SITE INFORMATION

n . T

		Report 1	ype: CLOSC						
General Site Info	ormation:	8. "And " and " 			が、1995年を1995年である。 1996年後にある「1995年の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の				
Site:		Tenneco Sta	Tenneco State #1						
Company:		COG Operat	ting LLC						
Section, Townsl	hip and Range	Unit M	Sec. 20	T-17-S	R-29-E				
Lease Number:		API-30-015-3	30603						
County:		Eddy Count	y						
GPS:			32.81351° N			104.10428° W			
Surface Owner:		State				u • u ·			
Mineral Owner:									
		Intersection of to location.	CH-217 and Hwy 8	2, travel wes	it on 82 6.3 mi, rig	nt 200°, left 0.3 ml, right 0.1 ml			
Release Data: 🐁			an ta		م میں ہے۔ میں میں میں میں میں میں میں میں میں میں				
Date Released:		1/17/2012							
Type Release:		Produced Flu	uids		· · · ·				
Source of Contan	nination:	Water pump	failure						
Fluid Released:		20 bbls							
Fluids Recovered	1:	19 bbls							
Official Commun	nication:		م الم الم الم الم الم الم الم الم الم ال	اله يوهم المحالي القال. م الا الجار المحالي المحالي ا					
Name:	Pat Ellis				Ike Tavarez				
Company:	COG Operating, LL	_C			Tetra Tech				
Address:	550 W. Texas Ave. Ste. 1300				1910 N. Big Sprir	10			
P O Box					······································				
Citu:	Midland Toxoo 707	701			Midland Toxac				
Chy.									
Phone number:	(432) 686-3023				(432) 682-4559				
Fax:	(432) 684-7137								
Email:	pellis@conchoreso	urces.com			<u>ike.tavarez@tet</u>	ratech.com			
Ranking Criteria									
Depth to Groundw	vater:		Ranking Score		Site	e Data			
<50 ft			20						
50-99 ft			10						
>100 ft.			0			0			
WellHead Protecti	on:		Ranking Score		Site	2 Data			
Water Source <1,0	000 ft., Private <200 f	t.	20						
Water Source >1,0	000 ft., Private >200 f	t.	0		· · · · · · · · · · · · · · · · · · ·	0			
Surface Body of W	/ater:		Ranking Score		Site	2 Data			
<200 ft.			20						
200 ft - 1,000 ft.			10						
>1,000 ft.			0			0			
Tot	al Ranking Score:	t og here. Det forste	0						
				odlice)	I				
		Bonzon	Total BTEY	iy/ky)					
		10		5 000					
			10	3,000					
a in the state of the second									



SEP 06 2012 NMOCD ARTESIA

July 26, 2012

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

Re: Closure Report for the COG Operating LLC., Tenneco State #1, Unit M, Section 20, 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 Tenneco State #1, Unit M, Section 20, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.81351°, W 104.10428°. 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 January 17, 2012, and released approximately twenty (20) barrels of produced water due to a water pump failure. To alleviate the problem, COG personnel repaired the electrical failure with the pump and returned it to service. Approximately nineteen (19) barrels of standing fluids were recovered. The spill was contained within the tank battery firewalls and measured approximately 3' X 70'. The initial C-141 form is enclosed in Appendix A.



Groundwater

No water wells were listed within Section 20. According to the NMOCD groundwater map, the depth to groundwater in this area is approximately 125' below surface. The groundwater data is shown in Figure B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

On February 6, 2012, Tetra Tech personnel inspected and sampled the spill area. Three (3) auger holes (AH-1 through AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, none of the samples exceeded the RRAL for TPH or BTEX. The chlorides detected in the three auger holes did not show a significant impact the soil.

Conclusion and Closure Request

None of the soil samples exceeded the RRAL for TPH and BTEX. The chlorides detected did not show a significant impact to the soils and do



not appear to be an environmental concern. Based on the results, COG requests closure of site, with no further action. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,

TETRA TECH Ike Tavarez, Pe

Project Manager

cc: Pat Ellis - COG

Figures







Orawn By: Isabel Marmolejo

Tables

.

Table 1COG Operating LLC.Tenneco State #1Eddy County, New Mexico

Sample	Sample	Sample	BEB	Soil	Status	•	TPH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
ID	Date	Depth (ft)	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
AH-1	2/6/2012	0-1	-	Х		11.5	<50.0	11.5	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<200
	n	1-1.5	-	Х		-	-	-	-	-	-	-	-	<200
		2-2.5	-	Х		-	-	-	-	-	-	-	_	<200
		3-3.5	-	Х		-	-	-	-	-	-	-	_	<200
	u	4-4.5	-	X		-	-	-	-	-	-	-	-	<200
	n	5- 5.5	-	X		-	-	-	-	-	-	-	-	<200
	11	6-6.5	-	Х		-	-	-	-	-	-	-		<200
AH-2	2/6/2012	0-1	-	X		3.12	<50.0	3.12	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<200
	11	1-1.5	-	Х		-	-	-	-	-	-	-	-	<200
	41	2-2.5	-	X		-	-	-	-	-	-	-	_	<200
	n	3-3.5	-	Х		-	-	-	-	-	-	-	-	<200
	11	4-4.5	-	Х		-	-	-	-	-	-	-	-	<200
	0/0/0010	0.1	1			0.00	500	0.00	0.0000		0.0000	0.0000		010
AH-3	2/6/2012	0-1	-	×		2.36	<50.0	2.36	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	313
	. 0	1-1.5	-	X		-	-	-	-	-	-	-	-	204

(-) Not Analyzed

Photos

COG Operating LLC Tenneco State #1 Tank Battery Eddy County, New Mexico



TETRA TECH



View west - Area in front of tank battery near AH-1



View east - Area in front of tank battery near AH-3

Appendix A

.

State of New Mexico **Energy Minerals and Natural Resources**

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

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 Operatin	g LLC	Contact Pat Ellis		
Address 550 W. Texas, Suite 1300	Midland, Texas 79701	Telephone No. (432) 230-0077		
Facility Name Tenneco State #1		Facility Type Tank Battery		
Surface Owner State	Mineral Own	er	Lease No. 30-01.	5-29809

Surface Owner	State

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County	
М	20	17-S	29-Е					Eddy	

Latitude N 32.81351° Longitude W 104.10428°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release	Volume Recovered
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Water Tank	1/17/2012	1/17/2012 10:00 p.m.
Was Immediate Notice Given?	If YES, To Whom?	
🗌 Yes 🛛 No 🖾 Not Required		
By Whom?	Date and Hour	
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse.
Yes 🛛 No	N/A	
If a Watercourse was Impacted, Describe Fully.*		
N/A		
1.1.1		
Describe Cause of Problem and Remedial Action Taken.*		
The water nump wasn't working and in return the water tank tan over. The	he water nump had an electrical failur	a that has been renaired and it has been
returned to service.	ne water pump had an electrical failur	e that has been reparted and it has been
Describe Area Affected and Cleanup Action Taken.*		
Tetra Tech inspected and collected samples to define spills extent. The T	PH and BTEX were below the RRAI	and the chloride concentrations did not
show a significant impact to the soils. Based on the results, no remedial a	action was performed at the site. Tet	a Tech prepared closure report and
submitted to NMOCD for review.		
I hereby certify that the information given above is true and complete to t	he best of my knowledge and underst	and that pursuant to NMOCD rules and
regulations all operators are required to report and/or file certain release n	otifications and perform corrective ac	tions for releases which may endanger
public health or the environment. The acceptance of a C-141 report by th	e NMOCD marked as "Final Report"	does not relieve the operator of liability
should their operations have failed to adequately investigate and remediat	te contamination that pose a threat to g	ground water, surface water, human health
federal, state, or local laws and/or regulations	loes not relieve the operator of respon	sidility for compliance with any other
	OIL CONSERV	VATION DIVISION
	<u>one contrent</u>	
Signature:		
Printed Name: Ike Tayarez (agent for COG)	Approved by District Supervisor:	
		an <u>,,,,</u>
Title: Project Manager	Approval Date:	Expiration Date:
F mail Address; ika tayaraz@tatratash.com	Conditions of American	
	Conumons of Approval:	Attached
Date: (-)6// Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

Dispict 1 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.



