude**

NATURE OF RELEASE

Type of Release-Produced Water	Volume of Release-20bbls	Volume Recovered- 5bbls
Source of Release- Water tank	Date and Hour of Occurrence- 9/07/09 am	Date and Hour of Discovery 09/07/09 am
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom? Pat Ellis	Date and Hour 10/08/09	
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 *
Electrical failure

Describe Area Affected and Cleanup Action Taken *
All water remained on location. Vacuum truck picked up water and the wet soil was dug up and properly disposed of.

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: Kanicia Carrillo	Approved by District Supervisor:	
Title: Regulatory Analyst	Approval Date: 3/30/10	Expiration Date.
E-mail Address: kcarrillo@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 10/16/09 Phone: 432-685-4332		2RP-395

* Attach Additional Sheets If Necessary

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
COG - Antelope 36 State #1 Tank Battery
Eddy County, New Mexico

16 South 30 East

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

16 South 31 East

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

16 South 32 East

6	5	4	3 **65**	2 **265**	1 **265**
7	8	9	10	11	12 **215**
18	17	16 **221**	15	14	13 **215**
19 **220**	20	21 **210**	22	23 **210**	24
30	29	28	27	26 **243**	25
31	32	33	34	35	36 **260**

17 South 30 East

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

17 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34 **271**	35	36 SITE

17 South 32 East

6	5	4 **82**	3 **175**	2 **60**	1 **225**
7	8	9	10	11 **70** **88**	12
18	17	16	15	14	13
19	20	21	22	23	24
30 **180** dry	29	28	27	26	25
31	32	33	34	35	36

18 South 30 East

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

18 South 31 East

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

18 South 32 East

6	5	4 **65**	3 Prong #2	2	1
7 **460** **82**	8	9	10	11	12
18	17	16 **84**	15	14	13
19	20 **164**	21	22 **429**	23	24
30	29	28	27	26	25
31	32	33	34 **117**	35	36

88 New Mexico State Engineers Well Reports
105 USGS Well Reports
90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
Geology and Groundwater Resources of Eddy County, NM (Report 3)
34 NMOCD - Groundwater Data
123 Field water level
180 Tetra Tech drilled TMW - Total depth 180' - Dry well

NM WAIDS

DATA MAPS HOME SCALE CORROSION

General Information About: Sample 2392			
Section/ Township/Range	34 / 17 S / 31 E	Lat/Long	32.7908 / -103.8566
Elevation	3799	Depth	362
Date Collected	12/6/1948	Chlorides	54
Collector / Point of Collection	USG / DP	Use	Stock
Formation	SANTA ROSA	TDS	0

New Mexico Tech PRRC

APPENDIX C

Summary Report

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

Report Date: November 5, 2009

Work Order: 9110209

Project Location: Eddy Co., NM
Project Name: COG/Antelope 36 State 1 TB
Project Number: 114-640326

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
213629	AH-1 0-1	soil	2009-10-29	00:00	2009-10-30
213630	AH-1 1-1 5	soil	2009-10-29	00:00	2009-10-30
213631	AH-1 2-2.5	soil	2009-10-29	00:00	2009-10-30
213632	AH-2 0-1	soil	2009-10-29	00:00	2009-10-30
213633	AH-2 1-1.5	soil	2009-10-29	00:00	2009-10-30
213634	AH-2 2-2.5	soil	2009-10-29	00:00	2009-10-30
213635	AH-2 3-3.5	soil	2009-10-29	00:00	2009-10-30
213636	AH-2 4-4.5	soil	2009-10-29	00:00	2009-10-30
213637	AH-2 5-5.5	soil	2009-10-29	00:00	2009-10-30
213638	AH-2 6-6.5	soil	2009-10-29	00:00	2009-10-30
213639	AH-3 0-1	soil	2009-10-29	00:00	2009-10-30
213640	AH-3 1-1.5	soil	2009-10-29	00:00	2009-10-30
213641	AH-3 2-2.5	soil	2009-10-29	00:00	2009-10-30
213642	AH-4 0-1	soil	2009-10-29	00:00	2009-10-30
213643	AH-4 1-1.5	soil	2009-10-29	00:00	2009-10-30
213644	AH-4 2-2.5	soil	2009-10-29	00:00	2009-10-30

	BTEX				TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	GRO (mg/Kg)
213629 - AH-1 0-1	<0 0100	<0.0100	<0 0100	<0.0100	<1 00
213632 - AH-2 0-1	<0.0100	<0 0100	<0.0100	<0.0100	<1 00
213639 - AH-3 0-1	<0 0100	<0 0100	<0.0100	<0.0100	<1.00
213642 - AH-4 0-1	<0.0100	<0.0100	<0 0100	<0.0100	<1 00

Sample: 213629 - AH-1 0-1

continued ...

sample 213629 continued ...

