SITE INFORMATION

Report Type: Closure Report

			Type: Clo							
General Site Info	rmation:		The second se	in the second	TA MAN					
Site:		RJU South 1								
Company:		COG Operat	ing LLC							
Section, Townsh	ip and Range	Unit C	Sec 35	T17S	R29E					
Lease Number:		API-30-015-0								
County:		Eddy Count								
GPS:			32.79415° N				104.0	5014° W		
Surface Owner:		Federal								
Mineral Owner:	<u></u>									
Directions:		From Hwy 82 and CR213 travel south on CR213 for 1.7 miles, turn left and travel 0.3 miles, turn right and travel 0.1 miles to site.								
7 J		A P D WENT WATER & MATCH		3i: A.		a. Ny Fastana				
Date Released:		12/22/2010								
Type Release:		Produced Flu								
Source of Contam	nination:	Flowline failu	re							
Fluid Released:		9 bbls	· · · · · · · · · · · · · · · · · · ·		_					
Fluids Recovered		8 bbls								
Official Commun	ication:			Stora B						
Name:	Pat Ellis				lke Tava	Ike Tavarez				
Company:	COG Operating, LL	С			Tetra Te	ch				
Address:	550 W. Texas Ave.	Ste. 1300			1910 N.	Bia Sprii	na			
P.O. Box			· · ·		-		<u> </u>	····		
City:	Midland Texas, 797	01			Midland,	Τογος				
Phone number:	(432) 686-3023		<u>`````````````````````````````````````</u>							
	(432) 684-7137				(432) 682-4559					
Fax:										
Email:	pellis@conchoreso	urces.com			<u>ike.tava</u>	ezwie	ratecr	<u>.com</u>		
Ranking Criteria			1. C.							
Depth to Groundw	ater:		Ranking Score			Site	e Data			
<50 ft			20							
50-99 ft			10							
>100 ft			0				0			
WellHead Protection			Ranking Score	1		Cit	e Data	· · · · · · · · · · · · · · · · · · ·		
	00 ft., Private <200 ft		20	+		5/10	e Dala			
	00 ft., Private >200 ft		0	-			0			
		· · · · · · · · · · · · · · · · · · ·								
Surface Body of W	/ater:		Ranking Score			Site	e Data			
<200 ft.			20							
200 ft - 1,000 ft. >1,000 ft.				10 0 · 0						
~1,000 IL			I		1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -		0			
Tota	Total Ranking Score									
			ble Soil RRAL (ma/ka)	1 ud					
		Benzene	TPH	24						
		10	Total BTEX 50	5,000	-1					
			<u> </u>	1 0,000						
			and a set of the set of			2 - 1	والمراجعة المراجع			



RECEIVED FEB 2 8 2012

February 14, 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., RJU South Tank Battery, Unit C, Section 35, 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 RJU South Tank Battery located in Unit C, Section 35, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.79415°, W 104.05014°. 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 December 22, 2010, from a steel flow line, releasing approximately nine (9) barrels of produced fluid in the pasture. Eight (8) barrels of standing fluids were recovered. To alleviate the problem, COG personnel repaired the flow line. The spill initiated in the pasture south of the tank battery and affected an area approximately 15' x 40' and 5' x 110' (tapering to 1.0'). The initial C-141 form is enclosed in Appendix A.

Groundwater

According to the NMOCD groundwater map, one well is shown with a reported depth to water of 153'. Based on the groundwater data, the average depth to groundwater in this area is greater than 100' below surface. The depth to groundwater data is shown in Appendix B.

TETRA TECH

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 9, 2011, Tetra Tech personnel inspected and sampled the spill area. Three (3) auger holes (AH-1, AH-2 and AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, auger hole (AH-2) exceeded the TPH RRAL at 0-1' of 19,570 mg/kg and at 1-1.5' of 11,320 mg/kg, which declined below the RRAL at 2-2.5' below surface. Auger hole (AH-3) also exceeded the TPH RRAL at 0-1 of 8,000 mg/kg and declined below the RRAL at 1-1.5' below surface. In addition, auger holes (AH-2 and AH-3) also exceeded either benzene or total BTEX concentrations, but declined at 1.0' to 2.0' below surface.

Chloride concentrations were detected in all of the auger holes. Auger hole (AH-1) showed a chloride high of 3,090 mg/kg at 0-1' and significantly declined to 504 mg/kg at 3.5-4.0' below surface. Auger holes (AH-2 and AH-3) have concentrations that increase with depth, which suggests that historical contamination has affected the spill foot print in this area. AH-2 and AH-3 were not vertically defined.



Closure Activities

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. The final excavation depths of the soil remediation were met or exceeded as stated in the approved work plan. The spill area was excavated to approximately 4.0' below surface. In addition, the BLM requested some historical impact be excavated located north and south of the reportable spill. The excavation depths ranged from 2.0' to 6.0' below surface. A total of 1,820 cubic yards of soil were excavated and hauled away for proper disposal. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4.

As requested by the BLM, confirmation samples were collected from the excavation bottoms and sidewalls of the reportable spill. The confirmation sample results are shown in Table 2. Based on the results, the excavations were backfilled with clean soil to grade.

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.

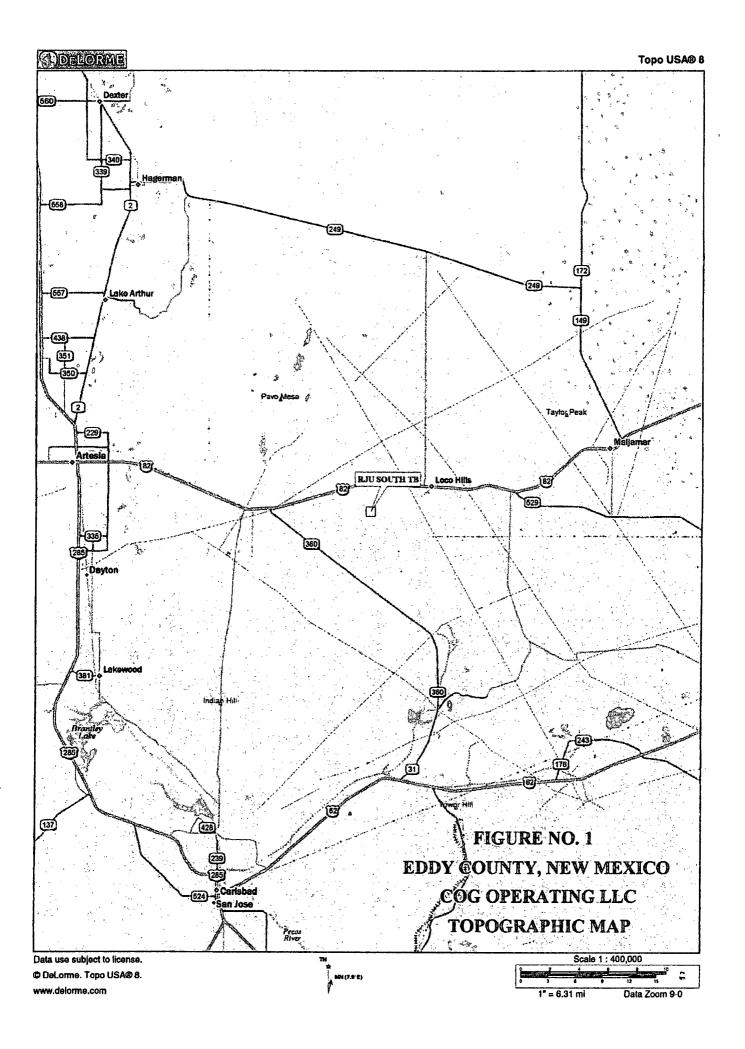
Respectfully submitted, TETRA TECH

lke Tavarez/

Senior Project Manager

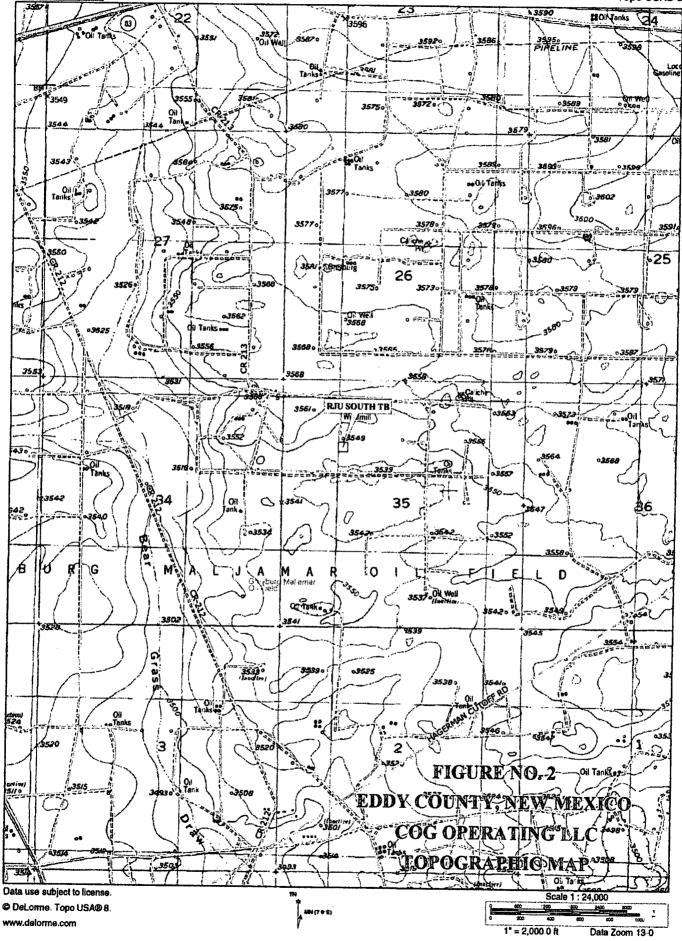
cc: Pat Ellis – COG cc: Terry Gregston – BLM