Submit 2 Copies to appropriate District Office in accordance with Rule 1 16 on back side of form

Santa Fe, NM 87505

Release Notification and Corrective Action

		OPERATOR		Initial Report		Final Report
Name of Company Co	DG OPERATING LLC	Contact	Pat Ellis			
Address 550 W. Texa	s, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077			
Facility Name	Tenneco State #1	Facility Type	Tank Battery			
Surface Owner State	Mineral Own	er		ease No. (API#) 30-0)	15-30603

LOCATION OF RELEASE

Unit Letter M	Section 20	Township 17S	Range 29E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
			L	L			L	

Latitude 32 48.829 Longitude 104 06.269

NATURE OF BRIEASE

Type of Release Produced water	Volume of Release 20bbls	Volume Recovered 19bbls				
Source of Release Water tank	Date and Hour of Occurrence	Date and Hour of Discovery				
	01/17/2012	01/17/2012_10:00 p.m.				
Was Immediate Notice Given?	If YES, To Whom?					
LI Yes 🖾 No 🖾 Not Required						
By Whom?	Date and Hour					
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse.				
🛛 Yes 🖾 No						
If a Waterpaure was Immacted Departies Fully .	_l					
n a watercourse was impacted, Describe runy.						
Describe Cause of Problem and Remedial Action Taken.*		<u></u>				
The water pump wasn't working and in return the water tank ran over. The	e water pump had an electrical failure	e that has been repaired and it has been				
returned to service.						
Describe Area Affected and Cleanup Action Taken.*						
initially 2000 was released from the water tank and we were able to reco	inside the cert home will We have	spill area measured roughly 3' x 30' in				
mont of the water tank inside the lacting. The entire release was contained	e to delineate any possible contemined	ve dug out me spill area, disposed of the				
work also to the NMACD for approval prior to any significant remediation	a to demicate any possible containinat	tion from the recease and we will present a				
work plan to the tamood for approval plot to any significant remodance						
I hereby certify that the information given above is true and complete to the	the best of my knowledge and understa	nd that pursuant to NMOCD rules and				
regulations all operators are required to report and/or file certain release n	otifications and perform corrective act	ions for releases which may endanger				
public heakh or the environment. The acceptance of a C-141 report by the	e NMOCD marked as "Final Report" o	loes not relieve the operator of liability				
should their operations have failed to adequately investigate and remediate	contamination that pose a threat to g	round water, surface water, human health				
or the environment. In addition, NMOCD acceptance of a C-141 report de	oes not relieve the operator of respons	ibility for compliance with any other				
federal, state, or local laws and/or regulations.	-					
10-	OIL CONSERV	ATION DIVISION				
Signature:						
Approved by District Supervisor:						
Printed Name: Josh Russo						
Title: HSE Coordinator	Anneuml Data	Fundamention Descu				
THE. THE CONCERNMENT		CAPURICON DATE:				
E-mail Address: inveso@concharesources.com	Conditions of Annumal					
E-man Address, jrussolatendresourceseden	roughtons of upplicant	Attached 🔲				
Date: 01/31/2012 Phone: 432-212-2399						

* Attach Additional Sheets If Necessary

Form C-141 Revised October 10, 2003

Appendix B

Water Well Data Average Depth to Groundwater (ft) COG - State S-19 Eddy County, New Mexico

29 East

16 South

	16 Sc	outh	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

	17	South		28 East	1
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

	18 S	outh	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

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 Sc	outh	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

	<u>17 So</u>	outh	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 Sc	outh	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

Geology and Groundwater Conditions in Southern Eddy, County, NM

MOCD - Groundwater Data

Field water level

New Mexico Water and Infrastructure Data System

Site Location

17 South 29 East SITE

	18 <u>So</u>	outh	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

Appendix C

Summary Report

Report Date: February 15, 2012

Work Order: 12021025

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

Project Location:	Eddy Co., NM
Project Name:	COG/Tenneco State #1
Project Number:	114-6401230

Date Time Date Taken Taken Sample Description Matrix Received AH-1 0-1' 2012-02-06 00:00 2012-02-10 288858 soil AH-1 1-1.5' 2012-02-06 00:00 2012-02-10 288859 soil 288860 AH-1 2-2.5' soil 2012-02-06 00:002012-02-10 288861 AH-1 3-3.5' soil 2012-02-06 00:00 2012-02-10 288862 AH-1 4-4.5' soil 2012-02-06 00:00 2012-02-10 AH-1 5-5.5' soil 2012-02-06 00:00 2012-02-10 288863 AH-1 6-6.5' soil 2012-02-06 00:002012-02-10 288864AH-2 0-1' 2012-02-06 00:00 2012-02-10 288865soil 288866 AH-2 1-1.5' soil 2012-02-06 00:00 2012-02-10 288867 AH-2 2-2.5' soil 2012-02-06 00:00 2012-02-10 2012-02-06 00:00 2012-02-10 288868 AH-2 3-3.5' soil 00:00 288869 AH-2 4-4.5' soil 2012-02-06 2012-02-10 AH-3 0-1' 2012-02-06 00:00 2012-02-10 288870 soil AH-3 1-1.5' soil 2012-02-06 00:00 2012-02-10 288871

	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)
288858 - AH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	11.5
288865 - AH-2 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	3.12
288870 - AH-3 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	2.36

Sample: 288858 - AH-1 0-1'

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

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: February 1	5, 2012	Work Order: 12021025	Page Number: 2 of	
Sample: 288859 - AH-	1 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 288860 - AH-	-1 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 288861 - AH-	-1 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 288862 - AH-	-1 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 288863 - AH-	-1 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 288864 - AH-	-1 6-6.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 288865 - AH-	2 0-1'			
Param	Flag	Result	Units	RL
Chloride		<200	nıg/Kg	4
Sample: 288866 - AH-	2 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data.

.

Report Date: Februar	y 15, 2012	Work Order: 12021025	Page Number: 3 of	
Sample: 288867 - A	.H-2 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 288868 - A	H-2 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 288869 - A	H-2 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 288870 - A	H-3 0-1'			
Param	Flag	Result	Units	RL
Chloride		313	mg/Kg	4
Sample: 288871 - A	H-3 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		204	mg/Kg	4



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: February 15, 2012

Work Order: 12021025 Charles for the first f

Project Location:Eddy Co., NMProject Name:COG/Tenneco State #1Project Number:114-6401230

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
288858	AH-1 0-1'	soil	2012-02-06	00:00	2012-02-10
288859	AH-1 1-1.5'	soil	2012-02-06	00:00	2012-02-10
288860	AH-1 2-2.5'	soil	2012-02-06	00:00	2012-02-10
288861	AH-1 3-3.5'	soil	2012-02-06	00:00	2012-02-10
288862	AH-1 4-4.5'	soil	2012-02-06	00:00	2012-02-10
288863	AH-1 5-5.5'	soil	2012-02-06	00:00	2012-02-10
288864	AH-1 6-6.5'	soil	2012-02-06	00:00	2012-02-10
288865	AH-2 0-1'	soil	2012-02-06	00:00	2012-02-10
288866	AH-2 1-1.5'	soil	2012-02-06	00:00	2012-02-10
288867	AH-2 2-2.5'	soil	2012-02-06	00:00	2012-02-10
288868	AH-2 3-3.5'	soil	2012-02-06	00:00	2012-02-10
288869	AH-2 4-4.5'	soil	2012-02-06	00:00	2012-02-10
288870	AH-3 0-1'	soil	2012-02-06	00:00	2012-02-10
288871	AH-3 1-1.5'	soil	2012-02-06	00:00	2012-02-10