Param	Flag	Result	Units	RL

Param	Flag	Result	Units	RL
Chloride		**3610**	mg/Kg	4.00
DRO		<50.0	mg/Kg	50.0

Sample: 213630 - AH-1 1-1.5

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

Sample: 213631 - AH-1 2-2.5

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

Sample: 213632 - AH-2 0-1

Param	Flag	Result	Units	RL
Chloride		**2660**	mg/Kg	4.00
DRO		<50.0	mg/Kg	50.0

Sample: 213633 - AH-2 1-1.5

Param	Flag	Result	Units	RL
Chloride		**515**	mg/Kg	4.00

Sample: 213634 - AH-2 2-2.5

Param	Flag	Result	Units	RL
Chloride		**881**	mg/Kg	4.00

Sample: 213635 - AH-2 3-3.5

Param	Flag	Result	Units	RL
Chloride		**1040**	mg/Kg	4.00

Sample: 213636 - AH-2 4-4.5

Param	Flag	Result	Units	RL
Chloride		**754**	mg/Kg	4.00

Sample: 213637 - AH-2 5-5.5

Param	Flag	Result	Units	RL
Chloride		**867**	mg/Kg	4.00

Sample: 213638 - AH-2 6-6.5

Param	Flag	Result	Units	RL
Chloride		**1850**	mg/Kg	4.00

Sample: 213639 - AH-3 0-1

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
DRO		<50.0	mg/Kg	50.0

Sample: 213640 - AH-3 1-1.5

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

Sample: 213641 - AH-3 2-2.5

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

Sample: 213642 - AH-4 0-1

Param	Flag	Result	Units	RL
Chloride		**1810**	mg/Kg	4.00
DRO		<50.0	mg/Kg	50.0

Sample: 213643 - AH-4 1-1.5

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

Sample: 213644 - AH-4 2-2.5

Param	Flag	Result	Units	RL
Chloride		<200	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: November 5, 2009

Work Order: 9110209

Project Location: Eddy Co., NM
Project Name: COG/Antelope 36 State 1 TB
Project Number: 114-640326

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
213629	AH-1 0-1	soil	2009-10-29	00:00	2009-10-30
213630	AH-1 1-1.5	soil	2009-10-29	00:00	2009-10-30
213631	AH-1 2-2.5	soil	2009-10-29	00:00	2009-10-30
213632	AH-2 0-1	soil	2009-10-29	00:00	2009-10-30
213633	AH-2 1-1.5	soil	2009-10-29	00:00	2009-10-30
213634	AH-2 2-2.5	soil	2009-10-29	00:00	2009-10-30
213635	AH-2 3-3.5	soil	2009-10-29	00:00	2009-10-30
213636	AH-2 4-4.5	soil	2009-10-29	00:00	2009-10-30
213637	AH-2 5-5.5	soil	2009-10-29	00:00	2009-10-30
213638	AH-2 6-6.5	soil	2009-10-29	00:00	2009-10-30

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
213639	AH-3 0-1	soil	2009-10-29	00:00	2009-10-30
213640	AH-3 1-1.5	soil	2009-10-29	00:00	2009-10-30
213641	AH-3 2-2.5	soil	2009-10-29	00:00	2009-10-30
213642	AH-4 0-1	soil	2009-10-29	00:00	2009-10-30
213643	AH-4 1-1.5	soil	2009-10-29	00:00	2009-10-30
213644	AH-4 2-2.5	soil	2009-10-29	00:00	2009-10-30

