SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	RJ Unit #134					
Company:	COG Operating LLC					
Section, Township and Range	Unit O	Sec. 27	T-17-S	R-29-E		
Lease Number:	API-30-015-34573					
County:	Eddy County					
GPS:	32.80056° N			104.05979° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	Intersection of 529 and CR-217 travel west on 82 4.4 mi, turn left on CR-213 1.5 mi, turn right 0.2 mi, turn left 200' to location on left in right away. (Near Apache Well B440 Federal #6 well pad location)					

Release Data:	
Date Released:	3/5/2012
Type Release:	Produced Fluids
Source of Contamination:	Steel line ruptured
Fluid Released:	2 bbls oil and 8 bbls of produced water
Fluids Recovered:	1 bbls oil and 6 bbls of produced water

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

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

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

TETRA TECH

October 22, 2012

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., RJ Unit #134 Flowline, Unit O, Section 27, Township 17 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 RJ Unit #134 Flowline, Unit O, Section 27, Township 17 South, Range 29 East, Eddy County, New Mexico. (Site). The spill site coordinates are N 32.80056°, W 104.05979°. The site location is shown on Figures 1 and 2.

Background

According to the C-141 Initial Report, the leak was discovered on March 5, 2012, and released approximately eight (8) barrels of produced water and two (2) barrels of oil from a steel flowline that ruptured due to corrosion. COG repaired the line and returned it to service. COG recovered approximately six (6) barrels of produced water and one (1) barrel of oil. The spill initiated from the flowline located in the pasture impacting an area of approximately 10' x 70'. The spill is located on a COG right-of-way between flowlines and a COG water disposal line. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 27. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 150' below surface. The groundwater data is shown in Appendix B.

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

Regulatory

A risk-based evaluation was performed for the Site in accordance with the 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, ethyl-benzene 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, ethyl-benzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

On March 28, 2011, Tetra Tech personnel inspected and sampled the spill area. One (1) auger hole (AH-1) was installed in the center of the spill area using a stainless steel hand auger to assess the impacted soils. Samples were collected to a depth of 9-9.5' below surface. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory reports and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole location is shown on Figure 3.

Referring to Table 1, all of the samples were below the RRAL for BTEX and TPH. A chloride concentration of 2,240 mg/kg (0-1') was detected in the shallow soil, which declined to <200 mg/kg at 1-1.5' down to 7.0' below surface. The bottom hole sample at 9-9.5' spiked to 6,400 mg/kg and was not vertically defined.

On April 20, 2012, Tetra Tech supervised the installation of one borehole (BH-1) using an air rotary drilling rig to assess the soils. The borehole was installed to a total depth of 60.0' below surface. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The borehole results are summarized in Table 1.

Referring to Table 1, elevated chloride concentrations were detected from 4.0' to 20.0' below surface, with concentrations ranging from 2,160 mg/kg to 9,010 mg/kg. The deeper samples from 24-25' significantly declined with depth.

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Remediation and Conclusion

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. The excavated area and depths are highlighted in Table 1. Due to safety concerns, deeper excavation could not be achieved at the site as proposed. Active lines near the excavation and geology (sandy soil) hinder the deeper excavation in the area. Approximately 300 cubic yards of soil were excavated and transported to the R360 facility for proper disposal.

The excavated area measured approximately 7' x 70' at a depth of approximately 10' below surface. As requested by the BLM, Tetra Tech collected confirmation samples for the bottom hole and side wall samples for chloride evaluation. The sampling results are shown in Table 1.

Referring to Table 1, all of the sidewall samples showed chloride concentrations ranging from <20.0 mg/kg to 238 mg/kg. The bottom hole sample exhibited a chloride of 6,020 mg/kg. Once approved for backfilling, the excavated area was then capped with a 40 mil liner at 4.0' excavation bottom. The excavation was then backfilled to grade with clean material, and installed a windrow to prevent erosion.

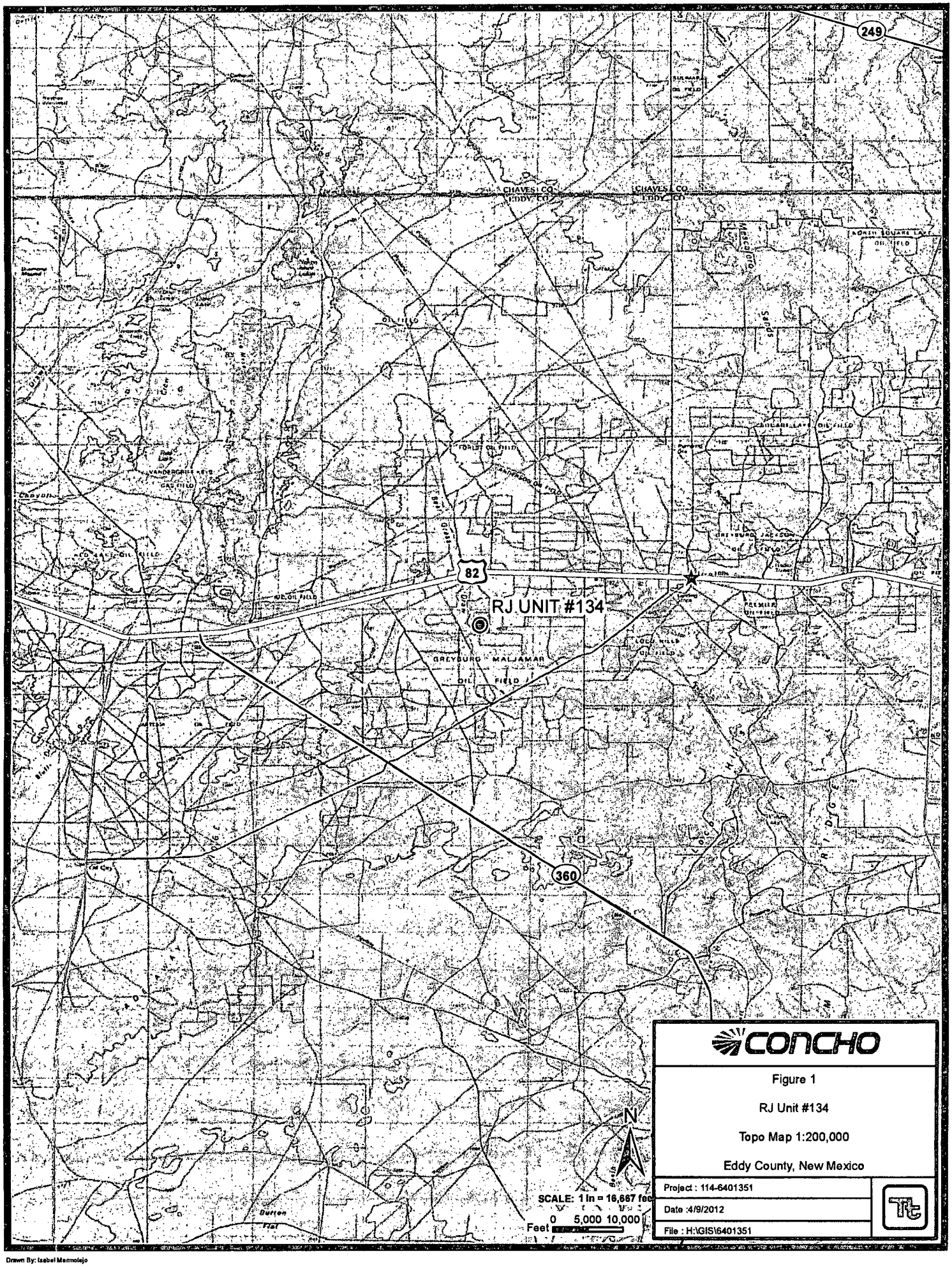
Based on the remedial activities performed, COG request closure of the site. A copy of the C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Senior Project Manager