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

This report consists of a total of 25 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael april

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

Report Contents

Case Narrative	5
Analytical Report	6
Sample 288858 (AH-1 0-1')	6
Sample 288859 (AH-1 1-1.5')	7
Sample 288860 (AH-1 2-2.5')	7
Sample 288861 (AH-1 3-3.5')	8
Sample 288862 (AH-1 4-4.5')	8
Sample 288863 (AH-1 5-5.5')	8
Sample 288864 (AH-1 6-6.5')	9
Sample 288865 (AH-2 0-1')	9
Sample 288866 (AH-2 1-1.5')	10
Sample 288867 (AH-2 2-2.5')	11
Sample 288868 (AH-2 3-3.5')	11
Sample 288869 (AH-2 4-4.5')	11
Sample 288870 (AH-3 0-1')	11
Sample 288871 (AH-3 1-1.5')	13
Method Blanks	14
QC Batch 88517 - Method Blank (1)	14
QC Batch 88543 - Method Blank (1)	14
QC Batch 88547 - Method Blank (1)	14
QC Batch 88567 - Method Blank (1)	15
QC Batch 88568 - Method Blank (1)	15
Laboratory Control Spikes	16
OC Batch 88517 - LCS (1)	16
OC Batch 88543 - LCS (1)	16
OC Batch 88547 - LCS (1)	17
OC Batch 88567 - LCS (1)	17
OC Batch 88568 - LCS (1)	17
OC Batch 88517 - MS (1)	18
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Case Narrative

Samples for project COG/Tenneco State #1 were received by TraceAnalysis, Inc. on 2012-02-10 and assigned to work order 12021025. Samples for work order 12021025 were received intact at a temperature of 5.9 C.

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

		Prep	Prep	$\rm QC$	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	75170	2012-02-13 at 08:45	88547	2012-02-13 at 14:52
Chloride (Titration)	SM 4500-Cl B	75143	2012-02-10 at 13:39	88567	2012-02-14 at 14:01
Chloride (Titration)	SM 4500-Cl B	75143	2012-02-10 at 13:39	88568	2012-02-14 at 14:02
TPH DRO - NEW	S 8015 D	75146	2012-02-13 at 15:03	88517	2012-02-13 at 15:05
TPH GRO	S 8015 D	75170	2012-02-13 at 08:45	88543	2012-02-13 at 14:52

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 12021025 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: February 15, 2012 114-6401230 Work Order: 12021025 COG/Tenneco State #1 Page Number: 6 of 25 Eddy Co., NM

Analytical Report

Sample: 288858 - AH-1 0-1'

Laboratory:	Midland									
Analysis:	BTEX		Analytica	al Metho	d: S 80	21B	Prep Me	thod:	S 5035	
QC Batch:	88547		Date Ana	alyzed:	2012	2-02-13		Analyzed	l By:	tc
Prep Batch:	75170		Sample F	Preparatio	on: 2012	2-02-13		Prepared	By:	te
					BL.					
Parameter		Flag	Cert		Result	τ	Jnits	Dilution		RL
Benzene	· · · · ·	υ	1		< 0.0200	mg	/Kg	1		0.0200
Toluene		U	1		< 0.0200	mg	/Kg	1		0.0200
Ethylbenzene		υ	1		< 0.0200	nig	/Kg	1		0.0200
Xylene		U	1	•	< 0.0200	mg	/Kg	1		0.0200
							Snike	Percent	Rec	overv
Surrogate		Flag	g Cert	Result	Units	Dilution	Amount	Recovery	Li	mits
Trifluorotolue	me (TFT)			2.29	mg/Kg	; 1	2.00	114	75 -	135.4
4-Bromofluor	obenzene (4-BFB)			2.00	mg/Kg	; 1	2.00	100	63.6	- 158.9
Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Midland Chloride (Titration 88567 75143	l) Flag	Ana Dato Sam Cert	lytical M e Analyza ple Prep	lethod: ed: aration: RL Result	SM 4500-Cl 2012-02-14 2012-02-10	B	Prep M Analyz Prepare	fethod: ed By: ed By:	N/A AR AR BL
Chloride	· · · · · · · · · · · · · · · · · · ·	U 100			<200	 ing	/Kg	50		4.00
Sample: 288 Laboratory: Analysis: QC Batch: Prep Batch:	3858 - AH-1 0-1' Midland TPH DRO - NEW 88517 75146		Ana Dat Sar	alytical M te Analyz nple Prej	Aethod: zed: paration:	S 8015 D 2012-02-13 2012-02-13		Prep M Analyz Prepare	lethod: ed By: ed By:	N/A DA DA
Paramotor		Flan	Cont		KL Bosult	т	nite	Dibition		זמ
DRO		LIUE			<50.0	U	/Ka			<u></u>
			i			mg	/118	1	· · ··	00.0

Report Date: 114-6401230	2	Work Order: 12021025 COG/Tenneco State #1							Page Number: 7 of 25 Eddy Co., NM		
Surrogate	Flag	Cert	I	Result	Units	Dilu	tion	Spike Amount		Percent Recovery	Recovery Limits
n-Tricosane				101	mg/Kg			100		101	49.3 - 157.5
Sample: 288	858 - AH-1 0-1'										
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 88543 75170			Analytic Date Ar Sample	cal Method nalyzed: Preparatio	: S 80 2012 n: 2012	915 D 2-02-13 2-02-13			Prep Met Analyzed Prepared	bhod: S 5035 By: tc By: tc
						RL					
Parameter		Flag		Cert]	Result		Units		Dilution	RL
GRO				1		11.5		mg/Kg		1	2.00
								Spil	ke	Percent	Recovery
Surrogate			Flag	Cert	Result	Units	Diluti	on Amo	unt	Recovery	Limits
Trifluorotoluei	ne (TFT)				2.03	mg/Kg	1	2.0	0	102	58.5 - 155.1
4-Bromofluoro	benzene (4-BFB)				2.04	mg/Kg	1	2.0	0	102	45.1 - 162.2

Sample: 288859 - AH-1 1-1.5'

Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88567	Date An	alyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:		2012-02-10	Prepared By:	AR.
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride	υ		<200	mg/Kg	50	4.00

Sample: 288860 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88567	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR

continued ...

114-6401230	: February 15, 2012	Work Order: 12021025 COG/Tenneco State #1			12 Work Order: 12021025 Page Number: 8 of 25 COG/Tenneco State #1 Eddy Co., NM		
sample 28886	60 continued						
			RL				
Parameter	Flag	Cert	Result	Units	Dilution	RL	
			RL				
Parameter	Flag	Cert	Result	Units	Dilution	RL	
				/17/	50	4.00	
Chloride	8861 - AH-1 3-3.5'		<200	mg/Kg	00	100	
Chloride Sample: 28 Laboratory: Analysis:	8861 - AH-1 3-3.5' Midland Chloride (Titration)	Analytic	<200	mg/Kg SM 4500-Cl B	Prep Method:	N/A	
Chloride Sample: 28 Laboratory: Analysis: QC Batch:	8861 - AH-1 3-3.5' Midland Chloride (Titration) 88567	Analytic Date Ar	<200 al Method: alyzed:	mg/Kg SM 4500-Cl B 2012-02-14	Prep Method: Analyzed By:	N/A AR	
Chloride Sample: 28 Laboratory: Analysis: QC Batch: Prep Batch:	8861 - AH-1 3-3.5' Midland Chloride (Titration) 88567 75143	Analytic Date Ar Sample	<200 cal Method: nalyzed: Preparation:	mg/Kg SM 4500-Cl B 2012-02-14 2012-02-10	Prep Method: Analyzed By: Prepared By:	N/A AR AR	
Chloride Chloride Sample: 288 Laboratory: Analysis: QC Batch: Prep Batch:	8861 - AH-1 3-3.5' Midland Chloride (Titration) 88567 75143	Analytic Date Ar Sample	<200 al Method: alyzed: Preparation: RL	mg/Kg SM 4500-Cl B 2012-02-14 2012-02-10	Prep Method: Analyzed By: Prepared By:	N/A AR AR	
Chloride Chloride Sample: 284 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter	9 8861 - AH-1 3-3.5' Midland Chloride (Titration) 88567 75143 Flag	Analytic Date Ar Sample Cert	<200 al Method: alyzed: Preparation: RL Result	mg/Kg SM 4500-Cl B 2012-02-14 2012-02-10 Units	Prep Method: Analyzed By: Prepared By: Dilution	N/A AR AR RL	