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

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/Antelope 36 State 1 TB were received by TraceAnalysis, Inc. on 2009-10-30 and assigned to work order 9110209. Samples for work order 9110209 were received intact at a temperature of 3.6 deg. 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	55554	2009-11-04 at 14:15	65026	2009-11-04 at 13:26
Chloride (Titration)	SM 4500-Cl B	55491	2009-11-03 at 12:15	64984	2009-11-04 at 11:00
Chloride (Titration)	SM 4500-Cl B	55492	2009-11-03 at 12:15	64985	2009-11-04 at 11:01
TPH DRO - NEW	Mod. 8015B	55515	2009-11-03 at 13:26	64968	2009-11-03 at 13:26
TPH GRO	S 8015B	55554	2009-11-04 at 14:15	65028	2009-11-04 at 13:53

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 9110209 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: 213629 - AH-1 0-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	65026	Date Analyzed:	2009-11-04	Analyzed By:	AG
Prep Batch:	55554	Sample Preparation:	2009-11-04	Prepared By.	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.00	mg/Kg	1	2.00	100	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.68	mg/Kg	1	2.00	84	45.2 - 144.3

Sample: 213629 - AH-1 0-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64984	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55491	Sample Preparation:	2009-11-03	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**3610**		mg/Kg	100	4.00

Sample: 213629 - AH-1 0-1

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	64968	Date Analyzed:	2009-11-03	Analyzed By:	kg
Prep Batch:	55515	Sample Preparation:	2009-11-03	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		115	mg/Kg	1	100	115	48.5 - 146

Sample: 213629 - AH-1 0-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	65028	Date Analyzed:	2009-11-04	Analyzed By:	AG
Prep Batch:	55554	Sample Preparation:	2009-11-04	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.99	mg/Kg	1	2.00	100	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.62	mg/Kg	1	2.00	81	31 - 135

Sample: 213630 - AH-1 1-1.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64984	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55491	Sample Preparation:	2009-11-03	Prepared By:	AR

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

Sample: 213631 - AH-1 2-2.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64984	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55491	Sample Preparation:	2009-11-03	Prepared By:	AR

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

Sample: 213632 - AH-2 0-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	65026	Date Analyzed:	2009-11-04	Analyzed By:	AG
Prep Batch:	55554	Sample Preparation:	2009-11-04	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.99	mg/Kg	1	2.00	100	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.70	mg/Kg	1	2.00	85	45.2 - 144.3

Sample: 213632 - AH-2 0-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64984	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55491	Sample Preparation:	2009-11-03	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2660**	mg/Kg	100	4.00

Sample: 213632 - AH-2 0-1

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method.	Mod. 8015B	Prep Method:	N/A
QC Batch:	64968	Date Analyzed:	2009-11-03	Analyzed By:	kg
Prep Batch:	55515	Sample Preparation:	2009-11-03	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		116	mg/Kg	1	100	116	48.5 - 146

Sample: 213632 - AH-2 0-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	65028	Date Analyzed:	2009-11-04	Analyzed By:	AG
Prep Batch:	55554	Sample Preparation:	2009-11-04	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.00	mg/Kg	1	2.00	100	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.62	mg/Kg	1	2.00	81	31 - 135

Sample: 213633 - AH-2 1-1.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64984	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55491	Sample Preparation:	2009-11-03	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**515**		mg/Kg	50	4.00

Sample: 213634 - AH-2 2-2.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64984	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55491	Sample Preparation:	2009-11-03	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**881**		mg/Kg	50	4.00

Sample: 213635 - AH-2 3-3.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64984	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55491	Sample Preparation:	2009-11-03	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1040**	mg/Kg	50	4.00

Sample: 213636 - AH-2 4-4.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64984	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55491	Sample Preparation:	2009-11-03	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**754**	mg/Kg	50	4.00

Sample: 213637 - AH-2 5-5.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64985	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55492	Sample Preparation:	2009-11-03	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**867**	mg/Kg	50	4.00

Sample: 213638 - AH-2 6-6.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64985	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55492	Sample Preparation:	2009-11-03	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1850**	mg/Kg	50	4.00

Sample: 213639 - AH-3 0-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	65026	Date Analyzed:	2009-11-04	Analyzed By:	AG
Prep Batch:	55554	Sample Preparation:	2009-11-04	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.99	mg/Kg	1	2.00	100	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.65	mg/Kg	1	2.00	82	45.2 - 144.3

Sample: 213639 - AH-3 0-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64985	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55492	Sample Preparation:	2009-11-03	Prepared By:	AR