cc: Pat Ellis – COG
Terry Gregston - BLM

FIGURES



CONCHO

Figure 1

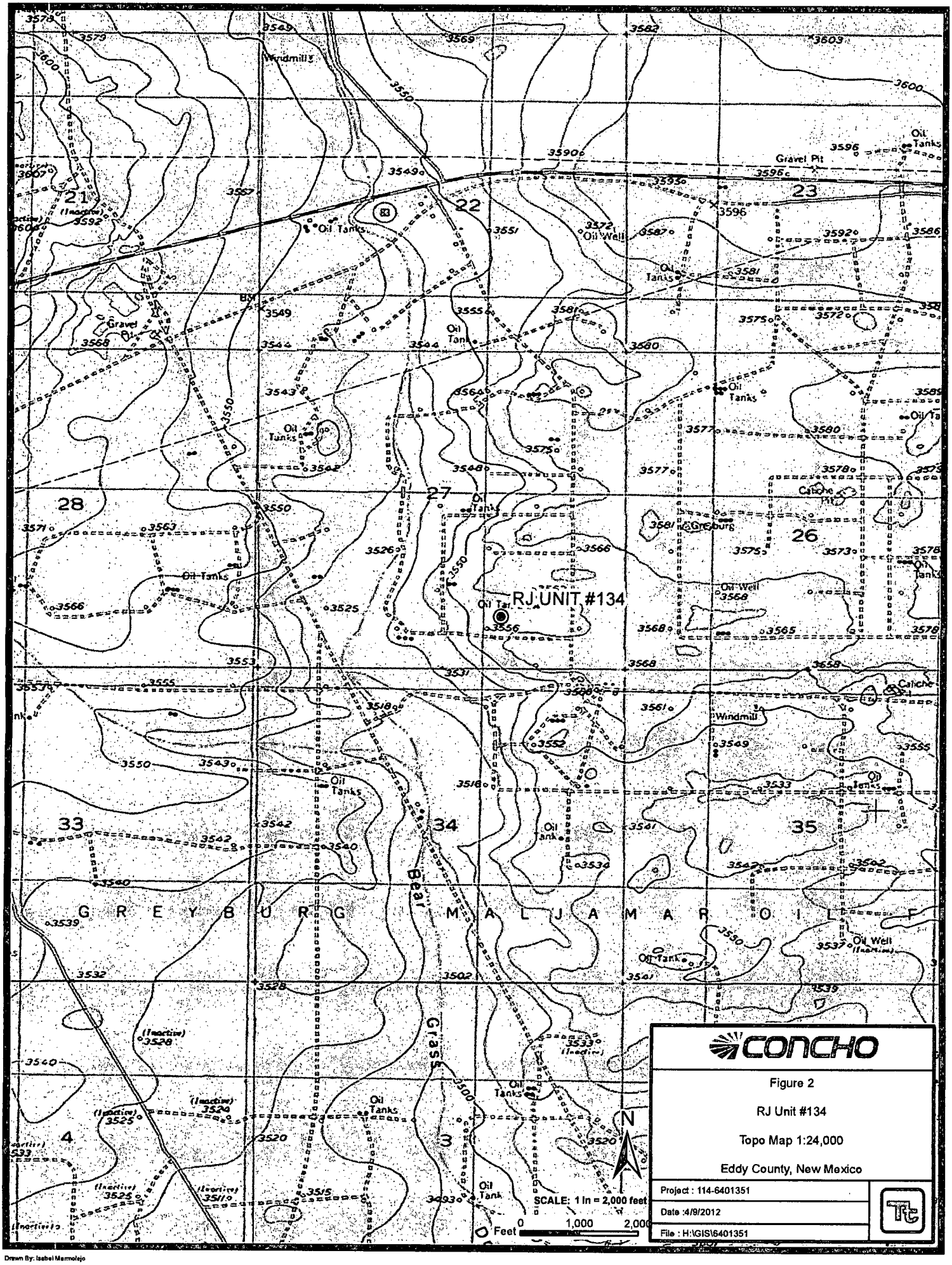
RJ Unit #134

Topo Map 1:200,000

Eddy County, New Mexico

Project : 114-6401351	
Date :4/9/2012	
File : H:\GIS\6401351	

Drawn By: Isabel Marmolejo



CONCHO

Figure 2

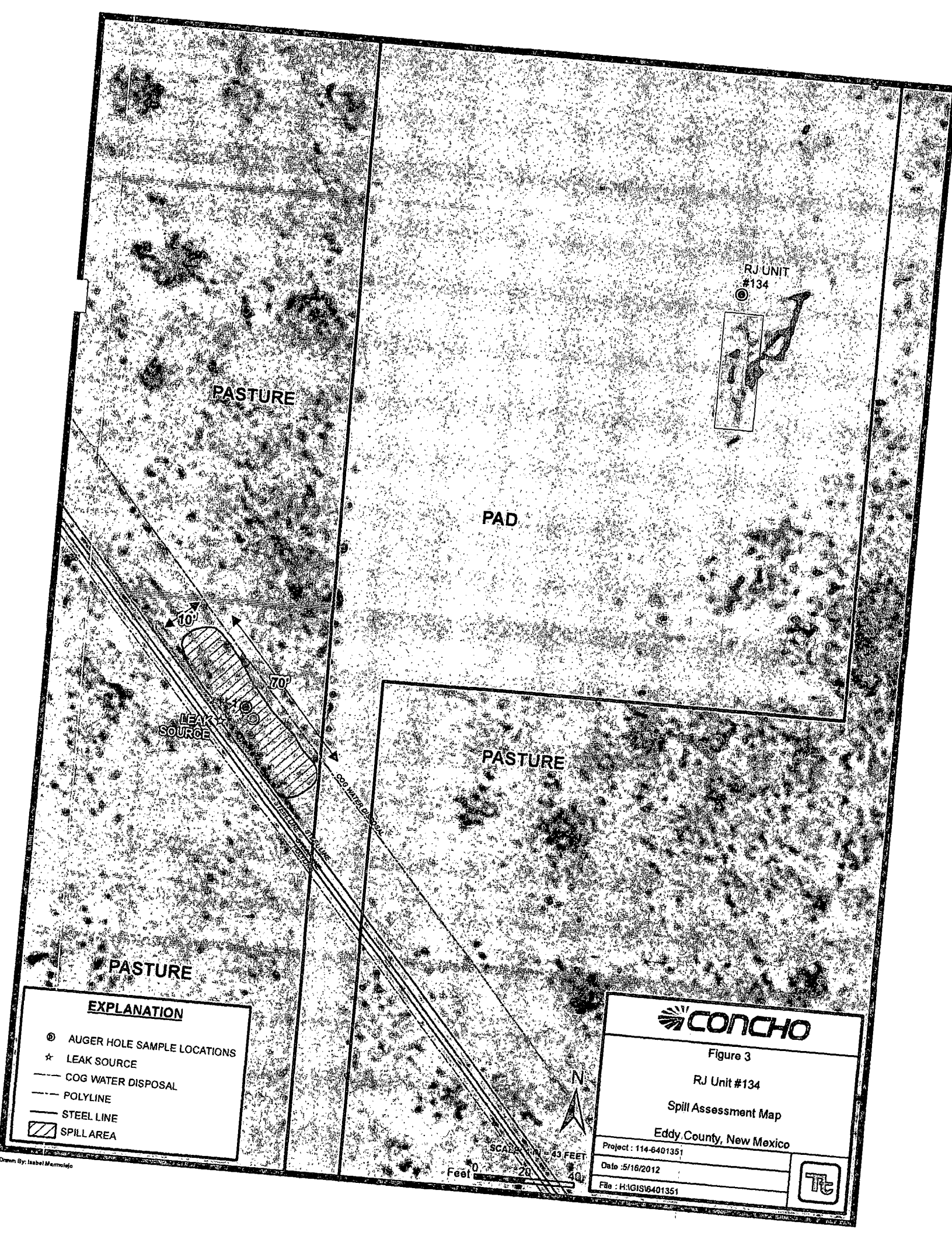
RJ Unit #134

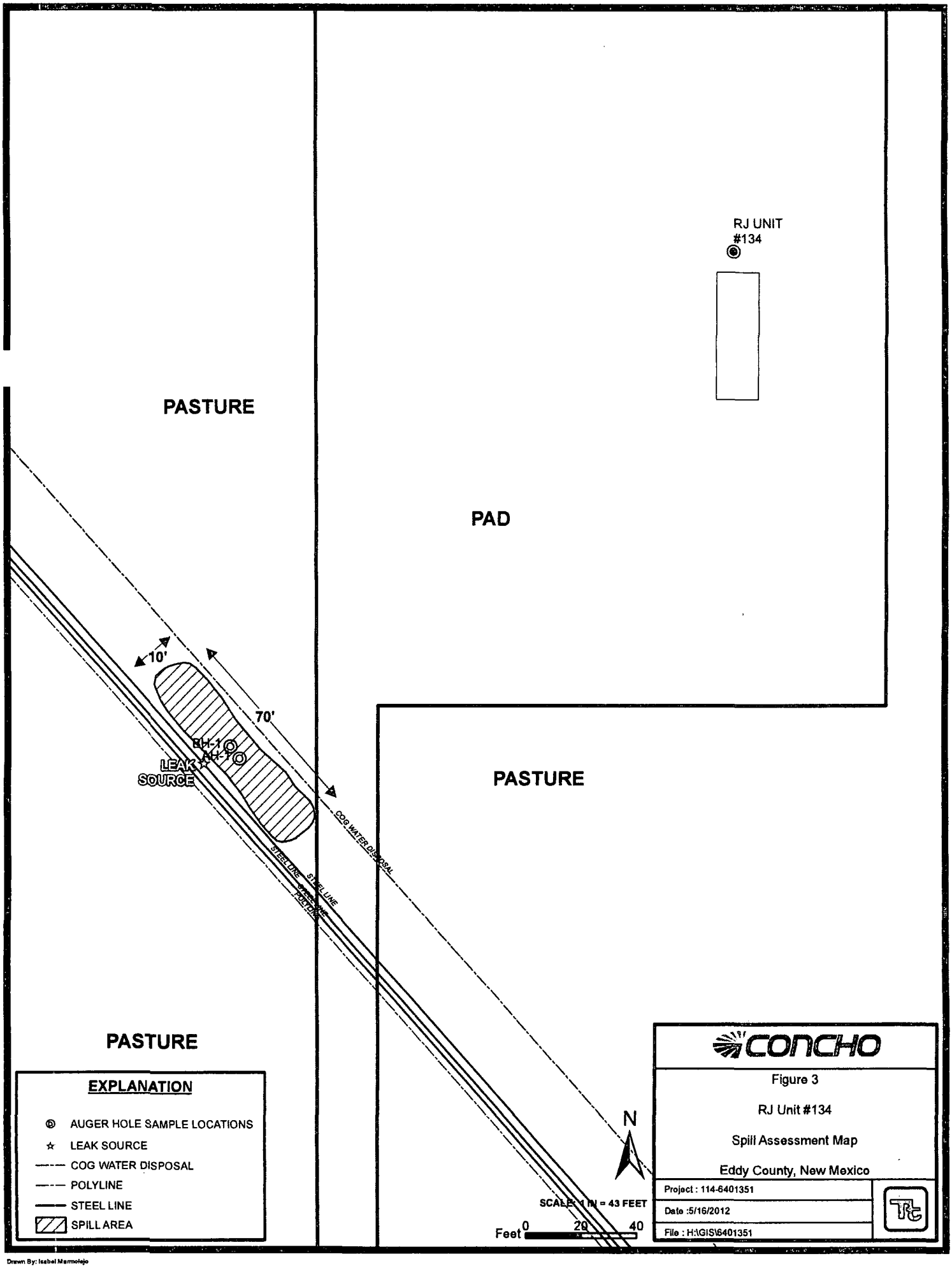
Topo Map 1:24,000

Eddy County, New Mexico

Project : 114-6401351	
Date :4/9/2012	
File : H:\GIS\6401351	

Drawn By: Isabel Marmolejo


RJ UNIT
#134
PASTURE
PAD
PASTURE
PASTURE
10'
70'
LEAK
SOURCE
COG WATER DISPOSAL
STEEL LINE
POLYLINE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
COG WATER DISPOSAL
POLYLINE
STEEL LINE
SPILL AREA
N
SCALE: 1" = 43 FEET
Feet 0 20 40
CONCHO
Figure 3
RJ Unit #134
Spill Assessment Map
Eddy County, New Mexico
Project : 114-6401351
Date :5/16/2012
File : H:\GIS\6401351
Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
RJ Unit 134