Sample: 288862 - AH-1 4-4.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 88567 75143	Analytic Date An Sample I	al Method: alyzed: Preparation:	SM 4500-Cl B 2012-02-14 2012-02-10	Prep Method: Analyzed By: Prepared By:	N/A AR AR
			\mathbf{RL}			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride	υ		<200	mg/Kg	50	4.00

Sample: 288863 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88567	Date Analyzed:	2012-02-14	Analyzed By:	AR.
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR.

Report Date: Februa 114-6401230	ry 15, 2012	Wa C()	ork Order: 12021(G/Tenneco State	Page Numb Eddy	er: 9 of 25 7 Co., NM	
Doromator	Flag	Cart	RL Bosult	Unite	Dilution	BL.
1. 91 91 Heret	гад	Cert	TUESTIL	Omus	Difference	T/'T
Chloride	Ų		<200	mg/Kg	50	4.00

Sample: 288864 - AH-1 6-6.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Laboratory: Midland Analysis: Chloride (Titration) QC Batch: 88567 Prep Batch: 75143		tical Method: Analyzed: le Preparation:	SM 4500-Cl B 2012-02-14 2012-02-10	Prep Method: Analyzed By: Prepared By:	N/A AR AR
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			<200	mg/Kg	50	4.00

Sample: 288865 - AH-2 0-1'

Laboratory:	Midland								
Analysis:	BTEX		Analytica	al Method	l: S 8021	lB		Prep Met	hod: S 5035
QC Batch:	88547		Date An	alyzed:	2012-(2012-02-13			By: tc
Prep Batch:	75170		Sample I	Preparatio	on: 2012-0	02-13		Prepared	By: tc
					RL				
Parameter		Flag	Cert		Result	U	nits	Dilution	RL
Benzene		U	1		< 0.0200	mg	′Kg	1	0.0200
Toluene		υ	ı		< 0.0200	mg/	'Kg	1	0.0200
Ethylbenzene	2	U	1		< 0.0200	mg	′Kg	1	0.0200
Xylene		U	1		< 0.0200	mg	′Kg	1	0.0200
							Spike	Percent	Recovery
Surrogate		Flag	g Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ene (TFT)	··-		2.63	mg/Kg	1	2.00	132	75 - 135.4
4-Bromofluor	obenzene (4-BFB)			2.11	mg/Kg	1	2.00	106	63.6 - 158.9

Sample: 288865 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88567	Date Analyzed:	2012-02-14	Analyzed By:	AR
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR.

Report Date: February 15, 2012 114-6401230		Wo COO	rk Order: 120210 G/Tenneco State	Page Number: 10 of 25 Eddy Co., NM		
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U		<200	mg/Kg	50	4.00

Sample: 288865 - AH-2 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	atory: Midland sis: TPH DRO - NEW atch: 88517 Batch: 75146		Ana Dat San	Analytical Method: Date Analyzed: Sample Preparation:			5 D 92-13 92-13	Prep Method: Analyzed By: Prepared By:		N/A DA DA	
						\mathbf{RL}					
Parameter			Flag	Cert		Result		Units	Dilution		RL
DRO				ł		<50.0		mg/Kg	1		50.0
Surrogate	F	lag	Cert	Result	Units	Dilu	ition	Spike Amount	Percent Recovery	Reco Lin	very nits
n-Tricosane				114	mg/Kg		1	100	114	49.3 -	157.5

Sample: 288865 - AH-2 0-1'

Laboratory:	Midland				136.0				D		
Analysis:	TPH GRO			Analytic	cal Metho	od: Sa	3015-D		Prep Met	thod: A	S 5035
QC Batch:	88543			Date Ai	nalyzed:	20	12-02-13		Analyzed	lBy: 1	te
Prep Batch:	75170			Sample	Preparat	ion: 20	12-02-13		Prepared	Prepared By: to	
						RL					
Parameter		Flag		Cert		Result		Units	Dilution		RL
GRO				1		3.12]	mg/Kg	1		2.00
								Spike	Percent	Reco	overy
Surrogate			Flag	Cert	Result	Units	Dilutio	on Amount	Recovery	Lin	nits
Trifluorotolue	ene (TFT)				2.32	mg/Kg	g 1	2.00	116	58.5 -	155.1
4-Bromofluor	obenzene (4-BFB)				2.27	mg/K_{i}	g 1	2.00	114	45.1 -	- 162.2

Sample: 288866 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88567	Date Analyzed:	2012-02-14	Analyzed By:	AR.
Prep Batch:	75143	Sample Preparation:	2012-02-10	Prepared By:	AR.

Report Date: Februar 114-6401230	ry 15, 2012	Wo CO	rk Order: 120210 G/Tenneco State	Page Number: 11 of 25 Eddy Co., NM		
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U		<200	mg/Kg	50	4.00

Sample: 288867 - AH-2 2-2.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 88568 75143	Analy Date Samp	ytical Method: Analyzed: ble Preparation:	SM 4500-Cl B 2012-02-14 2012-02-10	Prep Method: Analyzed By: Prepared By:	N/A AR AR
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride	U		<200	ıng/Kg	50	4.00

Sample: 288868 - AH-2 3-3.5'

Chloride	υ		<200	mg/Kg	50	4.00
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Prep Batch: 75143		Sample 1	Sample Preparation:		Prepared By:	AR
QC Batch:	88568	Date Analyzed:		2012-02-14	Analyzed By:	AR.
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland					

Sample: 288869 - AH-2 4-4.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Laboratory: Midland Analysis: Chloride (Titration) QC Batch: 88568 Prep Batch: 75143		tical Method: Analyzed: e Preparation:	SM 4500-Cl B 2012-02-14 2012-02-10	Prep Method: Analyzed By: Prepared By:	N/A AR AR
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride	U		<200	mg/Kg	50	4.00

Report Date: February 15, 2012 114-6401230		Work Order: 12021025 COG/Tenneco State #1					Page Number: 12 of 25 Eddy Co., NM		
Sample: 288870 - AH-3 0-1'									
Laboratory: Midland Analysis: BTEX QC Batch: 88547 Prep Batch: 75170		Analytica Date Ana Sample P	al Metho alyzed: 'reparati	d: S 8021 2012-0 on: 2012-0	LB)2-13)2-13		Prep Met Analyzed Prepared	hod: S 5035 By: tc By: tc	
				RL					
Parameter	Flag	Cert		Result	Uı	nits	Dilution	RL	
Benzene	υ	1		< 0.0200	mg/	'Kg	1	0.0200	
Toluene	υ	ı		< 0.0200	mg/	'Kg	1	0.0200	
Ethylbenzene	U	1		< 0.0200	mg/	'Kg	1	0.0200	
Xylene		1		<0.0200	mg/	Kg	1	0.0200	
						Spike	Percent	Recovery	
Surrogate	\mathbf{F} la	ag Cert	Result	Units	Dilution	Amount	Recovery	Limits	
Triffuorotoluene (TFT)			2.43	mg/Kg	1	2.00	122	75 - 135.4	
4-Bromofluorobenzene (4-BFB)			1.89	mg/Kg	1	2.00	94	63.6 - 158.9	