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

Sample: 213639 - AH-3 0-1

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	64968	Date Analyzed:	2009-11-03	Analyzed By:	kg
Prep Batch:	55515	Sample Preparation:	2009-11-03	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		117	mg/Kg	1	100	117	48.5 - 146

Sample: 213639 - AH-3 0-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	65028	Date Analyzed:	2009-11-04	Analyzed By:	AG
Prep Batch:	55554	Sample Preparation:	2009-11-04	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.99	mg/Kg	1	2.00	100	68 5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.58	mg/Kg	1	2.00	79	31 - 135

Sample: 213640 - AH-3 1-1.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64985	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55492	Sample Preparation:	2009-11-03	Prepared By:	AR

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

Sample: 213641 - AH-3 2-2.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64985	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55492	Sample Preparation:	2009-11-03	Prepared By:	AR

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

Sample: 213642 - AH-4 0-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	65026	Date Analyzed.	2009-11-04	Analyzed By:	AG
Prep Batch:	55554	Sample Preparation:	2009-11-04	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.98	mg/Kg	1	2.00	99	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.63	mg/Kg	1	2.00	82	45.2 - 144.3

Sample: 213642 - AH-4 0-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64985	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55492	Sample Preparation:	2009-11-03	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1810**	mg/Kg	50	4.00

Sample: 213642 - AH-4 0-1

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	64968	Date Analyzed:	2009-11-03	Analyzed By:	kg
Prep Batch:	55515	Sample Preparation:	2009-11-03	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		114	mg/Kg	1	100	114	48.5 - 146

Sample: 213642 - AH-4 0-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	65028	Date Analyzed:	2009-11-04	Analyzed By:	AG
Prep Batch:	55554	Sample Preparation:	2009-11-04	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.01	mg/Kg	1	2.00	100	68 5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.58	mg/Kg	1	2.00	79	31 - 135

Sample: 213643 - AH-4 1-1.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64985	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55492	Sample Preparation:	2009-11-03	Prepared By:	AR

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

Sample: 213644 - AH-4 2-2.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64985	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55492	Sample Preparation:	2009-11-03	Prepared By:	AR

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

Method Blank (1) QC Batch: 64968

QC Batch:	64968	Date Analyzed:	2009-11-03	Analyzed By:	kg
Prep Batch:	55515	QC Preparation:	2009-11-03	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		102	mg/Kg	1	100	102	48.5 - 146

Method Blank (1) QC Batch: 64984

QC Batch: 64984 | Date Analyzed: 2009-11-04 | Analyzed By: AR
Prep Batch: 55491 | QC Preparation: 2009-11-03 | Prepared By: AR

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

Method Blank (1) QC Batch: 64985

QC Batch: 64985 | Date Analyzed: 2009-11-04 | Analyzed By: AR
Prep Batch: 55492 | QC Preparation: 2009-11-03 | Prepared By: AR

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

Method Blank (1) QC Batch: 65026

QC Batch: 65026 | Date Analyzed: 2009-11-04 | Analyzed By: AG
Prep Batch: 55554 | QC Preparation: 2009-11-04 | Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00100	mg/Kg	0.01
Toluene		<0.00100	mg/Kg	0.01
Ethylbenzene		<0.00110	mg/Kg	0.01
Xylene		<0.00360	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.97	mg/Kg	1	2.00	98	65.6 - 130.6
4-Bromofluorobenzene (4-BFB)		1.78	mg/Kg	1	2.00	89	51.9 - 128.1

Method Blank (1) QC Batch: 65028

QC Batch: 65028 | Date Analyzed: 2009-11-04 | Analyzed By: AG
Prep Batch: 55554 | QC Preparation: 2009-11-04 | Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.01	mg/Kg	1	2.00	100	71.9 - 115
4-Bromofluorobenzene (4-BFB)		1.72	mg/Kg	1	2.00	86	38.1 - 146.2

Laboratory Control Spike (LCS-1)

QC Batch: 64968 | Date Analyzed: 2009-11-03 | Analyzed By: kg
Prep Batch: 55515 | QC Preparation: 2009-11-03 | Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	217	mg/Kg	1	250	<5.86	87	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	219	mg/Kg	1	250	<5.86	88	57.4 - 133.4	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	96.0	101	mg/Kg	1	100	96	101	48.5 - 146