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-1	3/28/2012	0-1		X	223	1,770	1,993	<0.200	0.457	0.449	1.37	2.28	2,240
	"	1-1.5		X	-	-	-	-	-	-	-	-	<200
	"	2-2.5		X	-	-	-	-	-	-	-	-	<200
	"	3-3.5		X	-	-	-	-	-	-	-	-	<200
	"	4-4.5		X	-	-	-	-	-	-	-	-	<200
	"	5-5.5		X	-	-	-	-	-	-	-	-	<200
	"	6-6.5		X	-	-	-	-	-	-	-	-	<200
	"	7-7.5		X	-	-	-	-	-	-	-	-	<200
	"	8-8.5		X	-	-	-	-	-	-	-	-	504
	"	9-9.5		X	-	-	-	-	-	-	-	-	6,400
BH-1	4/24/2012	4-5		X	-	-	-	-	-	-	-	-	6,510
	"	6-7		X	-	-	-	-	-	-	-	-	2,160
	"	9-10		X	-	-	-	-	-	-	-	-	6,820
	"	14-15	X		-	-	-	-	-	-	-	-	9,010
	"	19-20	X		-	-	-	-	-	-	-	-	4,620
	"	24-25	X		-	-	-	-	-	-	-	-	114
	"	29-30	X		-	-	-	-	-	-	-	-	617
	"	39-40	X		-	-	-	-	-	-	-	-	203
	"	49-50	X		-	-	-	-	-	-	-	-	55.8
	"	59-60	X		-	-	-	-	-	-	-	-	20.3
Side Wall 1	7/10/2012		X		-	-	-	-	-	-	-	-	<20.0
Side Wall 2	"		X		-	-	-	-	-	-	-	-	238
Side Wall 3	"		X		-	-	-	-	-	-	-	-	24
Side Wall 4	"		X		-	-	-	-	-	-	-	-	<20.0
Bottom Hole 1	"	10	X		-	-	-	-	-	-	-	-	6,020