Sample: 288870 - AH-3 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Laboratory: Midland Analysis: Chloride (Titration) QC Batch: 88568 Prep Batch: 75143		al Method: alyzed: Preparation:	SM 4500-Cl B 2012-02-14 2012-02-10	Prep Method: Analyzed By: Prepared By:	N/A AR. AR.
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride			313	mg/Kg	50	4.00

Sample: 288870 - AH-3 0-1'

n-Tricosane			104	mg/Kg	1	100	104	49.3 -	157.5
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recov Lim	/ery its
DRO			1		<50.0	mg/Kg	1		50.0
Parameter		Flag	Cert		RL Result	Units	Dilution		RL
QC Batch: Prep Batch:	88517 75146		Da: Sai	te Analyze nple Prepa	ed: 201 aration: 201	2-02-13 2-02-13	Analyz Prepar	ed By: ed By:	DA DA
Laboratory: Analysis:	Midland TPH DRO - NI	EW	An	alytical M	ethod: S 80)15 D	Prep M	lethod:	N/A

Report Date: February 15, 2012 114-6401230					Work O COG/Te	rder: 1202 enneco Stat		Page Number: 13 of 25 Eddy Co., NM			
Sample: 28	8870 - AH-3 0-1'										
Laboratory: Midland Analysis: TPH GRO QC Batch: 88543 Prep Batch: 75170			Analytical Method:S 8015 DDate Analyzed:2012-02-13Sample Preparation:2012-02-13						Prep Method: S 50 Analyzed By: tc Prepared By: tc		
						RL					
Parameter		Flag		Cert		Result	U	uits	Dilution	RL	
GRO				1		2.36	mg/	′Kg	1	2.00	
								Spike	Percent	Recovery	
Surrogate			Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits	
Trifluorotolue	ene (TFT)				2.16	mg/Kg	1	2.00	108	58.5 - 155.1	
4-Bromofluorobenzene (4-BFB)					2.05	mg/Kg	1	2.00	102	45.1 - 162.2	

Sample: 288871 - AH-3 1-1.5'

Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	88568	Date Ana	alyzed:	2012-02-14	Analyzed By:	\mathbf{AR}
Prep Batch:	ep Batch: 75143		Preparation:	2012-02-10	Prepared By:	\mathbf{AR}
			\mathbf{RL}			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			204	mg/Kg	50	4.00

Report Date: February 15, 2012 114-6401230 Work Order: 12021025 COG/Tenneco State #1

Method Blanks

Method Bla	ank (1)	QC E	Batch: 885	17					
QC Batch:	88517			Date	Analyzed:	2012-02-13		Analy	zed By: DA
Prep Batch:	75146			QC I	Preparation:	2012-02-13		Prepa	red By: DA
							MDL		
Parameter			\mathbf{Fla}	ag	Cert		Result	Units	RL
DRO					1		39.1	mg/Kg	50
							Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilutio	n Amount	Recovery	Limits
n-Tricosane				100	mg/Kg	1	100	100	52 - 140.8

Method Blank (1) QC Batch: 88543

QC Batch: 88543 Prep Batch: 7517()			Date A QC Pr	Date Analyzed: QC Preparation:		3 3	Analyzed By: Prepared By:			tc tc
Parameter		Flag		Cert		MDL Result		Units		\mathbf{RL}
GRO				1		<1.22		mg/Kg		2
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recov Lim	very its
Trifluorotolue	ene (TFT)			2.08	mg/Kg	1	2.00	104	78.6 -	109
4-Bromofluor	obenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	58 -	100

Method Blank (1) QC Batch: 88547

QC Batch:	88547		Date Analyzed:	2012-02-13	A	nalyzed By: tc
Prep Batch:	75170		QC Preparation:	2012-02-13	Pr	repared By: tc
				MDI		
Parameter		Flag	Cert	Resul	Units	RL
Benzene			1	< 0.00470) mg/Kg	0.02
Toluene			1	< 0.00980) mg/Kg	0.02
				4		

continued

Report Date: February 15, 2012 114-6401230			Work Or COG/Ter	Page Number: 15 of Eddy Co., N					
method blank continued					MDI				
Parameter	Flag		Cert		Result		Units		\mathbf{RL}
Ethylbenzene	0	~~~~	1		< 0.00500		mg/Kg		0.02
Xylene			1		< 0.0170		mg/Kg		0.02
						Spike	Percent	Reco	very
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Lin	nits
Trifluorotoluene (TFT)			2.35	mg/Kg	1	2.00	118	78 - 1	23.6
4-Bromofiuorobenzene (4-BFB)			1.((mg/Kg	1	2.00	88	55.9 -	112.4
Method Blank (1) QC Batch:	88567								
QC Batch: 88567		Date A	Analyzed:	2012-02-1	14		Analyz	zed By:	\mathbf{AR}
Prep Batch: 75143		QC Pr	eparation:	2012-02-1	10		Prepar	ed By:	AR.
					MDL				
Parameter	Flag		Cert		Result		Units		RL
Chloride					<3.85		mg/Kg		4
Method Blank (1) QC Batch:	88568								
		·	, ,	0010 00 1					4.75
Prep Batch: 75143		QC Pr	eparation:	2012-02-1 2012-02-1	14 10		Analyz Prepai	ed By:	AR AR
					MDL				
Parameter	Flag		Cert		Result		Units		\mathbf{RL}
Chloride					<3.85		mg/Kg		4

Report Date: February 15, 2012 114-6401230

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

.

QC Batch: 88517 Prep Batch: 75146		Date QC I	Analyze Preparati	d: 20 on: 20	12-02-13 12-02-13			Analy Prepa	vzed By ared By:	DA DA
			LCS			Spike	Ma	atrix		Rec.
Param	F	C F	lesult	Units	Dil.	Amount	Re	sult Rec	. I	imit
DRO		1	244	mg/Kg	; 1	250	<	14.5 98	62	- 128.3
Percent recovery is based on the	spike rest	ılt. RPD	is based	on the s	spike and	spike dupli	cate re	sult.		
		LCSD			Spike	Matrix		Rec.		RPD
Param	F C	Result	Units	Dil.	Amoun	Result	Rec.	Limit	RPD	Limit
DRO	ı	236	mg/Kg	; 1	250	<14.5	94	62 - 128.3	3	20
Percent recovery is based on the	spike rest	ılt. RPD	is based	on the	spike and	spike dupli	cate re	sult.		
	LCS	LCSD				Spike	LCS	LCSD	F	lec.
Surrogate	Result	Result	Uı	nits	Dil.	Amount	Rec.	Rec.	Li	mit
n-Tricosane	104	104	mg	/Kg	1	100	104	104	58.6	- 149.6
QC Batch: 88543 Prep Batch: 75170		Date QC	e Analyz Preparat .CS	ed: 20 5ion: 20)12-02-13)12-02-13	Spike	Mat	Ana Prej rix	lyzed B bared B F	y: tc y: tc lec.
Param	F	C R	esult	Units	Dil.	Amount	Res	ult Rec.	L	mit
GRO	1	ı 1	8.7	mg/Kg	1	20.0	<1.	22 94	68.3	- 105.7
Percent recovery is based on the	spike rest	ılt. RPD	is based	on the	spike and	spike dupli	cate re	sult.		
		LCSD			Spike	Matrix		Rec.		RPD
Param	F C	Result	Units	Dil.	$A \operatorname{mount}$	Result	Rec.	Limit	RPD	Limit
GRO	1	18.6	mg/Kg	1	20.0	<1.22	93 (68.3 - 105.7	0	20
Percent recovery is based on the	spike resu	ılt. RPD	is based	on the	spike and	spike dupli	cate re	sult.		
		LCS	S LCS	SD		Spik	e L	CS LCSD	F	lec.
Surrogate		Resu	lt Res	ult U	Inits I	Dil. Amou	int R	ec. Rec.	Li	mit
Trifluorotoluene (TFT)		2.12	2.0)1 m	g/Kg	1 2.00) 1	06 100	80 -	111.2
4-Bromofluorobenzene (4-BFB)		2.10	1.9	6 m	g/Kg	1 2.00) 1	05 98	66.4	- 106.6