Laboratory Control Spike (LCS-1)

QC Batch: 64984 | Date Analyzed: 2009-11-04 | Analyzed By: AR
Prep Batch: 55491 | QC Preparation: 2009-11-03 | Prepared By: AR

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

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

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

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

Laboratory Control Spike (LCS-1)

QC Batch: 64985 | Date Analyzed: 2009-11-04 | Analyzed By: AR
Prep Batch: 55492 | QC Preparation: 2009-11-03 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.7	mg/Kg	1	100	<2.18	100	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 65026 | Date Analyzed: 2009-11-04 | Analyzed By: AG
Prep Batch: 55554 | QC Preparation: 2009-11-04 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.92	mg/Kg	1	2.00	<0.00100	96	72.7 - 129.8
Toluene	1.94	mg/Kg	1	2.00	<0.00100	97	71.6 - 129.6
Ethylbenzene	1.94	mg/Kg	1	2.00	<0.00110	97	70.8 - 129.7
Xylene	5.81	mg/Kg	1	6.00	<0.00360	97	70 9 - 129.4

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
Benzene	1.96	mg/Kg	1	2.00	<0.00100	98	72.7 - 129.8	2	20
Toluene	1.98	mg/Kg	1	2.00	<0.00100	99	71.6 - 129.6	2	20
Ethylbenzene	1.99	mg/Kg	1	2.00	<0.00110	100	70.8 - 129.7	2	20
Xylene	5.96	mg/Kg	1	6.00	<0.00360	99	70.9 - 129.4	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.97	1.98	mg/Kg	1	2.00	98	99	65.9 - 132
4-Bromofluorobenzene (4-BFB)	1.81	1.81	mg/Kg	1	2.00	90	90	55.2 - 158.9

Laboratory Control Spike (LCS-1)

QC Batch: 65028 | Date Analyzed: 2009-11-04 | Analyzed By: AG
Prep Batch: 55554 | QC Preparation: 2009-11-04 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.7	mg/Kg	1	20.0	<0.482	78	60.5 - 120.1

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
GRO	16.5	mg/Kg	1	20.0	<0.482	82	60.5 - 120.1	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)	2.02	2.10	mg/Kg	1	2.00	101	105	78.8 - 124.7
4-Bromofluorobenzene (4-BFB)	1.77	1.79	mg/Kg	1	2.00	88	90	66.1 - 128.3

Matrix Spike (MS-1) Spiked Sample: 213722

QC Batch: 64968 | Date Analyzed: 2009-11-03 | Analyzed By: kg
Prep Batch: 55515 | QC Preparation: 2009-11-03 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	137	mg/Kg	1	250	<5.86	55	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	122	mg/Kg	1	250	<5.86	49	35.2 - 167.1	12	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	116	90.8	mg/Kg	1	100	116	91	48.5 - 146

Matrix Spike (MS-1) Spiked Sample: 213636

QC Batch: 64984 | Date Analyzed: 2009-11-04 | Analyzed By: AR
Prep Batch: 55491 | QC Preparation: 2009-11-03 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10600	mg/Kg	100	10000	754	98	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10900	mg/Kg	100	10000	754	101	85 - 115	3	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: 213654

QC Batch: 64985 | Date Analyzed: 2009-11-04 | Analyzed By: AR
Prep Batch: 55492 | QC Preparation: 2009-11-03 | Prepared By: AR

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

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

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

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

Matrix Spike (MS-1) Spiked Sample: 213642

QC Batch: 65026 | Date Analyzed: 2009-11-04 | Analyzed By: AG
Prep Batch: 55554 | QC Preparation: 2009-11-04 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.96	mg/Kg	1	2.00	<0.00100	98	58.6 - 165.2
Toluene	2.00	mg/Kg	1	2.00	<0.00100	100	64.2 - 153.8
Ethylbenzene	2.03	mg/Kg	1	2.00	<0.00110	102	61.6 - 159.4
Xylene	6.02	mg/Kg	1	6.00	<0.00360	100	64.4 - 155.3