(-) Not Analyzed

Excavation Depth

40 mil Liner

Photos

COG Operating LLC
RJ Unit #134
Eddy County, New Mexico

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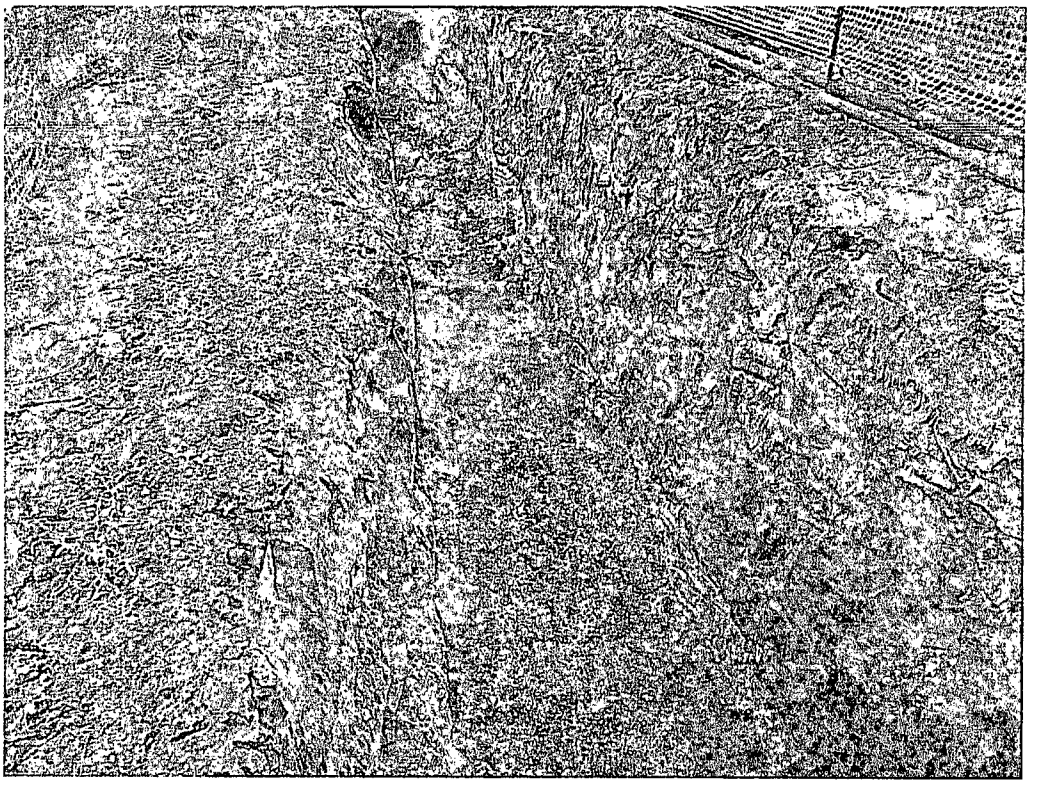
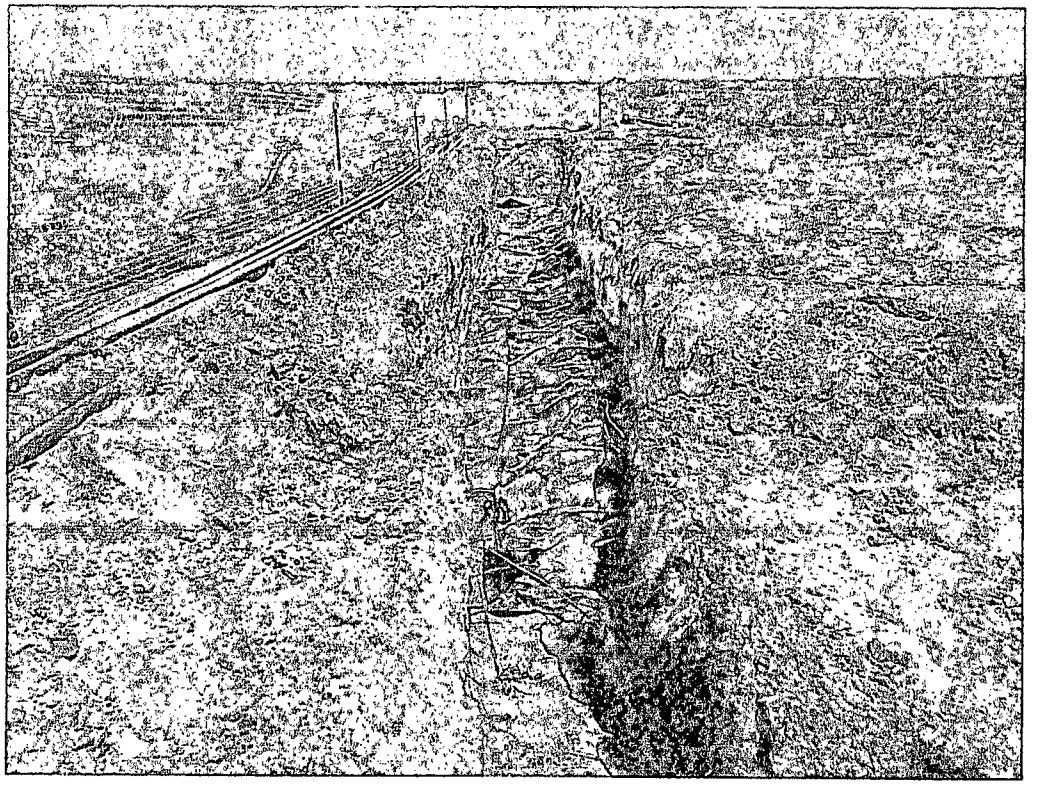


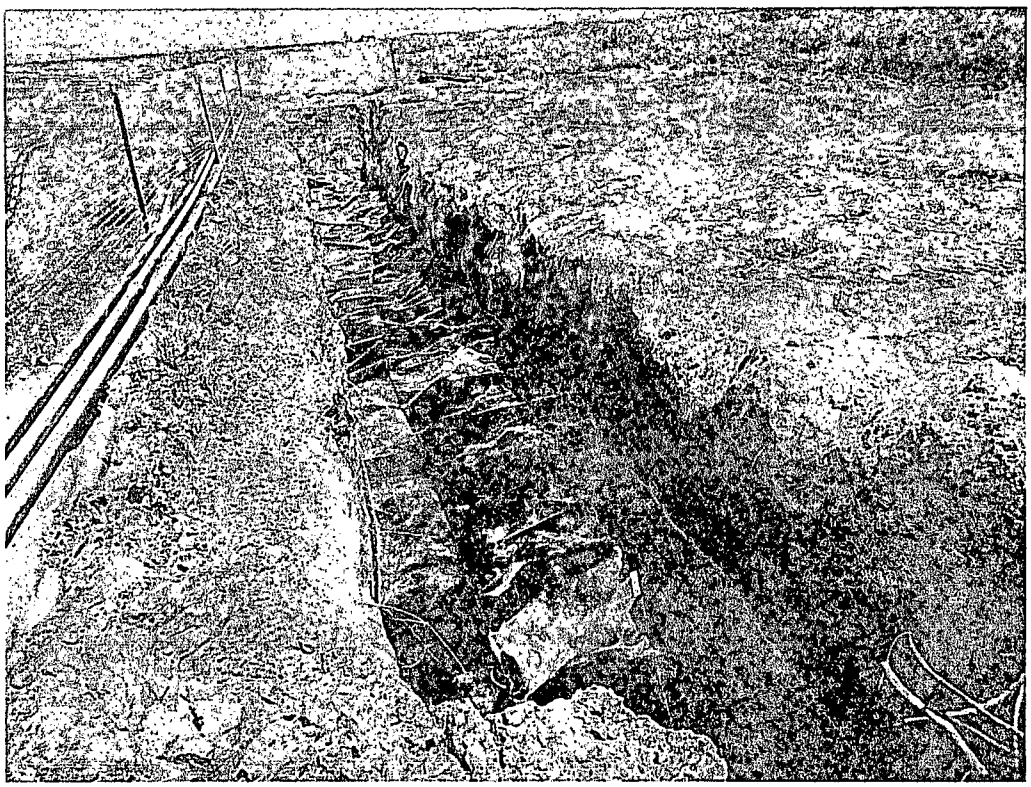
View Southeast – Area of AH-1 and BH-1



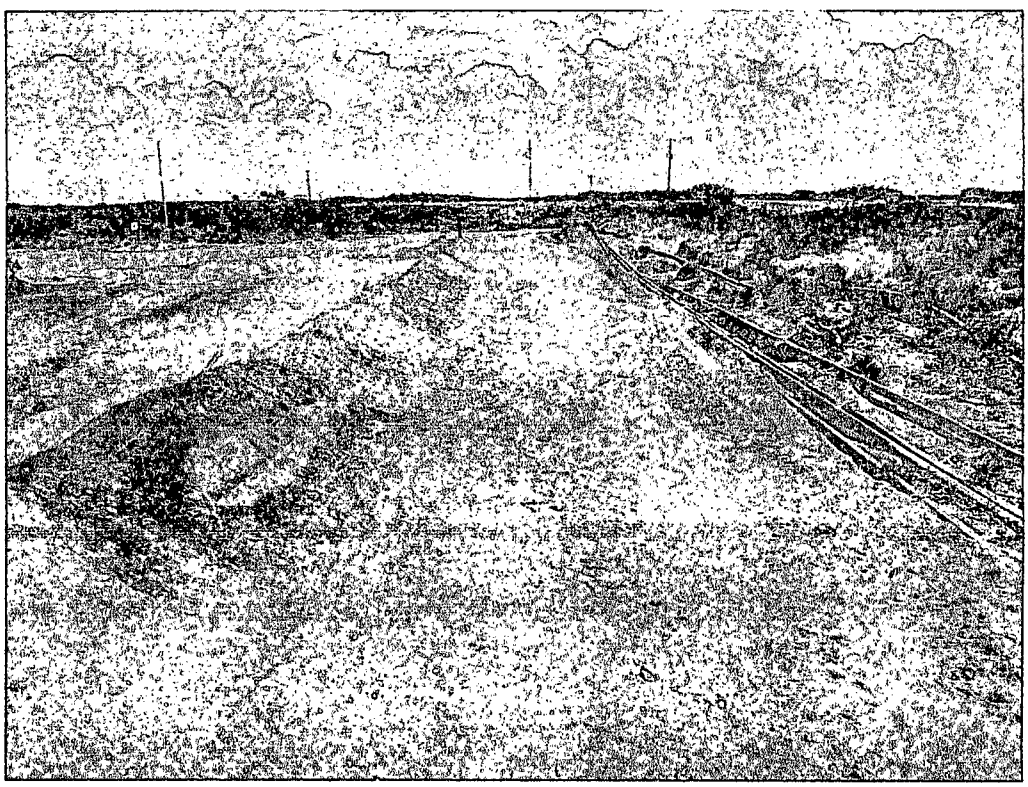
View Northwest - Liner

COG Operating LLC
RJ Unit #134
Eddy County, New Mexico

TETRA TECH



View Northwest - Liner



View Southeast - 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

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	**RJ Unit #134**	Facility Type	**Flowline**