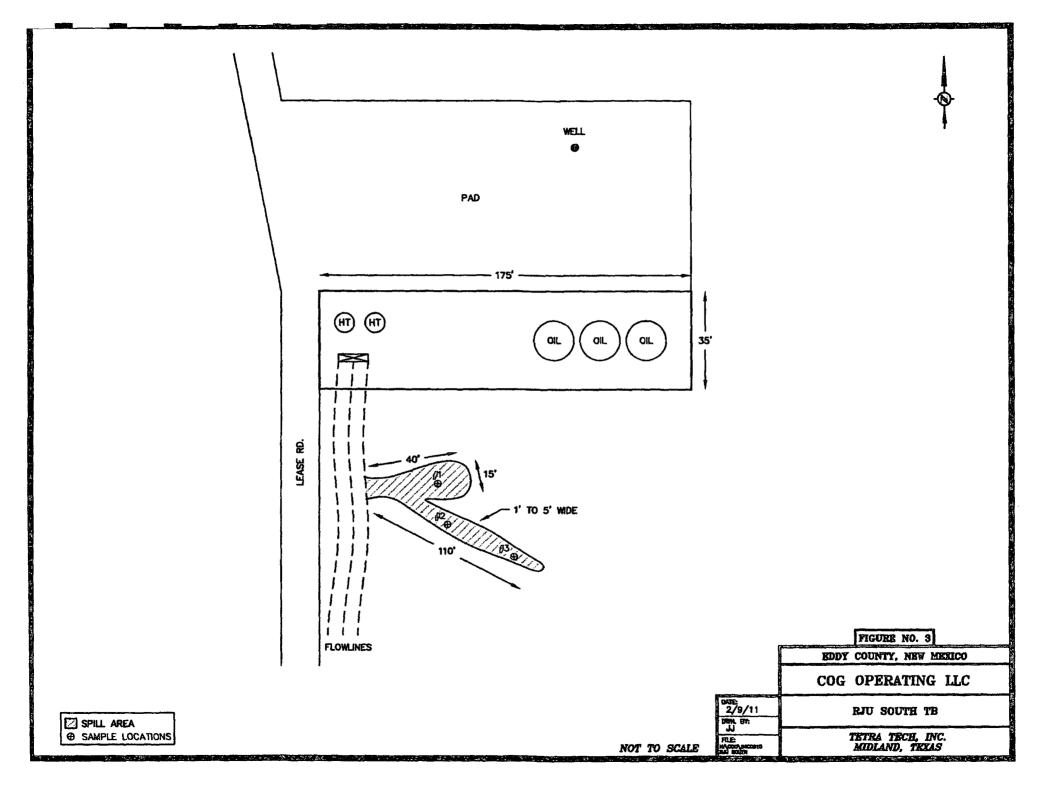
Figures

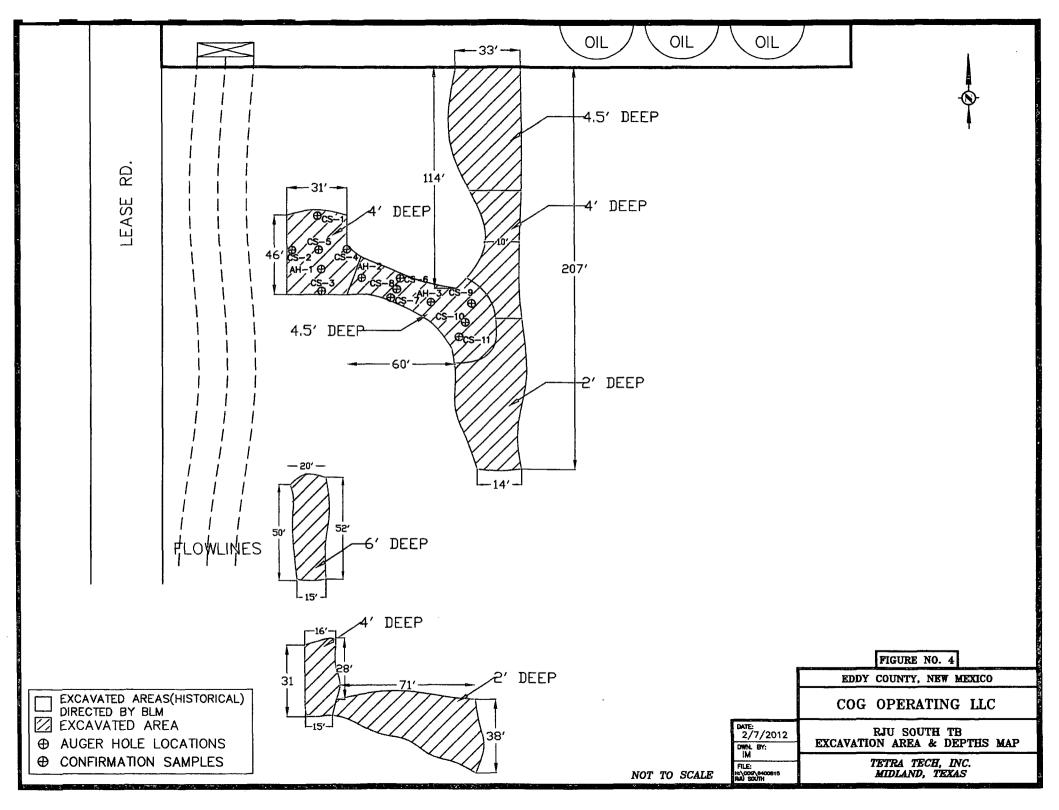




Topo USA® 8







Tables

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Table 1 COG Operating LLC. RJU SOUTH TANK BATTERY EDDY COUNTY, NEW MEXICO

Sample	Sample	Sample	Soi	I Status	TF	PH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	2/9/2011	0-1'		X	180	2,130	2,310					3,090
	n	1-1.5"		X	1,440	3,000	4,440			-		2,480
	11	2-2.5		X	1,040	1,100	2,140					1,600 💐
	11	3-3.5'		X	435	1,350	1,785				小龍	731
	u	3.5-4'		X	636	2,660	3,296	-		-		504
AH-2	2/9/2011	0-1'		X	5,270	14,300	19,570	<1.00	4.33	8.73	138	2,120
	11	1-1.5'		X	2,920	8,400	11,320	14.1	103	74.3	90.9	1,460
	- 11	2-2.5'		X	344	637	981	0.220	4.58	6.89	9.42	1,020
		2.5-3		X	1,960	648	2,608		÷			2,840
AH-3	2/9/2011	0-1	a ar ar ar	X	3,070-	4,930	8,000	<0.200	1.05	3.49	70.0	410
	u	1-1.5		X	302	1,170	1,472	0.905	19.9	12.9	13.4	880
	21	2-2.5'	Q	X.	29.8	136	165.8					836
	U	3-3.5'		X	4.18	<50.0	4.18					1,250
	u	4-4.5'		X								1,090

BEB Below Excavation Bottom

(--) Not Analyzed

-

Excavated Depths

Table 2 COG Operating LLC. RJU SOUTH TANK BATTERY EDDY COUNTY, NEW MEXICO

Sample	Sample	Sample	Soi	I Status	TF	PH (mg/k	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
CS-1	7/11/2011	Sidewall	X		-	-	-	-	-	-	-	<200
CS-2	7/11/2011	Sidewall	X			-	-	-	-	-	-	<200
CS-3	7/7/2011	Sidewall	×								-	537
CS-4	7/12/2011	Sidewall	X		-	-	-	-	-	-	_	<200
CS-5	7/11/2011	Bottom Hole 4'bqs	x			-		-		-	-	352
CS-6	7/7/2011	Sidewall	X			-	-	-	-	-		208
					·							

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Table 2COG Operating LLC.RJU SOUTH TANK BATTERYEDDY COUNTY, NEW MEXICO

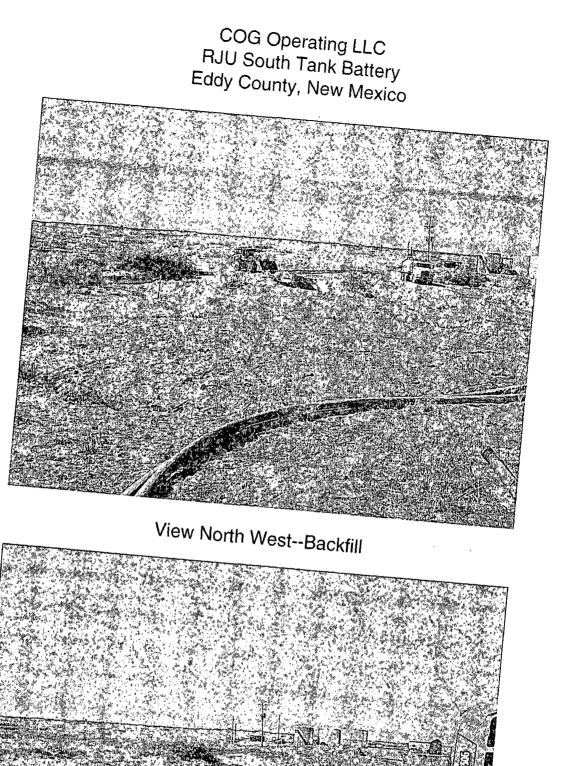
Sample	Sample	Sample	Soi	l Status	TF	PH (mg/k	(mg/kg) Benzen		Toluene	Ethlybenzene	Xylene	Chloride
. ID	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
CS-7	7/11/2011	Sidewall	X		-	-	-		-	-	-	<200
CS-8	7/11/2011	Bottom Hole 4.5'bgs	X			-	-	-	-	-	- -	509
CS-9	7/13/2011	Sidewall	X			-	-	-	-		-	<200
CS-10	7/13/2011	Bottom Hole 4'bgs	x		-	-	-	-	-	-	-	474
CS-11	7/13/2011	Sidewall	x		-	-		-		-	-	<200
Trench-1	7/14/2011	Bottom Hole 6'bgs Bottom Hole	x		-	-	-	-		-		391
	n n	8'bgs Bottom Hole 10'bgs	X X		-	-	-	-	-	-	-	409 <200
									1			<u> </u>