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
Benzene	2.05	mg/Kg	1	2.00	<0.00100	102	58.6 - 165.2	4	20
Toluene	2.09	mg/Kg	1	2.00	<0.00100	104	64.2 - 153.8	4	20
Ethylbenzene	2.12	mg/Kg	1	2.00	<0.00110	106	61.6 - 159.4	4	20
Xylene	6.30	mg/Kg	1	6.00	<0.00360	105	64.4 - 155.3	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.97	1.98	mg/Kg	1	2	98	99	76 - 127.9
4-Bromofluorobenzene (4-BFB)	1.65	1.65	mg/Kg	1	2	82	82	52 - 127.8

Matrix Spike (MS-1) Spiked Sample: 213639

QC Batch: 65028 | Date Analyzed: 2009-11-04 | Analyzed By: AG
Prep Batch: 55554 | QC Preparation: 2009-11-04 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	12.2	mg/Kg	1	20.0	<0.482	61	12.8 - 175.2

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	12.6	mg/Kg	1	20.0	<0.482	63	12.8 - 175.2	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.94	1.94	mg/Kg	1	2	97	97	60.8 - 132.1
4-Bromofluorobenzene (4-BFB)	1.66	1.63	mg/Kg	1	2	83	82	31.3 - 161.7

Standard (CCV-1)

QC Batch: 64968 Date Analyzed: 2009-11-03 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	246	98	80 - 120	2009-11-03

Standard (CCV-2)

QC Batch: 64968 Date Analyzed: 2009-11-03 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	278	111	80 - 120	2009-11-03

Standard (ICV-1)

QC Batch: 64984 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2009-11-04

Standard (CCV-1)

QC Batch: 64984 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.6	98	85 - 115	2009-11-04

Standard (ICV-1)

QC Batch: 64985 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2009-11-04

Standard (CCV-1)

QC Batch: 64985 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.9	100	85 - 115	2009-11-04

Standard (CCV-1)

QC Batch: 65026 Date Analyzed: 2009-11-04 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0973	97	80 - 120	2009-11-04
Toluene		mg/Kg	0.100	0.0985	98	80 - 120	2009-11-04
Ethylbenzene		mg/Kg	0.100	0.0983	98	80 - 120	2009-11-04
Xylene		mg/Kg	0.300	0.294	98	80 - 120	2009-11-04

Standard (CCV-2)

QC Batch: 65026 Date Analyzed: 2009-11-04 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0922	92	80 - 120	2009-11-04
Toluene		mg/Kg	0.100	0.0926	93	80 - 120	2009-11-04
Ethylbenzene		mg/Kg	0.100	0.0914	91	80 - 120	2009-11-04

continued ...

standard continued . .

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Xylene		mg/Kg	0.300	0.273	91	80 - 120	2009-11-04

Standard (CCV-3)

QC Batch: 65026 Date Analyzed: 2009-11-04 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0926	93	80 - 120	2009-11-04
Toluene		mg/Kg	0.100	0.0933	93	80 - 120	2009-11-04
Ethylbenzene		mg/Kg	0.100	0.0916	92	80 - 120	2009-11-04
Xylene		mg/Kg	0.300	0.274	91	80 - 120	2009-11-04

Standard (CCV-1)

QC Batch: 65028 Date Analyzed: 2009-11-04 Analyzed By: AG

Param	Flag	Units	CCVs True Conc	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.04	104	80 - 120	2009-11-04

Standard (CCV-2)

QC Batch: 65028 Date Analyzed: 2009-11-04 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.962	96	80 - 120	2009-11-04

Standard (CCV-3)

QC Batch: 65028 Date Analyzed: 2009-11-04 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.01	101	80 - 120	2009-11-04

Order #: 9110209

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: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114 640326

PROJECT NAME: Antelope 36 State 1 TB
Eddy Co. NM

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2009	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TX1005 (Ext. to C35)	TPH 8015 MOD	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
213629	10/29		S		X	AH-1 0-1	1				X		X	X	X											X				
630						1-1.5																				X				
631						2-2.5																				X				
632						AH-2 0-1							X	X												X				
633						1-1.5																				X				
634						2-2.5																				X				
635						3-3.5																				X				
636						4-4.5																				X				
637						5-5.5																				X				
638	10/29		S		X	AH-2 6-6.5																				X				

RELINQUISHED BY: (Signature)	Date: 10/30/09 Time: 5:00	RECEIVED BY: (Signature)	Date: 10/30/09 Time: 17:00
RELINQUISHED BY (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date Time:	RECEIVED BY: (Signature)	Date: Time

SAMPLED BY: (Print & Initial) KM — Date: 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:
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE: DATE: TIME:
RECEIVED BY: (Signature)

SAMPLE CONDITION WHEN RECEIVED: 3.6°c intact

REMARKS: 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.