Surface Owner: Federal	Mineral Owner	Lease No. (API#) 30-015-34573

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	27	17S	29E					Eddy

Latitude N 32.80056° **Longitude** W 104.05979°

NATURE OF RELEASE

Type of Release: Produced Fluid	Volume of Release 8bbls PW 2bbls Oil	Volume Recovered 6bbls PW 1bbl Oil
Source of Release: Steel Flowline	Date and Hour of Occurrence 03/05/2012	Date and Hour of Discovery 03/05/2012 11:30 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

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NMOCD ARTESIA

Describe Cause of Problem and Remedial Action Taken.*

The RJ Unit #134 steel flowline ruptured due to corrosion. The flowline has been repaired.

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: Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	RJ Unit #134	Facility Type	Flowline

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-015-34573

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	27	17S	29E					Eddy

Latitude 32 48.042 **Longitude** 104 03.583

NATURE OF RELEASE

Type of Release Produced fluid	Volume of Release 8bbls PW 2bbls OIL	Volume Recovered 6bblsPW 1bbl OIL
Source of Release Steel flowline	Date and Hour of Occurrence 03/05/2012	Date and Hour of Discovery 03/05/2012 11: 30 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The RJ Unit #134 steel flowline ruptured due to corrosion. The flowline has been repaired.

Describe Area Affected and Cleanup Action Taken.*

Initially 10bbls of produced fluid were released from the flowline and we were able to recover 7bbls with a vacuum truck. The closest well location to the release is the RJ Unit #119 (API# 30-015-03146). The spill area measured 10' x 65' on the ROW from the RJU to the Robinson SWD. 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: 03/12/2012 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - RJ Unit #134
Eddy County, New Mexico

16 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

16 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19 **110**	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

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

17 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 **79**	23	24
30	29	28	27	26	25
31	32	33	34 **53**	35	36

17 South 29 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 **SITE**	26	25
31	32	33	34	35	36

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

18 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 **65**	36

18 South 29 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 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

New Mexico State Engineers Well Reports
USGS Well Reports
New Mexico Water and Infrastructure Data System
Site Location

Appendix C

Summary Report

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

Report Date: July 25, 2012

Work Order: 12071723

Project Location: Eddy Co., NM
Project Name: COG/RJ Unit #134
Project Number: 114-6401351

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
303976	Side Wall 1	soil	2012-07-10	00:00	2012-07-17
303977	Side Wall 2	soil	2012-07-10	00:00	2012-07-17
303978	Side Wall 3	soil	2012-07-10	00:00	2012-07-17
303979	Side Wall 4	soil	2012-07-10	00:00	2012-07-17
303980	Bottom Hole 1	soil	2012-07-10	00:00	2012-07-17

Sample: 303976 - Side Wall 1

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 303977 - Side Wall 2

Param	Flag	Result	Units	RL
Chloride		**238**	mg/Kg	4

Sample: 303978 - Side Wall 3

Param	Flag	Result	Units	RL
Chloride		**24.3**	mg/Kg	4

Sample: 303979 - Side Wall 4

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 303980 - Bottom Hole 1

Param	Flag	Result	Units	RL
Chloride		**6020**	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

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

Report Date: July 25, 2012

Work Order: 12071723

Project Location: Eddy Co., NM
Project Name: COG/RJ Unit #134
Project Number: 114-6401351

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
303976	Side Wall 1	soil	2012-07-10	00:00	2012-07-17
303977	Side Wall 2	soil	2012-07-10	00:00	2012-07-17
303978	Side Wall 3	soil	2012-07-10	00:00	2012-07-17
303979	Side Wall 4	soil	2012-07-10	00:00	2012-07-17
303980	Bottom Hole 1	soil	2012-07-10	00:00	2012-07-17

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

Report Contents

Case Narrative

Samples for project COG/RJ Unit #134 were received by TraceAnalysis, Inc. on 2012-07-17 and assigned to work order 12071723. Samples for work order 12071723 were received intact at a temperature of 4.0 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	79131	2012-07-20 at 09:06	93333	2012-07-24 at 15:08

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 12071723 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: 303976 - Side Wall 1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93333	Date Analyzed:	2012-07-24	Analyzed By:	AR
Prep Batch:	79131	Sample Preparation:	2012-07-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 303977 - Side Wall 2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93333	Date Analyzed:	2012-07-24	Analyzed By:	AR
Prep Batch:	79131	Sample Preparation:	2012-07-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**238**	mg/Kg	5	4.00

Sample: 303978 - Side Wall 3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93333	Date Analyzed:	2012-07-24	Analyzed By:	AR
Prep Batch:	79131	Sample Preparation:	2012-07-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**24.3**	mg/Kg	5	4.00

Sample: 303979 - Side Wall 4

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93333	Date Analyzed:	2012-07-24	Analyzed By:	AR
Prep Batch:	79131	Sample Preparation:	2012-07-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 303980 - Bottom Hole 1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93333	Date Analyzed:	2012-07-24	Analyzed By:	AR
Prep Batch:	79131	Sample Preparation:	2012-07-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**6020**	mg/Kg	10	4.00

Method Blanks

Method Blank (1) QC Batch: 93333

QC Batch:	93333	Date Analyzed:	2012-07-24	Analyzed By:	AR
Prep Batch:	79131	QC Preparation:	2012-07-20	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: 93333 | Date Analyzed: 2012-07-24 | Analyzed By: AR
Prep Batch: 79131 | QC Preparation: 2012-07-20 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2730	mg/Kg	1	2500	<3.85	109	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2600	mg/Kg	1	2500	<3.85	104	85 - 115	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: 304065

QC Batch: 93333 | Date Analyzed: 2012-07-24 | Analyzed By: AR
Prep Batch: 79131 | QC Preparation: 2012-07-20 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3720	mg/Kg	10	2500	1040	107	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			3330	mg/Kg	10	2500	1040	92	79.4 - 120.6	11	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 93333 | Date Analyzed: 2012-07-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.7	100	85 - 115	2012-07-24

Standard (CCV-2)

QC Batch: 93333 | Date Analyzed: 2012-07-24 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-07-24

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.