BEB Below Excavation Bottom

(--) Not Analyzed

Photos

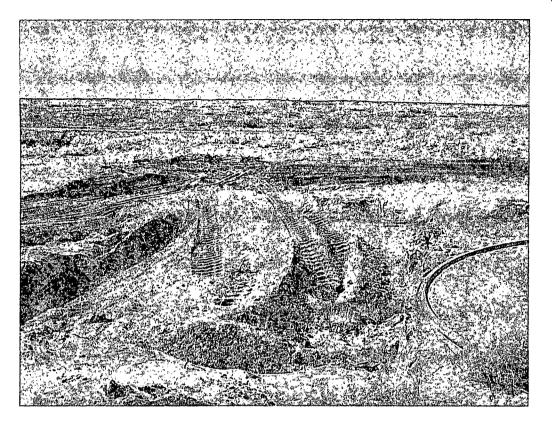
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TETRA TECH

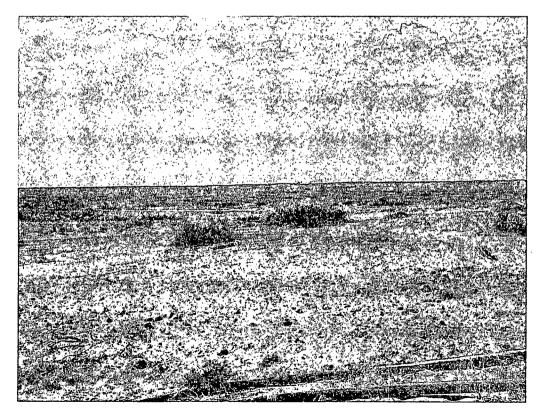
View North West--Backfill

COG Operating LLC RJU South Tank Battery Eddy County, New Mexico



TETRA TECH

View West--Backfill



View West--Backfill

Appendix A

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

Form C-141 Revised October 10, 2003

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

Lease No. (API #) 30-015-03783

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 RJU South Tank Battery	Facility Type Tank Battery		
Facility Name RJU South Tank Battery	Facility Type Tank Battery		

Surface Owner: Federal

LOCATION OF RELEASE

Mineral Owner

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
С	35	175	29E					

Latitude 32 47.647 Longitude 104 03.004

NATURE OF RELEASE

Type of Release: Produced Fluid	Volume of Release 9 bbls	Volume Recovered 8 bbls
Source of Release: Steel Flowline	Date and Hour of Occurrence 12/22/2010	Date and Hour of Discovery 12/22/2010
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.*	I	
N/A		
Describe Cause of Problem and Remedial Action Taken.*		
A steel flowline ruptured at the RJU South Tank Battery Location. A class	mp has been placed over the ruptured	part in the flowline and the entire flowline
is going to be replaced from the well to the header.		
Describe Area Affected and Cleanup Action Taken.*		
Tetra Tech personal inspected the site and collected samples to define the	spills extent. Soil that exceeded the F	RAL was removed and hauled to proper
disposal. Once excavated to appropriate depths the site was then brought		
report and submitted to the NMOCD for review.		• •
I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release n		
public health or the environment. The acceptance of a C-141 report by the		
should their operations have failed to adequately investigate and remediat	e contamination that pose a threat to s	ground water, surface water, human health
or the environment. In addition, NMOCD acceptance of a C-141 report d		
federal, state, or local laws and/or regulations.		
//	OIL CONSER	VATION DIVISION
Signature:		
Printed Name: Ike Tavarez Agear Ju COG	Approved by District Supervisor:	
	/	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	
	conduons of Apploval.	Attached
Date: 0-15-12 Phone: (432) 682-4559		

Attach Additional Sheets If Necessary

Date:

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

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

ren

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 Noti	ification and Correct	ive Action
	OPERATOR	\boxtimes
ERATING LLC	Contact	Pat Ellis

	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 RJU South Tank Battery	Facility Type	Tank Battery	

Surface	Owner Federal	Mineral Owner		Leas

e No. (API#) 30-015-03783

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C C	35	17S	29E					Eddy

Latitude 32 47.647 Longitude 104 03.004

NATURE OF RELEASE

Type of Release Produced fluid	Volume of Release 9bbls	Volume Recovered 8bbls				
Source of Release Steel flowline	Date and Hour of Occurrence	Date and Hour of Discovery				
	12/22/2010	12/22/2010				
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					
☐ Yes ⊠ No	in TES, volume impacting the watercourse,					
If a Watercourse was Impacted, Describe Fully.*						
Describe Cause of Problem and Remedial Action Taken.*						
A steel flowline ruptured at the RJU South Tank Battery Location. A cla	mp has been placed over the ruptured	part in the flowline and the entire flowline				
is going to be replaced from the well to the header.		•				
Describe Area Affected and Cleanup Action Taken.*						
Initially 9bbls of produced fluid was released from the flowline and we w	ere able to recover 8bbls with a vacu	im truck. The spill area measured 8' x 15'				
on the pad location and an additional area of 3' x 25' that ran off the pad contamination from the release and we will present a remediation work p	location. Tetra Tech will sample the s	pill site area to define and possible				
containination from the resease and we will present a remediation work p	an to the MMOCD for approval prior	to any significant remediation work.				
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 r	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				
or the environment. In addition, NMOCD acceptance of a C-141 report d	loes not relieve the operator of respons	sibility for compliance with any other				
federal, state, or local laws and/or regulations.						
101	OIL CONSERV	ATION DIVISION				
Signature:						
	A the second second second					
Printed Name: Josh Russo Approved by District Supervisor:						
	Ţ					
Title: HSE Coordinator	Approval Date:	Expiration Date:				
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attraction 1				
		Attached				
Date: 01/04/2011 Phone: 432-212-2399		!				

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data Average Depth to Groundwater (ft) COG - RJU South TB **Eddy County, New Mexico**

) 7	5 8	9	3	2	1
	8	-			
		9	10	11	12
8	17	16	15	14	13
9	20	21 61	22	23	24
80	29	28	27	26	25
81	32	33	34	35	36

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

	16	South	:	29 East	t	
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	
	17 :	17 South 29 East				

	16 Sc	outh	30	East
5	5	4	3	2
7	В	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35

17 South

18 South

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 80	23	24
30	29 210 208'	28	27	26	25
31	32	33	34	35 Site 153	36

29 East

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

18 South 30 East

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

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23	

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New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

Appendix C

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Summary Report

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

Project Location:	Eddy Co., NM
Project Name:	COG/RJU South Tank Battery
Project Number:	114-6400815

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
273097	CS-1 Sidewall	soil	2011-07-11	00:00	2011-07-29
273098	CS-2 Sidewall	soil	2011-07-11	00:00	2011-07-29
273099	CS-3 Sidewall	soil	2011-07-07	00:00	2011-07-29
273100	CS-4 Sidewall	soil	2011-07-12	00:00	2011-07-29
273101	CS-5 Bottom Hole 4' bgs	soil	2011-07-11	00:00	2011-07-29
273102	CS-6 Sidewall	soil	2011-07-07	00:00	2011-07-29
273103	CS-7 Sidewall	soil	2011-07-11	00:00	2011-07-29
273104	CS-8 Bottom Hole 4.5' bgs	soil	2011-07-11	00:00	2011-07-29
273105	CS-9 Sidewall	soil	2011-07-13	00:00	2011-07-29
273106	CS-10 Bottom Hole 4' bgs	soil	2011-07-13	00:00	2011-07-29
273107	CS-11 Sidewall	soil	2011-07-13	00:00	2011-07-29
273108	Trench-1 Bottom Hole 6' bgs	soil	2011-07-14	00:00	2011-07-29
273109	Trench-1 Bottom Hole 8' bgs	soil	2011-07-14	00:00	2011-07-29
273110	Trench-1 Bottom Hole 10' bgs	soil	2011-07-14	00:00	2011-07-29

Sample: 273097 - CS-1 Sidewall

Param	Flag	Result	Units	\mathbf{RL}
Chloride		<200	mg/Kg	4

Sample: 273098 - CS-2 Sidewall

Param	Flag	Result	Units	\mathbf{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: August 8, 2011

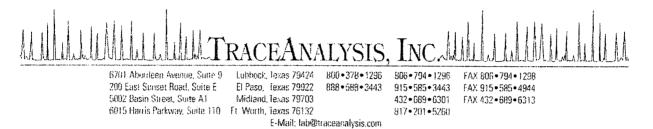
Work Order: 11072932

Report Date: August 8, 2011	Work Order: 11072932	Pag	Page Number: 2 of 3	
Sample: 273099 - CS-3 Sidewa	all			
Param Flag	g Result	Units	RL	
Chloride	537	mg/Kg	4	
Sample: 273100 - CS-4 Sidewa	all			
Param Flag		Units	RL	
Chloride	<200	mg/Kg	4	
Sample: 273101 - CS-5 Bottor	n Hole 4' bgs			
Param Flag		Units	RL	
Chloride	352	mg/Kg	4	
Sample: 273102 - CS-6 Sidewa	all			
Param Flag	g Result	Units	\mathbf{RL}	
Chloride	208	mg/Kg	4	
Sample: 273103 - CS-7 Sidewa	all			
Param Flag	g Result	Units	\mathbf{RL}	
Chloride	<200	mg/Kg	4	
Sample: 273104 - CS-8 Botton	n Hole 4.5' bgs			
Param Flag Chloride	g Result 509	Units mg/Kg	RL 4	
Sample: 273105 - CS-9 Sidewa	u			
•		TT	τīτ	
Param Flag Chloride	g Result <200	Units mg/Kg	<u>RL</u>	
Sample: 273106 - CS-10 Botto	-			
Param Flag		Units	RL	
Chloride	474	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: Aug	ıst 8, 2011	Work Order: 11072932		Page Number: 3 of 3	
Sample: 273107	- CS-11 Sidewall				
Param	\mathbf{Flag}	Result	Units	RL	
Chloride		<200	mg/Kg	4	
Sample: 273108	- Trench-1 Bottom Ho	le 6' bgs			
Param	Flag	Result	Units	RL	
Chloride		391	mg/Kg	4	
Sample: 273109	- Trench-1 Bottom Ho	le 8' bgs			
Sample: 273109 Param	- Trench-1 Bottom Ho Flag	le 8' bgs Result	Units	RL	