Report Date: February 15, 2012 114-6401230		Work Order: 12021025 COG/Tenneco State #1							Page Number: 17 of 25 Eddy Co., NM				
Laboratory Control Spike (L	CS-	1)											
QC Batch: 88547 Prep Batch: 75170			D Q	ate Anal C Prepa	yzed: ration:	2012-02-1 2012-02-1	3 3				Anal Prep	yzed B ared B	y: tc y: tc
				LCS			Sp	ike	Ma	trix		F	lec.
Param		F	C 1	Result	Units	Dil.	Am	ount	Res	sult	Rec.	L	imit
Benzene			1	1.98	mg/Kg	g 1	2.	00	<0.0	0470	99	86.5	- 124.9
Toluene			1	1.99	mg/Kg	g 1	2.	00	<0.0	0980	100	84.7	- 122.5
Ethylbenzene			1	1.98	mg/Ka	g 1	2.	00	<0.0	0500	99	79.4	- 118.9
Xylene			1	5.80	ng/Kg	g 1	6.	00	< 0.0	0170	97	79.5	- 118.9
Percent recovery is based on the	spike	e res	ult. RP	'D is bas	ed on th	ne spike an	d spił	æ dupl	icate r	esult.			
			LCSD			Spike	Μŧ	ıtrix		R	ec.		RPD
Param	F	С	Result	Units	Dil.	Amount	Re	sult	Rec.	Li	\mathbf{mit}	RPD	Limit
Benzene		1	2.17	mg/K	g 1	2.00	<0.0	0470	108	86.5 -	124.9	9	20
Toluene		1	2.20	mg/K	g 1	2.00	<().(0980	110	84.7 -	122.5	10	20
Ethylbenzene		1	2.15	mg/K	g 1	2.00	<0.0)0500	108	79.4 -	118.9	8	20
Xylene		1	6.37	mg/K	g 1	6.00	<0.	0170	106	79.5 -	118.9	9	20
Percent recovery is based on the	spike	e res	ult. RF	'D is bas	ed on th	ne spike an	d spik	æ dupl	icate r	esult.			
			I	LCS	LCSD			S_{D}	ike	LCS	LCSE)	Rec.
Surrogate			R	esult 1	Result	Units	Dil.	Am	ount	Rec.	Rec.	I	Jimit
Trifluorotoluene (TFT)			2	2.32	2.38	mg/Kg	1	2.	00	116	119	73.	9 - 127
4-Bromofluorobenzene (4-BFB)			2	2.05	2.08	mg/Kg	1	2.	00	102	104	70.	4 - 119
Laboratory Control Spike (L QC Batch: 88567 Prep Batch: 75143	CS-	1)	Da Q(ute Analy C Prepar	zed: ation:	2012-02-14 2012-02-1(t)				Analy Prepa	zed By red By:	: AR. AR.
Paran		Ē	C	LCS Bocult	T In	uite Di	1	Spike	e	Matrix	Pa		Rec.
Chloride		Г	<u> </u>	07 0	01	$\frac{1}{K\sigma}$ D		100	<u></u>	<2 85		<u>,</u>	<u>5 - 115</u>
Parcent recovery is based on the	mile		ult DD	D ie bee	ad on th	a enile en	d anil	a durl	icato -				0 - 110
recent recovery is based on the	spike	: 168			eu on th	с эртке ан	a spu	e uupi M	icate f	csuit.			מתח
Danam	D	~	LCS	U 	: T	Spik	e .	Matrix	Th	н . т	lec.	ממח	RPD Linet
raiadi Chlonida	Г		Resu	ut Un	us D	$\frac{\text{H.}}{1}$ Amol	1111	result	Rec			RPD	
Gilonde			104	mg/	ng l	1 100	,	< 3.85	104	4 85	- 115	(20

Report Date: February 15, 20 114-6401230		Work Order: 12021025 COG/Tenneco State #1						Page Number: 18 of 25 Eddy Co., NM			
Laboratory Control Spike	(LCS-1)									
QC Batch: 88568			Date	Analyzed	: 2012	2-()2-14			Anal	yzed B	y: AR
Prep Batch: 75143		QC Preparation: 2012-02-10						Prepared By: AR			
Param		F	СІ	LCS Result	Units	Dil.	Spike Amount	M R	atrix esult R	.ec.	Rec. Limit
Chloride				93.3	mg/Kg	1	100	<	3.85 9)3	85 - 115
Percent recovery is based on t	he spike	resu	it. RPD	is based o	on the sp	ike and sp	oike duplica	ate res	ult.		
			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			105	ing/Kg	1	100	<3.85	105	85 - 115	12	20
Percent recovery is based on t	he spike	resu	lt. RPD	is based o	on the sp	oike and sp	oike duplica	ate res	ult.		

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Matrix Spike (MS-1)	Spiked Sample: 288885	
OCI D-+	Date Anal-mud	0

QC Batch:	88517	Date Analyzed:	2012-02-13	Analyzed By:	DA
Prep Batch:	75146	QC Preparation:	2012-02-13	Prepared By:	DA

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1	254	ing/Kg	1	250	<14.5	102	45.5 - 127
Porcont recovery is based	on the suite res	ult R	PD in home	d on the en	iko ond	eniko dunliar	to rocult		

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	232	mg/Kg	1	250	<14.5	93	45.5 - 127	9	20
Percent recovery is based on the	e spike	rest	ılt. RPD	is based o	on the	spike and s	spike dupl	icate re	esult.		

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	\mathbf{Limit}
n-Tricosane	104	92.1	mg/Kg	1	100	104	92	45.4 - 145.8

Matrix Spil	ke (MS-1)	Spiked Sample: 288885			
QC Batch:	88543	Date Analyzed:	2012-02-13	Analyzed By:	tc
Prep Batch:	75170	QC Preparation:	2012-02-13	Prepared By:	\mathbf{tc}

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Param		F	С	MS Result	Units	Dil.	Spil Amo	ke N unt I	Aatrix Result	Rec.	I L	Rec. imit
GRO			1	14.2	mg/Kg	g 1	20.	0 4	<1.22	68	28.2	- 157.2
Percent recovery is based on the sp Param	piko F	c resi	nlt. RP MSD Result	D is base Units	d on the Dil.	spike an Spike Amount	d spike o Matr : Resu	luplicate ix lt Rec.	result. R Li	lec. imit	RPD	RPD Limit
GRO		1	16.1	mg/K	<u>g 1</u>	20.0	<1.2	2 77	28.2	- 157.2	12	
Percent recovery is based on the sp	oike	e resi	ult. RP	D is base	d on the (SD	spike an	d spike o	luplicate Spike	result. MS	MSD	F	Rec.
Surrogate			Re	sult R	esult	Units	Dil.	Amount	Rec.	Rec.	L	imit
Trifluorotoluene (TFT)			2	.36 2	2.60	ng/Kg	1	2	118	130	75.5	- 122.3
4-Bromofluorobenzene (4-BFB)			2	.28 2	2.51 1	ng/Kg	• 1	2	114	126	77.9	- 122.4