1207723

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6401351

PROJECT NAME: RJ Unit #134

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
120976	7/10		S		X	Side Wall 1	1																	X				
977						Side Wall 2																						
978						Side Wall 3																						
979						Side Wall 4																						
980						Bottom Hole 1																						

RELINQUISHED BY: (Signature) — Date: 7/11/12 Time: 1400 — RECEIVED BY: (Signature) — Date: 7-11-12 Time: 1400

SAMPLED BY: (Print & Initial) IE — Date: 7-10-12 Time:

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

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Trace — RECEIVED BY: (Signature)

ADDRESS: CITY: Midland STATE: TX ZIP: CONTACT: PHONE: DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: — REMARKS: 4°C

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: May 9, 2012

Work Order: 12042611

Project Location: Eddy Co., NM
Project Name: COG/RJ Unit #134
Project Number: 114-6401351

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
295433	BH-1 @ AH-1 4-5'	soil	2012-04-24	00:00	2012-04-26
295434	BH-1 @ AH-1 6-7'	soil	2012-04-24	00:00	2012-04-26
295435	BH-1 @ AH-1 9-10'	soil	2012-04-24	00:00	2012-04-26
295436	BH-1 @ AH-1 14-15'	soil	2012-04-24	00:00	2012-04-26
295437	BH-1 @ AH-1 19-20'	soil	2012-04-24	00:00	2012-04-26
295438	BH-1 @ AH-1 24-25'	soil	2012-04-24	00:00	2012-04-26
295439	BH-1 @ AH-1 29-30'	soil	2012-04-24	00:00	2012-04-26
295440	BH-1 @ AH-1 39-40'	soil	2012-04-24	00:00	2012-04-26
295441	BH-1 @ AH-1 49-50"	soil	2012-04-24	00:00	2012-04-26
295442	BH-1 @ AH-1 59-60'	soil	2012-04-24	00:00	2012-04-26

Sample: 295433 - BH-1 @ AH-1 4-5'

Param	Flag	Result	Units	RL
Chloride		**6510**	mg/Kg	4

Sample: 295434 - BH-1 @ AH-1 6-7'

Param	Flag	Result	Units	RL
Chloride		**2160**	mg/Kg	4

Sample: 295435 - BH-1 @ AH-1 9-10'

Param	Flag	Result	Units	RL
Chloride		**6820**	mg/Kg	4

Sample: 295436 - BH-1 @ AH-1 14-15'

Param	Flag	Result	Units	RL
Chloride		**9010**	mg/Kg	4

Sample: 295437 - BH-1 @ AH-1 19-20'

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

Sample: 295438 - BH-1 @ AH-1 24-25'

Param	Flag	Result	Units	RL
Chloride		**114**	mg/Kg	4

Sample: 295439 - BH-1 @ AH-1 29-30'

Param	Flag	Result	Units	RL
Chloride		**617**	mg/Kg	4

Sample: 295440 - BH-1 @ AH-1 39-40'

Param	Flag	Result	Units	RL
Chloride		**203**	mg/Kg	4

Sample: 295441 - BH-1 @ AH-1 49-50"

Param	Flag	Result	Units	RL
Chloride		**55.8**	mg/Kg	4

Sample: 295442 - BH-1 @ AH-1 59-60'

Param	Flag	Result	Units	RL
Chloride		**20.3**	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

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

Report Date: May 9, 2012

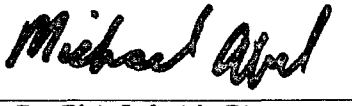
Work Order: 12042611

Project Location: Eddy Co., NM
Project Name: COG/RJ Unit #134
Project Number: 114-6401351

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
295433	BH-1 @ AH-1 4-5'	soil	2012-04-24	00:00	2012-04-26
295434	BH-1 @ AH-1 6-7'	soil	2012-04-24	00:00	2012-04-26
295435	BH-1 @ AH-1 9-10'	soil	2012-04-24	00:00	2012-04-26
295436	BH-1 @ AH-1 14-15'	soil	2012-04-24	00:00	2012-04-26
295437	BH-1 @ AH-1 19-20'	soil	2012-04-24	00:00	2012-04-26
295438	BH-1 @ AH-1 24-25'	soil	2012-04-24	00:00	2012-04-26
295439	BH-1 @ AH-1 29-30'	soil	2012-04-24	00:00	2012-04-26
295440	BH-1 @ AH-1 39-40'	soil	2012-04-24	00:00	2012-04-26
295441	BH-1 @ AH-1 49-50"	soil	2012-04-24	00:00	2012-04-26
295442	BH-1 @ AH-1 59-60'	soil	2012-04-24	00:00	2012-04-26

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

Report Contents

Case Narrative

Samples for project COG/RJ Unit #134 were received by TraceAnalysis, Inc. on 2012-04-26 and assigned to work order 12042611. Samples for work order 12042611 were received intact at a temperature of 4.0 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	77160	2012-05-04 at 09:09	91024	2012-05-09 at 10:46
Chloride (Titration)	SM 4500-Cl B	77160	2012-05-04 at 09:09	91040	2012-05-09 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 12042611 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: 295433 - BH-1 @ AH-1 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**6510**	mg/Kg	10	4.00

Sample: 295434 - BH-1 @ AH-1 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**2160**	mg/Kg	10	4.00

Sample: 295435 - BH-1 @ AH-1 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**6820**	mg/Kg	10	4.00

Sample: 295436 - BH-1 @ AH-1 14-15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**9010**		mg/Kg	10	4.00

Sample: 295437 - BH-1 @ AH-1 19-20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**4620**		mg/Kg	10	4.00

Sample: 295438 - BH-1 @ AH-1 24-25'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**114**		mg/Kg	5	4.00

Sample: 295439 - BH-1 @ AH-1 29-30'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**617**	mg/Kg	5	4.00

Sample: 295440 - BH-1 @ AH-1 39-40'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91040	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**203**	mg/Kg	5	4.00

Sample: 295441 - BH-1 @ AH-1 49-50"

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91040	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**55.8**	mg/Kg	5	4.00

Sample: 295442 - BH-1 @ AH-1 59-60'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91040	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	Sample Preparation:	2012-05-04	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**20.3**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 91024

QC Batch:	91024	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	QC Preparation:	2012-05-04	Prepared By:	AR

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

Method Blank (1) QC Batch: 91040

QC Batch:	91040	Date Analyzed:	2012-05-09	Analyzed By:	AR
Prep Batch:	77160	QC Preparation:	2012-05-04	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: 91024 | Date Analyzed: 2012-05-09 | Analyzed By: AR
Prep Batch: 77160 | QC Preparation: 2012-05-04 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2500	mg/Kg	1	2500	<3.85	100	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			2590	mg/Kg	1	2500	<3.85	104	85 - 115	4	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: 91040 | Date Analyzed: 2012-05-09 | Analyzed By: AR
Prep Batch: 77160 | QC Preparation: 2012-05-04 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2480	mg/Kg	1	2500	<3.85	99	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			2430	mg/Kg	1	2500	<3.85	97	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 295439

QC Batch: 91024 | Date Analyzed: 2012-05-09 | Analyzed By: AR
Prep Batch: 77160 | QC Preparation: 2012-05-04 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3090	mg/Kg	5	2500	617	99	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3150	mg/Kg	5	2500	617	101	79.4 - 120.6	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: 295473

QC Batch: 91040 | Date Analyzed: 2012-05-09 | Analyzed By: AR
Prep Batch: 77160 | QC Preparation: 2012-05-04 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			9250	mg/Kg	10	2500	7040	88	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			9510	mg/Kg	10	2500	7040	99	79.4 - 120.6	3	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 91024 | Date Analyzed: 2012-05-09 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-05-09

Standard (CCV-2)

QC Batch: 91024 | Date Analyzed: 2012-05-09 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.3	99	85 - 115	2012-05-09

Standard (CCV-1)

QC Batch: 91040 | Date Analyzed: 2012-05-09 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-05-09

Standard (CCV-2)

QC Batch: 91040 | Date Analyzed: 2012-05-09 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.7	100	85 - 115	2012-05-09

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-11-3	Midland

Standard Flags

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

Attachments

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

1204261

Analysis Request of Chain of Custody Record

PAGE: 1 F: 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.: 114610

PROJECT NAME: RJU 134

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	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
295433	4/24		S		X	BH-1 @ AH-1 4-5'	1																	X				
436						6-7'	1																	X				
437						9-10'	1																	X				
438						14-15'	1																	X				
439						19-20'	1																	X				
440						24-25'	1																	X				
441						29-30'	1																	X				
442						39-40'	1																	X				
443						49-50'	1																	X				
444						59-60'	1																	X				

RELINQUISHED BY: (Signature) Date: 4/26/12 Time: 11 Rolan

RECEIVED BY: (Signature) Date: 4/26/12 Time: 11:30

SAMPLED BY: (Print & Initial) Kim Date: 4/24/12 Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

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

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: TRACE

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED: T.O Intact

REMARKS: All to 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.