Param	Flag	Result	Units	RL
Chloride		<200	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: August 8, 2011

Work Order: 11072932

Project Location:Eddy Co., NMProject Name:COG/RJU South Tank BatteryProject Number:114-6400815

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
273097	CS-1 Sidewall	soil	2011-07-11	00:00	2011-07-29
273098	CS-2 Sidewall	soil	2011-07-11	00:00	2011-07-29
273099	CS-3 Sidewall	soil	2011-07-07	00:00	2011-07-29
273100	CS-4 Sidewall	soil	2011-07-12	00:00	2011-07-29
273101	CS-5 Bottom Hole 4' bgs	soil	2011-07-11	00:00	2011-07-29
273102	CS-6 Sidewall	soil	2011-07-07	00:00	2011-07-29
273103	CS-7 Sidewall	soil	2011-07-11	00:00	2011-07-29
273104	CS-8 Bottom Hole 4.5' bgs	soil	2011-07-11	00:00	2011-07-29
273105	CS-9 Sidewall	soil	2011-07-13	00:00	2011-07-29
273106	CS-10 Bottom Hole 4' bgs	soil	2011-07-13	00:00	2011-07-29
273107	CS-11 Sidewall	soil	2011-07-13	00:00	2011-07-29
273108	Trench-1 Bottom Hole 6' bgs	soil	2011-07-14	00:00	2011-07-29
273109	Trench-1 Bottom Hole 8' bgs	soil	2011-07-14	00:00	2011-07-29
273110	Trench-1 Bottom Hole 10' bgs	soil	2011-07-14	00:00	2011-07-29

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

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

Michael abel

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

Report Contents

Case Narrative	4
Analytical Report	5
Sample 273097 (CS-1 Sidewall)	5
	5
Sample 273099 (CS-3 Sidewall) \ldots	5
	5
	6
Sample 273102 (CS-6 Sidewall) \ldots	6
	6
Sample 273104 (CS-8 Bottom Hole 4.5' bgs)	7
	7
Sample 273106 (CS-10 Bottom Hole 4' bgs)	7
Sample 273107 (CS-11 Sidewall)	7
	8
	8
	8
	-
Method Blanks 1	
QC Batch 83608 - Method Blank (1)	0
QC Batch 83609 - Method Blank (1)	0
Laboratory Control Spikes	1
QC Batch 83608 - LCS (1)	_
QC Batch 83609 - LCS (1)	
QC Batch 83608 - MS (1)	_
QC Batch $83609 - MS(1)$	
$QO \text{ Batch } 03009 \text{ - MS}(1) \dots \dots$	2
Calibration Standards	3
QC Batch 83608 - ICV (1)	3
QC Batch 83608 - CCV (1)	
QC Batch 83609 - ICV (1)	
QC Batch 83609 - CCV (1)	
V	
Appendix 1	-
Laboratory Certifications	4
Standard Flags	4
Attachments	4

Case Narrative

Samples for project COG/RJU South Tank Battery were received by TraceAnalysis, Inc. on 2011-07-29 and assigned to work order 11072932. Samples for work order 11072932 were received intact at a temperature of 4.0 C.

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

		Prep	Prep	\mathbf{QC}	Analysis
Test	Method	Batch	Date	Batch	Date
Chloride (Titration)	SM 4500-Cl B	70924	2011-08-02 at 12:49	83608	2011-08-05 at 10:40
Chloride (Titration)	SM 4500-Cl B	70924	2011-08-02 at 12:49	83609	2011-08-05 at 10:41

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 11072932 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: August 8, 2011 114-6400815

Analytical Report

Sample: 273097 - CS-1 Sidewall

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 83608 70924	Date An	al Method: alyzed: Preparation:	SM 4500-Cl B 2011-08-05 2011-08-02	Prep Method: Analyzed By: Prepared By:	AR
		~	RL			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride	υ		<200	mg/Kg	50	4.00

Sample: 273098 - CS-2 Sidewall

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 83608 70924	Date	rtical Method: Analyzed: le Preparation:	SM 4500-Cl B 2011-08-05 2011-08-02	Prep Method Analyzed By: Prepared By:	AR
Demonstern		0.1	RL	TT 10.		ът
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	υ		<200	mg/Kg	50	4.00

Sample: 273099 - CS-3 Sidewall

Chloride			537	mg/Kg	50	4.00
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Prep Batch:	70924	Sample 1	Preparation:	2011-08-02	Prepared By:	AR
QC Batch:	83608	Date An	alyzed:	2011-08-05	Analyzed By:	ÁR
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland					

Report Date: August 8, 2011 114-6400815			Work Order: 11072932 COG/RJU South Tank Battery			Page Number: 6 of 14 Eddy Co., NM		
Sample: 27	3100 - CS-4 Sidewall							
Laboratory:	Midland							
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A		
QC Batch:	83608	Date An	alyzed:	2011-08-05	Analyzed By:	AR		
Prep Batch:	70924	Sample	Preparation:	2011-08-02	Prepared By:	AR		
			\mathbf{RL}					
Parameter	Flag	Cert	Result	Units	Dilution	RL		
Chloride	U		<200	mg/Kg	50	4.00		

Sample: 273101 - CS-5 Bottom Hole 4' bgs

Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83608	Date An	alyzed:	2011-08-05	Analyzed By:	AR
Prep Batch:	70924	Sample I	Preparation:	2011-08-02	Prepared By:	AR
-						
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride			352	mg/Kg	50	4.00

Sample: 273102 - CS-6 Sidewall

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 83608 70924	Date An	al Method: alyzed: Preparation:	SM 4500-Cl B 2011-08-05 2011-08-02	Prep Method: Analyzed By: Prepared By:	ÁR
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			208	mg/Kg	50	4.00

Sample: 273103 - CS-7 Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83608	Date Analyzed:	2011-08-05	Analyzed By:	AR
Prep Batch:	70924	Sample Preparation:	2011-08-02	Prepared By:	AR

Report Date: August & 114-6400815	3, 2011		k Order: 1107293 JU South Tank B	Page Number: 7 of 14 Eddy Co., NM		
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U	Cert	<200	mg/Kg	50	4.00

Sample: 273104 - CS-8 Bottom Hole 4.5' bgs

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 83608 70924	Date An	al Method: alyzed: Preparation:	SM 4500-Cl B 2011-08-05 2011-08-02	Prep Method: Analyzed By: Prepared By:	AR
D		a .	RL	TT		DI
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			509	mg/Kg	50	4.00

Sample: 273105 - CS-9 Sidewall

Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83608	Date An	alyzed:	2011-08-05	Analyzed By:	AR
Prep Batch:	70924	Sample Preparation:		2011-08-02	Prepared By:	AR
			\mathbf{RL}			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	υ		<200	mg/Kg	50	4.00

Sample: 273106 - CS-10 Bottom Hole 4' bgs

Parameter	\mathbf{F} lag	Cert	\mathbf{Result}	Units	Dilution	\mathbf{RL}
		F	RL			
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 83609 70924	Date An	al Method: alyzed: Preparation:	SM 4500-Cl B 2011-08-05 2011-08-02	Prep Method: Analyzed By: Prepared By:	AR

(

Report Date 114-6400815	:: August 8, 2011		rk Order: 110 JU South Tar	Page Number: 8 of 14 Eddy Co., NM		
Sample: 27	3107 - CS-11 Sidewall					
Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytic	cal Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83609	Date Ar	nalyzed:	2011-08-05	Analyzed By:	ÁR
Prep Batch:	70924	Sample	Preparation:	2011-08-02	Prepared By:	AR
			RL			
Parameter	\mathbf{Flag}	Cert	\mathbf{Result}	Units	Dilution	\mathbf{RL}
Chloride	υ		<200	mg/Kg	50	4.00

Sample: 273108 - Trench-1 Bottom Hole 6' bgs

Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83609	Date An	alyzed:	2011-08-05	Analyzed By:	AR
Prep Batch:	70924	Sample Preparation:		2011-08-02	Prepared By:	AR
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			391	mg/Kg	50	4.00

Sample: 273109 - Trench-1 Bottom Hole 8' bgs

Laboratory: Analysis: QC Batch: Prep Batch:	Analysis: Chloride (Titration) QC Batch: 83609		al Method: alyzed: Preparation:	SM 4500-Cl B 2011-08-05 2011-08-02	Prep Method: Analyzed By: Prepared By:	ÁR.
Demonster		0.1	RL	¥Ŧ ',		DI
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			409	mg/Kg	50	4.00

Sample: 273110 - Trench-1 Bottom Hole 10' bgs

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83609	Date Analyzed:	2011-08-05	Analyzed By:	AR
Prep Batch:	70924	Sample Preparation:	2011-08-02	Prepared By:	AR

Report Date: August 8, 2011 114-6400815			k Order: 1107293 U South Tank B	Page Number: 9 of 14 Eddy Co., NM		
Parameter	Flag	Cert	RL Result	Units	Dilution	\mathbf{RL}
Chloride	υ		<200	mg/Kg	50	4.00

Report Date: August 8, 2011 114-6400815

Work Order: 11072932 COG/RJU South Tank Battery Page Number: 10 of 14 Eddy Co., NM

Method Blanks

Method Blank (1)	QC Batch: 83608				
QC Batch: 83608 Prep Batch: 70924		Date Analyzed: QC Preparation:	2011-08-05 2011-08-02	Analyzed By: Prepared By:	AR AR
Parameter	Flag	Cert	MDL Result	Units	\mathbf{RL}
Chloride			<3.85	mg/Kg	4
Method Blank (1)	QC Batch: 83609				
QC Batch: 83609		Date Analyzed:	2011-08-05	Analyzed By:	AR
Prep Batch: 70924		QC Preparation:	2011-08-02	Prepared By:	AR
			MDL		
Parameter	Flag	Cert	Result	Units	RL
Chloride			<3.85	mg/Kg	4