Order #: 9110209

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 2

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.: 114640326

PROJECT NAME: Antelope 36 State 1 TB
Eddy Co, NM

LAB I.D. NUMBER	DATE 2009	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
213639	10/29		S		X	AH-3 0-1'	1				X		X	X											X				
640						1-1.5																			X				
641						2-2.5																			X				
642						AH 4 0-1							X	X											X				
643						1-1.5																			X				
644	10/29		S		X	AH 4 2-2.5	1				X														X				

RELINQUISHED BY: (Signature)	Date: 10/30/09 Time: 5:00	RECEIVED BY: (Signature)	Date: 10/30/09 Time: 7:00
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) Date: 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:
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

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: December 16, 2009

Work Order: 9121412

Project Location: Eddy Co., NM
Project Name: COG/Antelope 36 State 1 TB
Project Number: 114-6400326

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
217080	T-1 Bottom Hole 12'	soil	2009-12-10	00:00	2009-12-11

Sample: 217080 - T-1 Bottom Hole 12'

Param	Flag	Result	Units	RL
Chloride		<200	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

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

Report Date: December 16, 2009

Work Order. 9121412

Project Location: Eddy Co., NM
Project Name. COG/Antelope 36 State 1 TB
Project Number: 114-6400326

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
217080	T-1 Bottom Hole 12'	soil	2009-12-10	00:00	2009-12-11

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

Michael Abel

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/Antelope 36 State 1 TB were received by TraceAnalysis, Inc. on 2009-12-11 and assigned to work order 9121412. Samples for work order 9121412 were received intact at a temperature of 4.0 deg. 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	56395	2009-12-15 at 09:05	66031	2009-12-16 at 13:49

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9121412 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: 217080 - T-1 Bottom Hole 12'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method.	N/A
QC Batch	66031	Date Analyzed:	2009-12-16	Analyzed By:	AR
Prep Batch:	56395	Sample Preparation.	2009-12-15	Prepared By.	AR

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

Method Blank (1) QC Batch. 66031

QC Batch:	66031	Date Analyzed:	2009-12-16	Analyzed By:	AR
Prep Batch:	56395	QC Preparation:	2009-12-15	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2 18	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch:	66031	Date Analyzed:	2009-12-16	Analyzed By:	AR
Prep Batch:	56395	QC Preparation:	2009-12-15	Prepared By.	AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	103	mg/Kg	1	100	<2.18	103	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99 9	mg/Kg	1	100	<2.18	100	85 - 115	3	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: 217105

QC Batch:	66031	Date Analyzed:	2009-12-16	Analyzed By:	AR
Prep Batch:	56395	QC Preparation:	2009-12-15	Prepared By:	AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec	Rec. Limit
Chloride	5340	mg/Kg	50	5000	703	93	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	5420	mg/Kg	50	5000	703	94	85 - 115	2	20

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

Standard (ICV-1)

QC Batch. 66031 Date Analyzed. 2009-12-16 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	105	105	85 - 115	2009-12-16

Standard (CCV-1)

QC Batch: 66031 Date Analyzed: 2009-12-16 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	95.3	95	85 - 115	2009-12-16

Order #: 9121412

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.: 114-6400326

PROJECT NAME: COG / Antelope 36 TB Eddy Co, NM

LAB I.D. NUMBER	DATE 2009	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
217080	12/10		S		X	T-1 Bottom hole 12'	1				X													X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: 12/11/09 Time: 1645	RECEIVED BY: (Signature)	Date: 12/11/09 Time: 1645
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RECEIVING LABORATORY: Trace		RECEIVED BY: (Signature)	
ADDRESS:			
CITY: Midland STATE: TX ZIP:			
CONTACT: PHONE:		DATE: TIME:	

SAMPLED BY: (Print & Initial) JT — Date: 12/10/09 Time:

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4.0°C intact

REMARKS: 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.