1204261 1

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 per Jeanne 5/8/12 @ | SITE MANAGER: Ike Tavarez

PROJECT NO.: 114G10 1351 | PROJECT NAME: RJU 134

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	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
305433	4/24		S		X	BH-1 @ AH-1 4-5'	1																	X				
43[illegible]						6-7'	1																	X				
43[illegible]						9-10'	1																	X				
43[illegible]						14-15'	1																	X				
43[illegible]						19-20'	1																	X				
43[illegible]						24-25'	1																	X				
43[illegible]						29-30'	1																	X				
4420						39-40'	1																	X				
4431						49-50'	1																	X				
[illegible]						59-60'	1																	X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: 4/26/12 Time: 11:30am	RECEIVED BY: (Signature)	Date: 4/26/12 Time: 11:30
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: 4/24/12 Time:

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

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: TRACE — RECEIVED BY: (Signature)

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: T.O Intact

REMARKS: All to 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.

Summary Report

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

Report Date: April 5, 2012

Work Order: 12033032

Project Location: Eddy Co., NM
Project Name: COG/RJ Unit #134
Project Number: 114-6401351

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
293054	AH-1 0-1'	soil	2012-03-28	00:00	2012-03-30
293055	AH-1 1-1.5'	soil	2012-03-28	00:00	2012-03-30
293056	AH-1 2-2.5'	soil	2012-03-28	00:00	2012-03-30
293057	AH-1 3-3.5'	soil	2012-03-28	00:00	2012-03-30
293058	AH-1 4-4.5'	soil	2012-03-28	00:00	2012-03-30
293059	AH-1 5-5.5'	soil	2012-03-28	00:00	2012-03-30
293060	AH-1 6-6.5'	soil	2012-03-28	00:00	2012-03-30
293061	AH-1 7-7.5'	soil	2012-03-28	00:00	2012-03-30
293062	AH-1 8-8.5'	soil	2012-03-28	00:00	2012-03-30
293063	AH-1 9-9.5'	soil	2012-03-28	00:00	2012-03-30

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
293054 - AH-1 0-1'	<0.200 Qr	**0.457** Qr	**0.449** Qr	**1.37** Qr	**1770**	**223**

Sample: 293054 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**2240**	mg/Kg	4

Sample: 293055 - AH-1 1-1.5'

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

Sample: 293056 - AH-1 2-2.5'

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

Sample: 293057 - AH-1 3-3.5'

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

Sample: 293058 - AH-1 4-4.5'

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

Sample: 293059 - AH-1 5-5.5'

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

Sample: 293060 - AH-1 6-6.5'

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

Sample: 293061 - AH-1 7-7.5'

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

Sample: 293062 - AH-1 8-8.5'

Param	Flag	Result	Units	RL
Chloride		**504**	mg/Kg	4

Sample: 293063 - AH-1 9-9.5'

Param	Flag	Result	Units	RL
Chloride		**6400**	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

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

Report Date: April 5, 2012

Work Order: 12033032

Project Location: Eddy Co., NM
Project Name: COG/RJ Unit #134
Project Number: 114-6401351

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
293054	AH-1 0-1'	soil	2012-03-28	00:00	2012-03-30
293055	AH-1 1-1.5'	soil	2012-03-28	00:00	2012-03-30
293056	AH-1 2-2.5'	soil	2012-03-28	00:00	2012-03-30
293057	AH-1 3-3.5'	soil	2012-03-28	00:00	2012-03-30
293058	AH-1 4-4.5'	soil	2012-03-28	00:00	2012-03-30
293059	AH-1 5-5.5'	soil	2012-03-28	00:00	2012-03-30
293060	AH-1 6-6.5'	soil	2012-03-28	00:00	2012-03-30
293061	AH-1 7-7.5'	soil	2012-03-28	00:00	2012-03-30
293062	AH-1 8-8.5'	soil	2012-03-28	00:00	2012-03-30
293063	AH-1 9-9.5'	soil	2012-03-28	00:00	2012-03-30

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

Report Contents

Case Narrative

Samples for project COG/RJ Unit #134 were received by TraceAnalysis, Inc. on 2012-03-30 and assigned to work order 12033032. Samples for work order 12033032 were received intact at a temperature of 0.9 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	76308	2012-04-02 at 10:48	89915	2012-04-02 at 11:09
Chloride (Titration)	SM 4500-Cl B	76336	2012-04-03 at 09:27	89955	2012-04-04 at 10:50
TPH DRO - NEW	S 8015 D	76291	2012-04-02 at 13:55	89888	2012-04-02 at 13:59
TPH GRO	S 8015 D	76308	2012-04-02 at 10:48	89908	2012-04-03 at 11:36

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 12033032 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: 293054 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	89915	Date Analyzed:	2012-04-02	Analyzed By:	tc
Prep Batch:	76308	Sample Preparation:	2012-04-02	Prepared By:	tc

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qr,U	1	<0.200	mg/Kg	10	0.0200
Toluene	Qr	1	**0.457**	mg/Kg	10	0.0200
Ethylbenzene	Qr	1	**0.449**	mg/Kg	10	0.0200
Xylene	Qr	1	**1.37**	mg/Kg	10	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		6.20	mg/Kg	10	10.0	62	75 - 135.4
4-Bromofluorobenzene (4-BFB)				7.05	mg/Kg	10	10.0	70	63.6 - 158.9

Sample: 293054 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89955	Date Analyzed:	2012-04-04	Analyzed By:	AR
Prep Batch:	76336	Sample Preparation:	2012-04-03	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**2240**	mg/Kg	100	4.00

Sample: 293054 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	89888	Date Analyzed:	2012-04-02	Analyzed By:	DA
Prep Batch:	76291	Sample Preparation:	2012-04-02	Prepared By:	DA

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**1770**	mg/Kg	5	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		421	mg/Kg	5	100	421	49.3 - 157.5

Sample: 293054 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	89908	Date Analyzed:	2012-04-03	Analyzed By:	tc
Prep Batch:	76308	Sample Preparation:	2012-04-02	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**223**	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			6.21	mg/Kg	10	10.0	62	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			7.18	mg/Kg	10	10.0	72	45.1 - 162.2

Sample: 293055 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89955	Date Analyzed:	2012-04-04	Analyzed By:	AR
Prep Batch:	76336	Sample Preparation:	2012-04-03	Prepared By:	AR

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

Sample: 293056 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89955	Date Analyzed:	2012-04-04	Analyzed By:	AR
Prep Batch:	76336	Sample Preparation:	2012-04-03	Prepared By:	AR

continued ...

sample 293056 continued ...

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

Sample: 293057 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89955	Date Analyzed:	2012-04-04	Analyzed By:	AR
Prep Batch:	76336	Sample Preparation:	2012-04-03	Prepared By:	AR

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

Sample: 293058 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89955	Date Analyzed:	2012-04-04	Analyzed By:	AR
Prep Batch:	76336	Sample Preparation:	2012-04-03	Prepared By:	AR

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

Sample: 293059 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89955	Date Analyzed:	2012-04-04	Analyzed By:	AR
Prep Batch:	76336	Sample Preparation:	2012-04-03	Prepared By:	AR

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

Sample: 293060 - AH-1 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89955	Date Analyzed:	2012-04-04	Analyzed By:	AR
Prep Batch:	76336	Sample Preparation:	2012-04-03	Prepared By:	AR

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

Sample: 293061 - AH-1 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89955	Date Analyzed:	2012-04-04	Analyzed By:	AR
Prep Batch:	76336	Sample Preparation:	2012-04-03	Prepared By:	AR

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

Sample: 293062 - AH-1 8-8.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89955	Date Analyzed:	2012-04-04	Analyzed By:	AR
Prep Batch:	76336	Sample Preparation:	2012-04-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**504**	mg/Kg	50	4.00

Sample: 293063 - AH-1 9-9.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	89955	Date Analyzed:	2012-04-04	Analyzed By:	AR
Prep Batch:	76336	Sample Preparation:	2012-04-03	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**6400**	mg/Kg	100	4.00

Method Blanks

Method Blank (1) QC Batch: 89888

QC Batch: 89888 | Date Analyzed: 2012-04-02 | Analyzed By: DA
Prep Batch: 76291 | QC Preparation: 2012-04-02 | Prepared By: DA

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			126	mg/Kg	1	100	126	52 - 140.8