Report Date: August 8, 2011 114-6400815

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 83608 Prep Batch: 70924			te Analyze C Preparatio		1-08-05 1-08-02			Analyz Prepar	ed By: AR ed By: AR
	_	~	LCS			Spike	Matr		Rec.
Param	F	C	Result	Units	Dil.	Amount 100	Resu <3.8		. Limit 85 - 115
Chloride			96.9	mg/Kg					
Percent recovery is based on the spi	ke res	ult. RP	D is based	on the sp	oike and sp	oike duplica	te result.	•	
		LCS	D		Spike	Matrix		Rec.	RPD
Param	F C	Resu	lt Units	Dil.	Amount	Result	Rec.	Limit	RPD Limit
Chloride		105	mg/Kg	g 1	100	<3.85	105 8	35 - 115	8 20
Percent recovery is based on the spi	ke res	ult. RP	D is based	on the sp	oike and sp	ike duplica	ate result.	•	
Laboratory Control Spike (LCS	-1)								
QC Batch: 83609		Da	te Analyze	d: 201	1-08-05			Analyz	ed By: AR
Prep Batch: 70924		QC	C Preparati	on: 2011	1-08-02			Prepar	ed By: AR
			LCS			Spike	Matr	rix	Rec.
Param	\mathbf{F}	С	Result	Units	Dil.	Amount	Resu	ılt Rec	. Limit
Chloride			97.2	mg/Kg	1	100	<3.8	85 97	85 - 115
Percent recovery is based on the spi	ke res	ılt. RP		on the sp		ike duplica	te result.		DDD

			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			105	mg/Kg	1	100	<3.85	105	85 - 115	8	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: 273105								
QC Batch: Prep Batch:	83608 70924	Date Analyzed: QC Preparation:		Analyzed By: Prepared By:						

114-6400815			С			11072932 Tank Batt	ery		P	age Nu	umber: 1 Eddy C	
Param		F	С І	MS Result	Units	Dil.	Spike Amount		atrix esult	Rec.		lec. imit
Chloride				9840	mg/Kg	100	10000	<	385	98	79.4	- 120.6
Percent recovery is based on the	spike	e res	ult. RPI) is based	l on the	spike and	spike dup	licate	result.			
Param	F	С	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Re Lir		RPD	RPD Limit
Chloride			10300	mg/Kg	100	10000	<385	103	79.4 -	120.6	5	20
QC Batch: 83609	ed Sa	mple		5 e Analyz Preparat		011-08-05 011-08-02				•	yzed By ared By:	
QC Batch: 83609 Prep Batch: 70924		mple F	Dat QC	e Analyz			Spike Amount		atrix	•	ared By: F	
QC Batch: 83609 Prep Batch: 70924 Param		-	Dat QC C F	e Analyz Preparat MS	ion: 2(11-08-02	•	Re		Prepa	ared By: F L	AR lec.
QC Batch: 83609		F	Dat QC <u>C</u> F	e Analyz Preparat MS Result 10900	ion: 2(Units mg/Kg	Dil. 100	Amount 10000	Re	esult)11	Prepa Rec.	ared By: F L	AR lec. imit
QC Batch: 83609 Prep Batch: 70924 Param Chloride		F	Dat QC <u>C</u> F	e Analyz Preparat MS Result 10900	ion: 2(Units mg/Kg	Dil. 100	Amount 10000	Re	esult)11	Prepa Rec. 100	ared By: F L	AR lec. imit
QC Batch: 83609 Prep Batch: 70924 Param Chloride		F	Dat QC <u>C</u> F ult. RPD	e Analyz Preparat MS Result 10900	ion: 20 Units mg/Kg on the Dil.	Dil. 100 spike and	Amount 10000 spike dupl	Re	esult 911 result.	Prepa Rec. 100 ec. nit	ared By: F L	AR lec. imit - 120.6

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

Calibration Standards

Standard (ICV-1)

QC Batch:	83608			Date A	Analyzed:	2011-08-05		Analy	zed By: AR
					ICVs	ICVs	ICVs	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride	· · · · · · · · · · · · · · · · · · ·			mg/Kg	100	101	101	85 - 115	2011-08-05

Standard (CCV-1)

QC Batch:	83608			Date A	Analyzed:	2011-08-05		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	99.1	99	85 - 115	2011-08-05

Standard (ICV-1)

QC Batch:	83609			Date A	nalyzed:	2011-08-05		Analy	zed By: AR
					ICVs	ICVs	ICVs	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride				mg/Kg	100	98.4	98	85 - 115	2011-08-05

Standard (CCV-1)

QC Batch:	83609			Date A	nalyzed: 2	011-08-05		Analy	zed By: AR
					CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
-			~					v	
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride				mg/Kg	100	102	102	85 - 115	2011-08-05

Report Date: August 8, 2011 114-6400815 Page Number: 14 of 14 Eddy Co., NM

Appendix

Laboratory Certifications

	Certifying	Certification	Laboratory
С	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-10-TX	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.

X110 #: 11072932					-بر ۱	<u>`</u>
Analysis Request of Chain of Custod	v Rec	ord		PAGE:		OF: 2
	<u> </u>			ANALYSIS RE (Circle or Specify N		.)
TETRATECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946			(Ext. to	cd cr Pb Hg Se Cd Vr Pd Hg Se 25		pH, TDS
CLIENT NAME: COG SITE MANAGER: IKE Tavorez	SE PF	RESERVATIVE METHOD	Ě.	60/624 (60/62		Hq. (s)
PROJECT NO.: PROJECT NAME: <u>114-4400815</u> <u>COG/RJU South Tank Battery</u> Eddy Co, WM	NUMBER OF CONTAINERS FILTERED (Y/N)		8021B 8015 MOD. 270	RCFA Metals Ag As Ba Cd TCLP Metals Ag As Ba Cd TCLP Volatiles TCLP Semi Volatiles RCI RCI GC.MS Vol. 8240/8260/624 GC.MS Semi. Vol. 8270/625 PCB's 8080/608 Past 808/608) ipec. la (Air)	PLM (Asbestos) Major Anions/Cations,
LAB I.D. NUMBER DATE TIME TIME AWOOD SAMPLE IDENTIFICATION	NUMBER OF CO FILTERED (Y/N) HCL	HN03 ICE NONE	BTEX 8021B TPH 8015 PAH 8270	RCFLA Me TCLP Wei TCLP Vei TCLP Sei RCI GC.MS V GC.MS V CGC.MS 80 Pc81 808	Chloride Gamma Spec. Alpha Beta (Ai	PLM (Asbestos) Major Anions/Ca
27309777/11 5 x CS-1 Sidewall	1	X			X	
OR8 7/11 5 X CS-2 Sidewall	1	×			x	
099 7/7 5 X CS-3 Sidewall	1	X			X	
100 7/12 S X CS-4 Sidewall	1	x			x	
101 7/11 S × CS-5 Bottom hole 4 bas	1	x			X	
102 717 S X CS-6 Sidewall	l	×			X	
103 7/11 5 × CS-7 Sidewall	l	Y			X	
104 7/11 S X CS-8 Bottom hole 4.5 bas		X			X	
105 7/13 5 X CS-9 Sidewall	l	×			X	
106 7/13 S X CS-10 BOTTOM Hole 4'695 RELINGUISHED BY: (Sugnature)	ł	×			X	
RELINGUISHED BY: (Signatura) Date: 111501 RECEIVED BY: (Signature)	· Da Tin			PLED BY Print & Initial) Brs	Schoved	Date: _//14/// Time:606
BELINQUISHED BY: (Signature) Date: RECEIVED BY: (Signature)	Da Tin	ne: 0800	FE	IPLE SHIPPED BY: (Circle) DEX BUS		BILL #:
RELINQUISHED BY (Signature)	Da Tin			AND DELIVERED UPS RA TECH CONTACT PERSON:		Results by:
RECEIVING LABORATORY: If contact ADDRESS: If contact CITY: If ind loand STATE: TA				Elec		RUSH Charges Authorized:
CONTACT: DATE: DATE:	TIME:		I			Yes No
4, o'c intact Xitll tests - Midlance	d	·····				

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

.