Matrix Spike (MS-1) Spiked Sample: 288887

QC Batch:	88547	Date Analyzed:	2012-02-13	Analyzed By:	tc
Prep Batch:	75170	QC Preparation:	2012-02-13	Prepared By:	\mathbf{tc}

			MS			Spike	Matrix		Rec.
Param	F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	1.93	mg/Kg	1	2.00	< 0.00470	96	69.3 - 159.2
Toluene		1	2.04	mg/Kg	1	2.00	< 0.00980	102	68.7 - 157
Ethylbenzene		1	2.13	mg/Kg	1	2.00	< 0.00500	106	71.6 - 158.2
Xylene		I	6.25	mg/Kg	1	6.00	< 0.0170	104	70.8 - 159.8

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

			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	1.87	mg/Kg	1	2.00	< 0.00470	94	69.3 - 159.2	3	20
Toluene		1	1.97	mg/Kg	1	2.00	< 0.00980	98	68.7 - 157	4	20
Ethylbenzene		1	2.10	mg/Kg	1	2.00	< 0.00500	105	71.6 - 158.2	1	20
Xylene		t	6.12	mg/Kg	1	6.00	< 0.0170	102	70.8 - 159.8	2	20

	MS	MSD	•		Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.51	2.56	mg/Kg	1	2	126	128	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	2.10	2.08	mg/Kg	1	2	105	104	72.6 - 144.1

Report Date: Februar 114-6401230	y 15, 2012				Wor COG]	Page Number: 20 of 25 Eddy Co., NM						
Matrix Spike (MS-1) Spiked	l Sa	mple	e: 2888(66								
QC Batch: 88567				Da	te Analyz	ed: 20)12-02-14				Analy	zed By:	AR
Prep Batch: 75143				Q	C Preparat	tion: 20)12-02-10				Prepa	red By:	AR.
					MS			Spike	M٤	ıtrix		R	.ec.
Param			F	С	Result	Units	Dil.	Amount	Re	sult	Rec.	Li	mit
Chloride					10100	mg/Kg	100	10000	<	385	101	79.4	- 120.6
Percent recovery is bas	ed on the s	piko	e res	ult. RP	D is based	l on the	spike and	spike dup	licate r	esult.			
				MSD			Spike	Matrix		R	lec.		RPD
Param		\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Li	imit	RPD	Limit
Chloride				10800	mg/Kg	100	10000	<385	108	79.4	- 120.6	7	20
Matrix Spike (MS-1) Spiked	l Sa	mple	e: 28887	⁷ 6		- P	clinn gob					
OC Batch 88568				Do	to Analyz	od 20	19-09-14				Analı	and Bu	٨R
Prep Batch: 75143				QC	C Preparat	ion: 20)12-02-14				Prepa	red By:	AR.
					MS			Spike	Ma	atrix		R	lec.
Param			F	С	Result	Units	Dil.	Amount	Re	sult	Rec.	Li	mit
Chloride					9890	ıng/Kg	100	10000	<	385	99	79.4	- 120.6
Percent recovery is bas	ed on the s	piko	e res	ult. RP	D is based	l on the	spike and	spike dup	licate 1	esult.			
				MSD			Spike	Matrix		F	Rec.		RPD
Param		F	С	Result	: Units	Dil.	Amount	Result	Rec.	\mathbf{L} i	imit	RPD	Limit
Chloride				10600	mg/Kg	100	10000	<385	106	79.4	- 120.6	7	20

Report Date: February 15, 2012 114-6401230 Work Order: 12021025 COG/Tenneco State #1

Calibration Standards

Standard (CCV-1)

QC Batch:	88517		Date	Analyzed:	2012-02-13		Analy	zed By: DA
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Fla	ıg Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	nıg/Kg	250	245	98	80 - 120	2012-02-13

Standard (CCV-2)

QC Batch:	88517			Date .	Analyzed:	2012-02-13		Analy	zed By: DA
					CCVs	CCVs	CCVs	Percent	D .
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO			1	mg/Kg	250	242	97	80 - 120	2012-02-13

Standard (CCV-3)

QC Batch:	88517			Date .	Analyzed:	2012-02-13		Analy	zed By: DA
			_		CCVs Truė	CCVs Found	CCVs Percent	Percent Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO			1	mg/Kg	250	260	104	80 - 120	2012-02-13

Standard (CCV-1)

QC Batch:	88543			Date	Analyzed:	2012-02-13		Anal	lyzed By: tc
Danam		Elam	Claut	Inite	CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param		riag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO			1	mg/Kg	1.00	1.09	109	80 - 120	2012-02-13

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Standard	(CCV-2)													
QC Batch:	88543			Date .	Analyzed:	2012-02-13		Anal	yzed By: tc					
Param	Flag	C	ert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed					
GRO)	mg/Kg	1.00	1.07	107	80 - 120	2012-02-13					
Standard	(CCV-3)													
QC Batch:	88543			Date	Analyzed:	2012-02-13		Anal	yzed By: tc					
Param	Flag	C	erf	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed					
GRO	0		1	mg/Kg	1.00	1.14	114	80 - 120	2012-02-13					
Standard QC Batch:	(CCV-1) 88547			Date 2	Analyzed:	2012-02-13		Ana	yzed By: tc					
Param		Flag	Cert	Units	CCVs True Conc	s CCVs Found . Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed					
Benzene		0		mg/kg	0.100	0.102	102	80 - 120	2012-02-13					
Toluene			1	mg/kg	0.100	0.103	103	80 - 120	2012-02-13					
Ethylbenze	ne		1	mg/kg	0.100	0.101	101	80 - 120	2012-02-13					
Xylene			1	mg/kg	0.300	0.299	100	80 - 120	2012-02-13					

Standard (CCV-2)

QC Batch:	88547			Date An	alyzed: 20	12-02-13		Anal	yzed By: tc
QC Batch: 88 Param Benzene Toluene Ethulhonzene					CCVs	CCVs Formed	CCVs	Percent	Dite
					True	round	Percent	recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene			1	mg/kg	0.100	0.102	102	80 - 120	2012-02-13
Toluene			1	mg/kg	0.100	0.103	103	80 - 120	2012-02-13
Ethylbenzer	e		1	mg/kg	0.100	0.0991	99	80 - 120	2012-02-13
Xylene			1	mg/kg	0.300	0.289	96	80 - 120	2012-02-13