Method Blank (1) QC Batch: 89908

QC Batch: 89908 | Date Analyzed: 2012-04-03 | Analyzed By: tc
Prep Batch: 76308 | QC Preparation: 2012-04-02 | Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	1.22	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.65	mg/Kg	1	2.00	82	78.6 - 111
4-Bromofluorobenzene (4-BFB)			1.53	mg/Kg	1	2.00	76	55 - 100

Method Blank (1) QC Batch: 89915

QC Batch: 89915 | Date Analyzed: 2012-04-02 | Analyzed By: tc
Prep Batch: 76308 | QC Preparation: 2012-04-02 | Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00470	mg/Kg	0.02
Toluene		1	<0.00980	mg/Kg	0.02

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
Ethylbenzene		1	<0.00500	mg/Kg	0.02
Xylene		1	<0.0170	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.62	mg/Kg	1	2.00	81	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.64	mg/Kg	1	2.00	82	55.9 - 112.4

Method Blank (1) QC Batch: 89955

QC Batch:	89955	Date Analyzed:	2012-04-04	Analyzed By:	AR
Prep Batch:	76336	QC Preparation:	2012-04-03	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: 89888 | Date Analyzed: 2012-04-02 | Analyzed By: DA
Prep Batch: 76291 | QC Preparation: 2012-04-02 | Prepared By: DA

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	246	mg/Kg	1	250	<14.5	98	62 - 128.3

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	245	mg/Kg	1	250	<14.5	98	62 - 128.3	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	116	109	mg/Kg	1	100	116	109	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 89908 | Date Analyzed: 2012-04-03 | Analyzed By: tc
Prep Batch: 76308 | QC Preparation: 2012-04-02 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.9	mg/Kg	1	20.0	<1.22	94	68.3 - 105.7

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.2	mg/Kg	1	20.0	<1.22	96	68.3 - 105.7	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)	1.91	2.00	mg/Kg	1	2.00	96	100	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.80	1.90	mg/Kg	1	2.00	90	95	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 89915 | Date Analyzed: 2012-04-02 | Analyzed By: tc
Prep Batch: 76308 | QC Preparation: 2012-04-02 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.23	mg/Kg	1	2.00	<0.00470	112	86.5 - 124.9
Toluene		1	2.22	mg/Kg	1	2.00	<0.00980	111	84.7 - 122.5
Ethylbenzene		1	2.23	mg/Kg	1	2.00	<0.00500	112	79.4 - 118.9
Xylene		1	6.68	mg/Kg	1	6.00	<0.0170	111	79.5 - 118.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.19	mg/Kg	1	2.00	<0.00470	110	86.5 - 124.9	2	20
Toluene		1	2.20	mg/Kg	1	2.00	<0.00980	110	84.7 - 122.5	1	20
Ethylbenzene		1	2.21	mg/Kg	1	2.00	<0.00500	110	79.4 - 118.9	1	20
Xylene		1	6.70	mg/Kg	1	6.00	<0.0170	112	79.5 - 118.9	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.89	1.95	mg/Kg	1	2.00	94	98	73.9 - 127
4-Bromofluorobenzene (4-BFB)	1.90	1.93	mg/Kg	1	2.00	95	96	70.4 - 119.9

Laboratory Control Spike (LCS-1)

QC Batch: 89955 | Date Analyzed: 2012-04-04 | Analyzed By: AR
Prep Batch: 76336 | QC Preparation: 2012-04-03 | Prepared By: AR

Param	F	C	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	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			105	mg/Kg	1	100	<3.85	105	85 - 115	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: 293135

QC Batch: 89888 | Date Analyzed: 2012-04-02 | Analyzed By: DA
Prep Batch: 76291 | QC Preparation: 2012-04-02 | Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	1040	mg/Kg	5	250	865	70	45.5 - 127

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	1040	mg/Kg	5	250	865	70	45.5 - 127	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	Qsr	Qsr	290	297	mg/Kg	5	100	290	297	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 293145

QC Batch: 89908 | Date Analyzed: 2012-04-03 | Analyzed By: tc
Prep Batch: 76308 | QC Preparation: 2012-04-02 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	89.9	mg/Kg	5	50.0	34.1827	111	28.2 - 157.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	97.4	mg/Kg	5	50.0	34.1827	126	28.2 - 157.2	8	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)	5.33	5.45	mg/Kg	5	5	107	109	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	5.00	5.12	mg/Kg	5	5	100	102	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 293125

QC Batch: 89915 | Date Analyzed: 2012-04-02 | Analyzed By: tc
Prep Batch: 76308 | QC Preparation: 2012-04-02 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.90	mg/Kg	1	2.00	<0.00470	95	69.3 - 159.2
Toluene		1	1.93	mg/Kg	1	2.00	<0.00980	96	68.7 - 157
Ethylbenzene		1	2.01	mg/Kg	1	2.00	<0.00500	100	71.6 - 158.2
Xylene		1	6.02	mg/Kg	1	6.00	<0.0170	100	70.8 - 159.8

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	Qr	1	2.42	mg/Kg	1	2.00	<0.00470	121	69.3 - 159.2	24	20
Toluene	Qr	1	2.48	mg/Kg	1	2.00	<0.00980	124	68.7 - 157	25	20
Ethylbenzene	Qr	1	2.59	mg/Kg	1	2.00	<0.00500	130	71.6 - 158.2	25	20
Xylene	Qr	1	7.83	mg/Kg	1	6.00	<0.0170	130	70.8 - 159.8	26	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)	1.84	2.20	mg/Kg	1	2	92	110	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	1.76	2.17	mg/Kg	1	2	88	108	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 293063

QC Batch: 89955 | Date Analyzed: 2012-04-04 | Analyzed By: AR
Prep Batch: 76336 | QC Preparation: 2012-04-03 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			16800	mg/Kg	100	10000	6400	104	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			16200	mg/Kg	100	10000	6400	98	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 (CCV-2)

QC Batch: 89888 | Date Analyzed: 2012-04-02 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	258	103	80 - 120	2012-04-02

Standard (CCV-3)

QC Batch: 89888 | Date Analyzed: 2012-04-02 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	242	97	80 - 120	2012-04-02

Standard (CCV-1)

QC Batch: 89908 | Date Analyzed: 2012-04-03 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.17	117	80 - 120	2012-04-03

Standard (CCV-2)

QC Batch: 89908 | Date Analyzed: 2012-04-03 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.15	115	80 - 120	2012-04-03

Standard (CCV-1)

QC Batch: 89915 | Date Analyzed: 2012-04-02 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.105	105	80 - 120	2012-04-02
Toluene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-02
Ethylbenzene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-02
Xylene		1	mg/kg	0.300	0.318	106	80 - 120	2012-04-02

Standard (CCV-2)

QC Batch: 89915 | Date Analyzed: 2012-04-02 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.109	109	80 - 120	2012-04-02
Toluene		1	mg/kg	0.100	0.108	108	80 - 120	2012-04-02
Ethylbenzene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-02
Xylene		1	mg/kg	0.300	0.315	105	80 - 120	2012-04-02

Standard (ICV-1)

QC Batch: 89955 | Date Analyzed: 2012-04-04 | 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	96.7	97	85 - 115	2012-04-04

Standard (CCV-1)

QC Batch: 89955 | Date Analyzed: 2012-04-04 | 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	103	103	85 - 115	2012-04-04

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-11-3	Midland

Standard Flags

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

Attachments

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

#120330 32

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6401351

PROJECT NAME: RJ Unit #134 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	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
293054	3/28		S		X	AH-1 0-1'	1				X		X	X											X				
055						1-1.5'																			X				
056						2-2.5'																			X				
057						3-3.5'																			X				
058						4-4.5'																			X				
059						5-5.5'																			X				
060						6-6.5'																			X				
061						7-7.5'																			X				
062						8-8.5'																			X				
063						9-9.5'																			X				

RELINQUISHED BY: (Signature) Date: 3/30/12 Time: 3:40 PM RECEIVED BY: (Signature) Date: 3/30/12 Time: 3:40 PM

SAMPLED BY: (Print & Initial) TF Date: 3-28-12 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: .9 intact

REMARKS: Run deepest sample if TPH exceeds 5,000 mg/kg

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

If no samples of benzene exceed 10 mg/kg or total BTEX exceed 50 mg/kg.