			_	4			Jian O	f Custod	y r	16	ЭС	or	a											ST od No	 		<u> </u>
	15.	-				910 N. Aidland (32) 682-4	RA TEC Big Spring St I, Texas 79705 4559 • Fax (432) 6	t. 5		ŢŢ					005 (Ext. to C35)		TCLP Metals Ag As Ba Cd Cr Pb Hg Se TCLP Metals Ag As Ba Cd Vr Pd Hg Se	П	T	Т						I, TDS	
CLIENT NAM	"E: CO	G				SITE MA	Ke Tava	rez	UNERS		PF	MET		VE	1×		s Ba Ba		۳ ۵	260/62	3270/6					ns, pł	
PROJECT N	0.: (- 4400		PR		G R	ru so	with Tank Eday Co, N	Battery	CONT	(N/X					MOD		s Ag /	ŝ	Volatile	8240/8	ii. Vol.	808		90. (Air)	tos)	is/Cati	
LAB I.D. NUMBER	DATE 2011	TIME		COMP. GPAR			Edwy Co, N AMPLE IDENTIFIC		NUMBER OF CONTAINERS	FILTERED (HCL	HN03 ICF	NONE	RTEX A0215	TPH 8015	PAH 8270	TCLP Meta	TCLP Volati	TCLP Semi	GC.MS Vol.	GC.MS Sen	PCB's 8080/608 Pest. 808/608	Chloride	Gamma Spi Ainha Beta	PLM (Asbestos)	Major Anions/Cations, pH, TDS	
273108	7/13		s	×	CS-	11 9	Sidewall	•	1			>											X				
ାର୍ଚୀ	7/14		S	X	Tren	ch-1t	ottom hole 6	bgs	1			X	·										X				
110	7/14		s	x			bottom hole		1			X											X				
111	7/14		s	X	Tren	n-3	bottom hole	10 635	<u> </u> 1		-	x										\downarrow	X		\downarrow		┦
			┢╌╿								-	_					+-	┝╌┝	+	╉	╞┼	+	$\left \cdot \right $	-	+	+	╀
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RELINGTSHED	BY: (Signatur	Jac	 .ee		Date:	1115/11 8:40	RECEIVED BY	(Signature)			Da Tin	ne:				B	PLED I	 ອາ: (B ວ S	rint &	Initial)	L le t	3PS			Date: _	7/1	<u>₹</u>
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			L			TETRATECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946								5 (Ext. to C35)	Cd Cr Pb Hg Se	Vr Pd Hg										ros	
CLIENT NAM		DG				site manager: Ike Tavarez	NERS		P		ERV	ATIVE DD		TX1005	a	9			60/624	270/625						ns, pH.	
PROJECT N	0.: 1-6400					NAME: RJU South Tan K Battery Eddy CS, N/1	CONTAINERS	N.						8 MOD	als Ag A	A BA BI	Volatilae	VOIAUIOS	8240/82	nl. Vol. 8	0/608	g		(MI)	stoa)	ns/Catio	
LAB I.D. NUMBER	DATE	TIME	1.		GRAB	E d 2 4 C 6, N / I SAMPLE IDENTIFICATION	NUMBER OF	FILTERED (HCL	HNOB	ΞĒ	NONE	BTEX 8021B	TPH 8015	RCRA Metals Ag As B	TCLP Met	TCLP Volatiles	RCI 36	GC.MS Vol	GC.MS Ser	PCB's 808(Pest. 808/6	Germa Spec.	Alpha Beta (Air)	PLM (Asbe	Major Anions/Cations,	
273097	<u>7/11</u>		5		x	CS-/ Side wall	1				x										Π		$\overline{\mathbf{x}}$				
· 1	7/11		S		X	CS-2 Sidewall	1				×											,	ĸ				
099	7/7		5		X	<u>cs-3</u> sidewall	1				X												x				
100	7/12		5		X	CS-4 Sidewall	1				x											2	x				
101	<u>7/11</u>		s		X	CS-5 Bottom hole 4 bas	1				×	_				ŀ						2	r_				
102	7/7		S		x	CS-6 Sidewall	1				×											ļ	4		Ш		
103	71u		5		x	CS-7 Sidewall	1				У											;	x		Ш		
104	7/u		5		X	CS-8 Bottom hole 4.5 bas	1				X)					
105	7/13		5		X	CS-9 Sidewall	1				x											/	×		Ш		
106	7/13		S		x	CS-10 BOTTOM hole 4'bas	1				×												×				
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RELINQUISHED	So ISignatu	re)	>	Σ	$\overline{\boldsymbol{z}}$	Time: IC.40 Date: 7/29/11 RECENEDSY: (Signature) Time: 1300 1500		~	ε	îme: Date: îme:		51	7	7	HANE	DEL			S UP	s	ł			отн		ults by	
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	TION WHEN			_ P	HONE	REMARKS: XHII KSts-Midland		ME:																	L	Yes	

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Analysis I	Real	est of Chain of Custod	vF	le:	CC	orc	ł							F	PAGE	:	2		ÔF	: ó	4
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		JETRATECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946						1 1	5 (Ext. to C35)	d Cr Pb Hg Se	Vr Pd Hg										-
		site manager: Ike Tavarez	NERS	Τ		SERV	ATIVE		TX1005	Ba Cd	8			60/624 70/625						111 S	
PROJECT NO.: 114-6400815	PROJEC	TNAME: G/RJU South Tank Battery	CONTAI	(N)	Τ				8015 MOD. 270	ls Ag As	la Ag As Ins	Volatiles		8240/82	/608	8	2	(Air)	atos)	NV CBUC	
LAB I.D. NUMBER DATE TIME 2011	MATRIX COMP: CEAR	SAMPLE IDENTIFICATION	I I NUMBER OF CONTAINERS	FILTERED (Y/N) HCL	EONH	ICE	NONE	121	PAH 801 PAH 8270	RCRA Metals Ag /	TCLP Metals /	TCLP Semi	RCI	GC.MS Vol. 8240/8260/624 GC.MS Semi Vol. 8270/624	PCB's 8080/608	Pest. 808/6	Chloride Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos) Maior Aciona/Callana, all TDS	Mejor	
273108 7/13	s ×	CS-11 Sidewall	1			X											X			T	
159 7/14	S x	Trench-Loottom hole 6'bas	1			×		\square									x	\square			
110 7/14	s x	Trench-1 bottom hole 8'bss	1			x											X		┝╍╍╋╸	⊥	
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Summary Report

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

Report Date: February 28, 2011

Work Order: 11021118

Project Location:Eddy Co., NMProject Name:COG/RJU South TBProject Number:114-6400815

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
257285	AH-1 0-1'	soil	2011-02-09	00:00	2011-02-11
257286	AH-1 1-1.5'	soil	2011-02-09	00:00	2011-02-11
257287	AH-1 2-2.5'	soil	2011-02-09	00:00	2011-02-11
257288	AH-1 3-3.5'	soil	2011-02-09	00:00	2011-02-11
257289	AH-1 3.5-4'	soil	2011-02-09	00:00	2011-02-11
257290	AH-2 0-1'	soil	2011-02-09	00:00	2011-02-11
257291	AH-2 2-2.5'	soil	2011-02-09	00:00	2011-02-11
257292	AH-2 2.5-3'	soil	2011-02-09	00:00	2011-02-11
257293	AH-3 0-1'	soil	2011-02-09	00:00	2011-02-11
257294	AH-3 1-1.5'	soil	2011-02-09	00:00	2011-02-11
257295	AH-3 2-2.5'	soil	2011-02-09	00:00	2011-02-11
257296	AH-3 3-3.5'	soil	2011-02-09	00:00	2011-02-11
257297	AH-3 4-4.5'	soil	2011-02-09	00:00	2011-02-11
257298	AH-2 1-1.5'	soil	2011-02-09	00:00	2011-02-11

]	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)
257285 - AH-1 0-1'					2130	180
257286 - AH-1 1-1.5'					3000	1440
257287 - AH-1 2-2.5'					1100	1040
257288 - AH-1 3-3.5'					1350	435
257289 - AH-1 3.5-4'					2660	636
257290 - AH-2 0-1'	<1.00	4.33	8.73	138	14300	5270
257291 - AH-2 2-2.5'	0.220	4.58	6.89	9.42	637	344
257292 - AH-2 2.5-3'					648	1960
257293 - AH-3 0-1'	< 0.200	1.05	3.49	70.0	4930	3070
257294 - AH-3 1-1.5'	0.905	19.9	12.9	13.4	1170	302
257295 - AH-3 2-2.5'					136	29.8

continued ...

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Report Date: February 28, 2011

			continued	
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		1	BTEX		TPH DRO - NEW	TPH GRC
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
257296 - AH-3 3-3.5'				· ·	<50.0	4.18
257298 - AH-2 1-1.5'	14.1	103	74.3	90.9	8400	2920
Sample: 257285 - AH-:	1 0-1'					
Param	Flag		Result		Units	RI
Chloride	0		3090		mg/Kg	4.00
Sample: 257286 - AH-:	1 1-1 5'					
Param	Flag		Result		Units	RI
Chloride		······	2480		mg/Kg	4.00
Sample: 257287 - AH-: Param Chloride	Flag		Result 1600		Units mg/Kg	RJ 4.0
Sample: 257288 - AH-1					T T •/	DI
Param Chloride	Flag		Result 731		Units mg/Kg	
Sample: 257289 - AH-1	1 3 5-1,		101	· · · ·		
	0.0-4		Result		Units	RI
-	Flag				UIIILS	រា
Param	Flag					
Param Chloride			504		mg/Kg	
Param Chloride Sample: 257290 - AH-2	2 0-1'		504		mg/Kg	4.00
Param Chloride						

Sample: 257291 - AH-2 2-2.5'

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Report Date: Febr	uary 28, 2011	Work Order: 11021118	Page	Number: 3 of 3
Param	Flag	Result	Units	RL
Chloride		1020	mg/Kg	4.00
Sample: 257292	- AH-2 2.5-3'			
Param	Flag	Result	Units	RL
Chloride		2840	mg/Kg	4.00
Sample: 257293	- AH-3 0-1'			
Param	Flag	Result	Units	RL
Chloride		410	mg/Kg	4.00
Sample: 257294	- AH-3 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		880	mg/Kg	4.00
Sample: 257295	- AH-3 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		836	mg/Kg	4.00
Sample: 257296	- AH-3 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		1250	mg/Kg	4.00
Sample: 257297	- AH-3 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		1090	mg/Kg	4.00
Sample: 257298	- AH-2 1-1.5'			
Param	Flag	Result	Units	RL
Chloride	· ·····	1460	mg/Kg	4.00

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FAX 806 • 794 • 1298 FAX 915+585+4944 FAX 432 • 689 • 6313

WBENC: 237019

HUB: 1752439743100-86536 NCTRCA WFWB38444Y0909

DBE: VN 20657

NELAP Certifications

Certifications

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

El Paso: T104704221-08-TX LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: February 28, 2011

Work Order: 11021118

Project Location: Eddy Co., NM **Project Name:** COG/RJU South TB 114-6400815 Project Number:

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
$\overline{257285}$	AH-1 0-1'	soil	2011-02-09	00:00	2011-02-11
257286	AH-1 1-1.5'	soil	2011-02-09	00:00	2011-02-11
257287	AH-1 2-2.5'	soil	2011-02-09	00:00	2011-02-11
257288	AH-1 3-3.5'	soil	2011-02-09	00:00	2011-02-11
257289	AH-1 3.5-4'	soil	2011-02-09	00:00	2011-02-11
257290	AH-2 0-1'	soil	2011-02-09	00:00	2011-02-11
257291	AH-2 2-2.5'	soil	2011-02-09	00:00	2011-02-11
257292	AH-2 2.5-3'	soil	2011-02-09	00:00	2011-02-11
257293	AH-3 0-1'	soil	2011-02-09	00:00	2011-02-11
257294	AH-3 1-1.5'	soil	2011-02-09	00:00	2011-02-11

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
257295	AH-3 2-2.5'	soil	2011-02-09	00:00	2011-02-11
257296	AH-3 3-3.5'	soil	2011-02-09	00:00	2011-02-11
257297	AH-3 4-4.5'	soil	2011-02-09	00:00	2011-02-11
257298	AH-2 1-1.5'	soil	2011-02-09	00:00	2011-02-11

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

This report consists of a total of 40 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael abel

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

Standard Flags

 ${\bf B}\,$ - The sample contains less than ten times the concentration found in the method blank.