114-6401230	ruary 15, 201		(COG/Tenne		Eddy Co., N							
Standard (CCV-	-3)												
QC Batch: 88547	,		Date A	nalyzed: 20	012-02-13		Ana	lyzed By:					
				CCVs	CCVs	CCVs	Percent						
				True	Found	Percent	Recovery	Date					
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyze					
Benzene		1	mg/kg	0.100	0.110	110	80 - 120	2012-02-					
Toluene		1	mg/kg	0.100	0.106	106	80 - 120	2012-02-					
Ethylbenzene		a -	mg/kg	0.100	0.102	102	80 - 120	2012-02-					
Xylene		1	mg/kg	0.300	0.304	101	80 - 120	2012-02-					
Standard (ICV-1	1)												
QC Batch: 88567	,		Date An	nalyzed: 20	12-02-14		Analy	zed By: A					
				1011	TCILI								
				ICVs	ICVS	ICVS	Percent	Dette					
				1 2022	Found	Percent	Recovery	Date					
D		<u>a</u> .	TT	True Com	<i>C</i>	D	T 2-0- 14 m	A					
Param Chloride	Flag	Cert	Units mg/Kg	Conc. 100	Conc. 99.4	Recovery 99	Limits 85 - 115	Analyzo 2012-02-					
Param Chloride	Flag	Cert	Units mg/Kg	Conc.	Conc. 99.4	Recovery 99	Limits 85 - 115	Analyza 2012-02-					
Param Chloride Standard (CCV-	Flag -1)	Cert	Units mg/Kg	Conc. 100	Conc. 99.4	Recovery 99	Limits 85 - 115	Analyza 2012-02-					
Param Chloride Standard (CCV- QC Batch: 88567	Flag -1)	Cert	Units mg/Kg Date Ar	Conc. 100 nalyzed: 20	Conc. 99.4	Recovery 99	Limits 85 - 115 Analy	Analyzc 2012-02- zed By: A					
Param Chloride Standard (CCV- QC Batch: 88567	Flag -1)	Cert	Units mg/Kg Date Ar	nue Conc. 100 nalyzed: 20 CCVs	Conc. 99.4	Recovery 99 CCVs	Limits 85 - 115 Analy Percent	Analyzc 2012-02- zed By: A					
Param Chloride Standard (CCV- QC Batch: 88567	Flag -1)	Cert	Units mg/Kg Date Ar	nue Conc. 100 nalyzed: 20 CCVs True	Conc. 99.4 012-02-14 CCVs Found	Recovery 99 CCVs Percent	Limits 85 - 115 Analy Percent Becovery	Analyzc 2012-02- zed By: A Date					
Param Chloride Standard (CCV- QC Batch: 88567 Param	Flag -1)	Cert	Units mg/Kg Date Ar	nalyzed: 20 CCVs True Conc	Conc. 99.4 012-02-14 CCVs Found Conc.	Recovery 99 CCVs Percent Recovery	Limits 85 - 115 Analy Percent Recovery Limits	Analyzc 2012-02- zed By: A Date Analyzc					
Param Chloride Standard (CCV- QC Batch: 88567 Param Chloride	Flag -1)	Cert	Units mg/Kg Date Ar Units mg/Kg	nalyzed: 20 CCVs True Conc. 100	Conc. 99.4 012-02-14 CCVs Found Conc. 101	Recovery 99 CCVs Percent Recovery 101	Limits 85 - 115 Analy Percent Recovery Limits 85 - 115	Analyza 2012-02- zed By: A Date Analyza 2012-02-					
Param Chloride Standard (CCV- QC Batch: 88567 Param Chloride	Flag -1) Flag	Cert	Units mg/Kg Date An Units mg/Kg	nalyzed: 20 CCVs True Conc. 100	Conc. 99.4 012-02-14 CCVs Found Conc. 101	Recovery 99 CCVs Percent Recovery 101	Limits 85 - 115 Analy Percent Recovery Limits 85 - 115	Analyze 2012-02- zed By: A Date Analyze 2012-02-					
Param Chloride Standard (CCV- QC Batch: 88567 Param Chloride Standard (ICV-1	Flag -1) - Flag 1)	Cert	Units mg/Kg Date An Units mg/Kg	nalyzed: 20 CCVs True Conc. 100	Conc. 99.4 012-02-14 CCVs Found Conc. 101	Recovery 99 CCVs Percent Recovery 101	Limits 85 - 115 Analy Percent Recovery Limits 85 - 115	Analyze 2012-02- zed By: A Date Analyze 2012-02-					
Param Chloride Standard (CCV- QC Batch: 88567 Param Chloride Standard (ICV-1 QC Batch: 88568	Flag -1) , Flag 1)	Cert	Units mg/Kg Date An Units mg/Kg Date An	nalyzed: 20 CCVs True Conc. 100	Conc. 99.4 012-02-14 CCVs Found Conc. 101	Recovery 99 CCVs Percent Recovery 101	Limits 85 - 115 Analy Percent Recovery Limits 85 - 115 Analy	Analyze 2012-02- zed By: A Date Analyze 2012-02- zed By: A					
Param Chloride Standard (CCV- QC Batch: 88567 Param Chloride Standard (ICV-1 QC Batch: 88568	Flag -1) , Flag 1)	Cert	Units mg/Kg Date An Units mg/Kg Date An	nalyzed: 20 CCVs True Conc. 100 alyzed: 20 ICVs	Conc. 99.4 99.4 012-02-14 CCVs Found Conc. 101 012-02-14 ICVs	Recovery 99 CCVs Percent Recovery 101	Limits 85 - 115 Analy Percent Recovery Limits 85 - 115 Analy Percent	Analyze 2012-02- zed By: A Date Analyze 2012-02- zed By: A					
Param Chloride Standard (CCV- QC Batch: 88567 Param Chloride Standard (ICV-1 QC Batch: 88568	Flag -1) , Flag 1)	Cert	Units mg/Kg Date An Units mg/Kg Date An	nalyzed: 20 CCVs True Conc. 100 alyzed: 20 ICVs True	Conc. 99.4 99.4 012-02-14 CCVs Found Conc. 101 012-02-14 ICVs Found	Recovery 99 CCVs Percent Recovery 101 ICVs Percent	Limits 85 - 115 Analy Percent Recovery Limits 85 - 115 Analy Percent Recovery	Analyze 2012-02- zed By: A Date Analyze 2012-02- zed By: A Date					
Param Chloride Standard (CCV- QC Batch: 88567 Param Chloride Standard (ICV-1 QC Batch: 88568 Param	Flag -1) , Flag 1)	Cert Cert	Units mg/Kg Date Ar Units mg/Kg Date Ar Units	Arue Conc. 100 100 Małyzed: 20 CCVs True Conc. 100 ICVs True Conc.	Conc. 99.4 99.4 012-02-14 CCVs Found Conc. 101 012-02-14 ICVs Found Conc.	Recovery 99 CCVs Percent Recovery 101 ICVs Percent Recovery	Limits 85 - 115 Analy Percent Recovery Limits 85 - 115 Analy Percent Recovery Limits	Analyzz 2012-02- zed By: A Date Analyzz zed By: A Date Analyzz					

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Report Date: H 114-6401230	February 15, 20	12		Work Orde COG/Tenn	Page Nu	mber: 24 of 25 Eddy Co., NM		
Standard (CC	CV-1)							
QC Batch: 88	568		Date A	nalyzed: 2	012-02-14		Analy	zed By: AR
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	99.7	100	85 - 115	2012-02-14

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Appendix

Report Definitions

NameDefinitionMDLMethod Detection LimitMQLMinimum Quantitation LimitSDLSample Detection Limit

Laboratory Certifications

	Certifying	Certification	Laboratory
\mathbf{C}	Authority	Number	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.

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Ar		sis F	Re	: C	JU	est of Chain o	of Custody	F	le	CC)r(d								PA	GE:)		01.		2
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						TETRATEC 1910 N. Big Spring S Midland, Texas 7970 (432) 682-4559 • Fax (432)	5 682-3946	· · · ·						005 (Ext. to C35)	Cd Cr Ph Ho Se	Cd Vr Pd Hg Se			4	25					, TDS		
	МЕ: Øл					SITE MANAGER:		ERS		PRE N	SER 1ETH	VATIVE IOD		Ĕ	Ë	8			60/62	:9/0/3					s, pH		
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SAMPLE COND	TION WHEN					REMARKS: If total TPHE exceeds SA	coo mg/ky rundaper	· 54.	<u>م</u> ام	./	It	L BTE	ex e pre	<u>ا = 1</u> الانتهام الماني	ls é npl	50,. 75	»Ĵ	kç	01	Ber	~ ? *n	łH	876	5	10 r	5/	²⁵ 2

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

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Analysis F	Analysis Request of Chain of Custody Record									PAGE: Z OF: Z													
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	LIENT NAME: ADV/A TETRATECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946 SITE MANAGER: TV: T:										15 (Ext. to C35)	d Cr Pb Hg Se	d Vr Pd Hg Se								ros		
CLIENT NAME:	TNAME: SITE MANAGER: PRESERVATIVE										TX100	Ba C	Ba			0/625 70/625					s, pH,		
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SAMPLE CONDITION WHEN RECEIVED	PHONE:	REMARKS:		III	ME: _			-			- <u>I</u>										res		NO B

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