Samples for project COG/RJU South TB were received by TraceAnalysis, Inc. on 2011-02-11 and assigned to work order 11021118. Samples for work order 11021118 were received intact at a temperature of 10.1 C.

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

		Prep	Prep	\mathbf{QC}	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	66561	2011-02-14 at 12:44	77767	2011-02-14 at 12:44
BTEX	S 8021B	66683	2011-02-17 at 14:21	77746	2011-02-18 at 14:34
BTEX	S 8021B	66777	2011-02-23 at 10:44	77858	2011-02-23 at 10:44
Chloride (Titration)	SM 4500-Cl B	66550	2011-02-14 at 12:32	77628	2011-02-15 at 15:31
Chloride (Titration)	SM 4500-Cl B	66550	2011-02-14 at 12:32	77629	2011-02-15 at 15:32
TPH DRO - NEW	S 8015 D	66584	2011-02-15 at 10:10	77634	2011-02-15 at 10:10
TPH DRO - NEW	S 8015 D	66796	2011-02-23 at 09:00	77882	2011-02-23 at 10:07
TPH DRO - NEW	S 8015 D	66844	2011-02-25 at 09:40	77932	2011-02-25 at 09:40
TPH GRO	S 8015 D	66561	2011-02-14 at 12:44	77597	2011-02-14 at 12:44
TPH GRO	S 8015 D	66683	2011-02-17 at 14:21	77748	2011-02-18 at 14:34
TPH GRO	S 8015 D	66777	2011-02-23 at 10:44	77859	2011-02-23 at 10:44
TPH GRO	S 8015 D	66842	2011-02-25 at $08:21$	77929	2011-02-25 at 09:15

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 11021118 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: 257285 - AH-1 0-1'

Midland				
Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
77628	Date Analyzed:	2011-02-15	Analyzed By:	AR
66550	Sample Preparation	n: 2011-02-14	Prepared By:	\mathbf{AR}
	\mathbf{RL}			
Flag	Result	Units	Dilution	RL
	3090	mg/Kg	100	4.00
	Chloride (Titration) 77628 66550	Chloride (Titration)Analytical Method:77628Date Analyzed:66550Sample PreparationRLFlagResult	Chloride (Titration)Analytical Method:SM 4500-Cl B77628Date Analyzed:2011-02-1566550Sample Preparation:2011-02-14RLFlagResultUnits	Chloride (Titration)Analytical Method:SM 4500-Cl BPrep Method:77628Date Analyzed:2011-02-15Analyzed By:66550Sample Preparation:2011-02-14Prepared By:RLFlagResultUnitsDilution

Sample: 257285 - AH-1 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - N 77634 66584	NEW	Date A	cal Method: nalyzed: Preparation:	S 8015 D 2011-02-15 2011-02-15	Prep M Analyz Prepare	• •
Parameter DRO	F	lag	RL Result 2130		Units g/Kg	Dilution 5	RL 50.0
		<u></u>	2130	111	Spike	Percent	Recovery
Surrogate	Flag	\mathbf{Result}	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	1	312	mg/Kg	5	100	312	70 - 130

Sample: 257285 - AH-1 0-1'

Laboratory:	Midland							
Analysis:	TPH GRO		Analytica	l Method:	S 8015 D		Prep Me	thod: S 5035
QC Batch:	77597		Date Ana	lyzed:	2011-02-14		Analyze	d By: ME
Prep Batch:	66561		Sample P	reparation:	2011-02-14		Prepareo	l By: ME
			RL					
Parameter	Flag		Result		Units		Dilution	RL
GRO			180	····	mg/Kg		5	2.00
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ene (TFT)		5.75	mg/Kg	5	5.00	115	36.3 - 158.9
4-Bromofluor	obenzene (4-BFB)		6.12	mg/Kg	5	5.00	122	22.2 - 160.2

¹High surrogate recovery due to peak interference.

Report Date: February 28, 2011 114-6400815			Work Order: 11021118 COG/RJU South TB			Page Number: 5 of 40 Eddy Co., NM		
Sample: 25	7286 - AH-1 1	-1.5'						
Laboratory:	Midland							
Analysis:	Chloride (Titr	ation)	Analytical		M 4500-Cl B	Prep Metho	,	
QC Batch:	77628		Date Anal	w	011-02-15	Analyzed E		
Prep Batch:	66550		Sample Pr	eparation: 2	011-02-14	Prepared B	y: AR	
			RL					
Parameter	Fl	ag	Result	U	nits	Dilution	RL	
				/17/	100	1.00		
Chloride Sample: 25	7286 - AH-1 1	-1.5'	2480	mg,	/Kg	100	4.00	
Chloride Sample: 25 Laboratory: Analysis: QC Batch:	7286 - AH-1 1 Midland TPH DRO - N 77882		Analytica Date Ana	l Method: f	S 8015 D 2011-02-23	Prep Metho Analyzed E	od: N/A by: kg	
Chloride Sample: 25 Laboratory: Analysis:	7286 - AH-1 1 Midland TPH DRO - N		Analytica Date Ana Sample P	l Method: S lyzed: S	S 8015 D	Prep Metho	od: N/A by: kg	
Chloride Sample: 25 Laboratory: Analysis: QC Batch: Prep Batch:	7286 - AH-1 1 Midland TPH DRO - N 77882 66796	EW	Analytica Date Ana Sample P RL	l Method: S lyzed: S reparation: S	S 8015 D 2011-02-23 2011-02-23	Prep Metho Analyzed E Prepared B	od: N/A y: kg y: kg	
Chloride Sample: 25 Laboratory: Analysis: QC Batch: Prep Batch: Parameter	7286 - AH-1 1 Midland TPH DRO - N 77882 66796		Analytica Date Ana Sample P RL Result	l Method: S lyzed: S reparation: S	S 8015 D 2011-02-23 2011-02-23 nits	Prep Metho Analyzed E Prepared B Dilution	od: N/A y: kg y: kg RL	
Chloride Sample: 25 Laboratory: Analysis: QC Batch: Prep Batch:	7286 - AH-1 1 Midland TPH DRO - N 77882 66796	EW	Analytica Date Ana Sample P RL	l Method: S lyzed: S reparation: S	S 8015 D 2011-02-23 2011-02-23	Prep Metho Analyzed E Prepared B	od: N/A y: kg y: kg	
Chloride Sample: 25 Laboratory: Analysis: QC Batch: Prep Batch: Parameter	7286 - AH-1 1 Midland TPH DRO - N 77882 66796	EW	Analytica Date Ana Sample P RL Result	l Method: S lyzed: S reparation: S	S 8015 D 2011-02-23 2011-02-23 nits	Prep Metho Analyzed E Prepared B Dilution	od: N/A y: kg y: kg RL	
Chloride Sample: 25 Laboratory: Analysis: QC Batch: Prep Batch: Parameter	7286 - AH-1 1 Midland TPH DRO - N 77882 66796	EW	Analytica Date Ana Sample P RL Result	l Method: S lyzed: S reparation: S	S 8015 D 2011-02-23 2011-02-23 nits /Kg	Prep Metho Analyzed E Prepared B Dilution 5	od: N/A y: kg y: kg RL 50.0	

Sample: 257286 - AH-1 1-1.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 77859 66777		Date Ana	l Method: lyzed: reparation:	S 8015 D 2011-02-23 2011-02-23		Prep Me Analyze Preparec	d By: ME
			RL					
Parameter	Flag		Result		Units		Dilution	\mathbf{RL}
GRO			1440		mg/Kg		50	2.00
						Spike	Percent	Recovery
Surrogate		Flag	\mathbf{Result}	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ene (TFT)		56.5	mg/Kg	50	50.0	113	36.3 - 158.9
4-Bromofluor	cobenzene (4-BFB)		73.0	mg/Kg	50	50.0	146	22.2 - 160.2

²High surrogate recovery due to peak interference.

Report Date: February 28, 2011	Work Order: 11021118	Page Number: 6 of 40
114-6400815	COG/RJU South TB	Eddy Co., NM

Sample: 257287 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	77628	Date Analyzed:	2011-02-15	Analyzed By:	\mathbf{AR}
Prep Batch:	66550	Sample Preparation:	2011-02-14	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride	······································	1600	mg/Kg	100	4.00

Sample: 257287 - AH-1 2-2.5'

n-Tricosane	3	171	mg/Kg	5	100	171	70 - 130
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
DRO			1100	mg	/Kg	5	50.0
Parameter	FI	ag	RL Result		nits	Dilution	RL
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - N 77882 66796	IEW	Date Ar	nalyzed:	S 8015 D 2011-02-23 2011-02-23	Prep M Analyz Prepare	

Sample: 257287 - AH-1 2-2.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 77859 66777		Analytica Date Ana Sample P		S 8015 D 2011-02-23 2011-02-23		Prep Me Analyze Preparec	d By: ME
			RL					
Parameter	Flag		Result		Units		Dilution	RL
GRO			1040		mg/Kg		5	2.00
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ene (TFT)	**	5.83	mg/Kg	5	5.00	117	36.3 - 158.9
4-Bromofluor	obenzene (4-BFB)	4	11.1	mg/Kg	5	5.00	222	22.2 - 160.2

³High surrogate recovery due to peak interference. ⁴High surrogate recovery due to peak interference.

Report Date: February 28, 2011	Work Order: 11021118	Page Number: 7 of 40
114-6400815	COG/RJU South TB	Eddy Co., NM
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Sample: 257288 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	77628	Date Analyzed:	2011-02-15	Analyzed By:	AR
Prep Batch:	66550	Sample Preparation:	2011-02-14	Prepared By:	AR
		זמ			
		RL			
Parameter	Flag	\mathbf{Result}	Units	Dilution	\mathbf{RL}
Chloride		731 r	ng/Kg	50	4.00

Sample: 257288 - AH-1 3-3.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO 77932 66844	- NEW	Date A	cal Method: nalyzed: Preparation:	S 8015 D 2011-02-25 2011-02-25	Prep M Analyz Prepar	
Parameter DRO		Flag	RL Result 1350		Jnits 5/Kg	Dilution 1	RL 50.0
Surrogate n-Tricosane	Flag 5	Result 221	Units mg/Kg	Dilution 1	Spike Amount 100	Percent Recovery 221	Recovery Limits 70 - 130

Sample: 257288 - AH-1 3-3.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 77929 66842		Date Ana	l Method: lyzed: reparation:	S 8015 D 2011-02-25 2011-02-25		Prep Me Analyzee Prepareo	d By: ME
			RL					
Parameter	Flag		Result		Units		Dilution	\mathbf{RL}
GRO			435		mg/Kg		10	2.00
Surrogate		Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotolue	•	<u>v</u>	11.6	mg/Kg	10	10.0	116	36.3 - 158.9
4-Bromofluor	obenzene (4-BFB)	6	16.4	mg/Kg	10	10.0	164	22.2 - 160.2

⁵High surrogate recovery due to peak interference. ⁶High surrogate recovery due to peak interference.

Report Date: February 28, 2011	Work Order: 11021118	Page Number: 8 of 40
114-6400815	COG/RJU South TB	Eddy Co., NM
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Sample: 257289 - AH-1 3.5-4'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	77628	Date Analyzed:	2011-02-15	Analyzed By:	AR
Prep Batch:	66550	Sample Preparation:	2011-02-14	Prepared By:	\mathbf{AR}
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		504	mg/Kg	50	4.00

Sample: 257289 - AH-1 3.5-4'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - N 77932 66844	EW	Date A	nalyzed:	S 8015 D 2011-02-25 2011-02-25	Prep M Analyz Prepare	v v
Parameter DRO	F	ag	RL Result 2660	-	Jnits /Kg	Dilution 5	RL 50.0
Surrogate n-Tricosane	Flag 7	Result 430	Units mg/Kg	Dilution 5	Spike Amount 100	Percent Recovery 430	Recovery Limits 70 - 130

Sample: 257289 - AH-1 3.5-4'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 77929 66842		Date Ana	l Method: lyzed: reparation:	S 8015 D 2011-02-25 2011-02-25		Prep Me Analyzec Preparec	ł By: ME
			RL					
Parameter	\mathbf{Flag}		Result		Units		Dilution	\mathbf{RL}
GRO			636		mg/Kg		10	2.00
						Spike	Percent	Recovery
Surrogate		Flag	\mathbf{Result}	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ene (TFT)		10.6	mg/Kg	10	10.0	106	36.3 - 158.9
4-Bromofluor	obenzene (4-BFB)	8	19.6	mg/Kg	10	10.0	196	22.2 - 160.2

⁷High surrogate recovery due to peak interference. ⁸High surrogate recovery due to peak interference.

Sample: 257290 - AH-2 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 77767 66561		Analytical Date Analy Sample Pre	zed:	S 8021B 2011-02-14 2011-02-14		Prep Me Analyze Preparec	d By: ME
			\mathbf{RL}					
Parameter	Flag		Result		Units	Ι	Dilution	RL
Benzene			<1.00	***	mg/Kg		50	0.0200
Toluene			4.33		mg/Kg		50	0.0200
Ethylbenzene	:		8.73		mg/Kg		50	0.0200
Xylene			138		mg/Kg		50	0.0200
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ene (TFT)		72.1	mg/Kg	50	50.0	144	51.6 - 149.2
4-Bromofluor	obenzene (4-BFB)		77.3	mg/Kg	50	50.0	155	35.7 - 159.6

Sample: 257290 - AH-2 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 77629 66550	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-02-15 2011-02-14	Prep Method: Analyzed By: Prepared By:	'
		\mathbf{RL}			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		2120	ng/Kg	100	4.00

Sample: 257290 - AH-2 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - NEW 77634 66584		Analytical Method: Date Analyzed: Sample Preparation:		S 8015 D 2011-02-15 2011-02-15	Prep M Analyz Prepare	v O
Parameter	Fl	ag	RL Result		Units	Dilution	RL
DRO	· · · · · · · · · · · · · · · · · · ·		14300	m	g/Kg	10	50.0
Surrogate n-Tricosane	Flag 9	Result 1250	Units mg/Kg	Dilution 10	Spike Amount 100	Percent Recovery 1250	Recovery Limits 70 - 130

⁹High surrogate recovery due to peak interference.

Sample: 257290 - AH-2 0-1'

Laboratory:	Midland								
Analysis:	Analysis: TPH GRO			l Method:	S 8015 D		Prep Method: S 5035		
QC Batch: 77597			Date Analyzed:		2011-02-14		Analyze	d By: ME	
Prep Batch:	66561			Sample Preparation:			Prepareo		
			\mathbf{RL}						
Parameter	Flag		Result		Units		Dilution	RL	
GRO			5270		mg/Kg		50	2.00	
						Spike	Percent	Recovery	
Surrogate		Flag	\mathbf{Result}	Units	Dilution	Amount	Recovery	Limits	
Trifluorotolu	ene (TFT)		58.7	mg/Kg	50	50.0	117	36.3 - 158.9	
4-Bromofluor	robenzene (4-BFB)		69.9	mg/Kg	50	50.0	140	22.2 - 160.2	

Sample: 257291 - AH-2 2-2.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 77858 66777		Analytical Date Analy Sample Pre	vzed:	S 8021B 2011-02-23 2011-02-23		Prep Me Analyzee Prepared	d By:	S 5035 ME ME
			RL						
Parameter	Flag		Result		Units	Γ	Dilution		RL
Benzene	<u></u>		0.220		mg/Kg	·····	1		0.0200
Toluene			4.58		mg/Kg		1		0.0200
Ethylbenzene			6.89		mg/Kg		1		0.0200
Xylene			9.42		mg/Kg		1		0.0200
						Spike	Percent	Re	covery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	L	imits
Trifluorotolue	ne (TFT)		2.32	mg/Kg	1	2.00	116	51.6	- 149.2
4-Bromofluoro	obenzene (4-BFB)	10	4.92	mg/Kg	1	2.00	246	35.7	' - 159.6

Sample: 257291 - AH-2 2-2.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Chloride (Titration) 77629	Analytical Method: Date Analyzed: Sample Preparation	2011-02-15	Prep Method: Analyzed By: Prepared By:	AR.
		\mathbf{RL}			
Parameter	\mathbf{Flag}	Result	Units	Dilution	RL
Chloride		1020	mg/Kg	100	4.00

¹⁰High surrogate recovery due to peak interference.

Laboratory: Analysis: QC Batch: Prep Batch:	s: TPH DRO - NEW tch: 77882		Date Ar	Analytical Method:S 8015 DDate Analyzed:2011-02-23Sample Preparation:2011-02-23		Prep Method: N/A Analyzed By: kg Prepared By: kg	
Parameter	Fl	ag	RL Result		nits	Dilution	RL
DRO			637	mg/	/Kg	5	50.0
Surrogate n-Tricosane	Flag 11	Result 152	Units mg/Kg	Dilution 5	Spike Amount 100	Percent Recovery 152	Recovery Limits 70 - 130
Sample: 25 Laboratory: Analysis: QC Batch: Prep Batch:	7291 - AH-2 2 Midland TPH GRO 77859 66777	-2.5'	Analytical M Date Analyze Sample Prep	ed: 2011-0	02-23	Prep Met Analyzed Prepared	By: ME

Parameter Flag		RL Result		Units		Dilution	\mathbf{RL}
GRO		344		mg/Kg		1	2.00
C	El	Deralt	TT: 4 -	Dilution	Spike	Percent	Recovery
Surrogate	Flag	Result 2.38	Units	Dilution	Amount 2.00	Recovery 119	Limits 36.3 - 158.9
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB)	12	4.52	mg/Kg mg/Kg	1	2.00	226	22.2 - 160.2

Sample: 257292 - AH-2 2.5-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Me	thod: SM 4500-Cl B	Prep Method:	N/A
QC Batch:	77629	Date Analyzed	l: 2011-02-15	Analyzed By:	AR
Prep Batch:	66550	Sample Prepar	ration: 2011-02-14	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		2840	mg/Kg	100	4.00

¹¹ High surrogate recovery due to peak interference. ¹² High surrogate recovery due to peak interference.

Report Date: February 28, 2011	Work Order: 11021118	Page Number: 12 of 40
114-6400815	COG/RJU South TB	Eddy Co., NM
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Sample: 257292 - AH-2 2.5-3'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - N 77882 66796	IEW	Date A	cal Method: 1alyzed: Preparation:	S 8015 D 2011-02-23 2011-02-23	Prep M Analyz Prepare	4 67
Parameter	٤	ag	RL Result		Units	Dilution	RL
DRO	T .,	ag	<u>648</u>	m	g/Kg	1	50.0
Surrogata	Flug	Result	Units	Dilution	Spike A mount	Percent	Recovery Limits
Surrogate n-Tricosane	Flag 13	<u>161</u>	mg/Kg	1	Amount 100	Recovery 161	70 - 130

Sample: 257292 - AH-2 2.5-3'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 77859 66777		Analytica Date Ana Sample P		S 8015 D 2011-02-23 2011-02-23		Prep Me Analyzed Prepared	d By: ME
			RL					
Parameter	\mathbf{F} lag		Result		Units		Dilution	RL
GRO			1960	· · · · · · · · · · · · · · · · · · ·	mg/Kg		20	2.00
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ene (TFT)		21.5	mg/Kg	20	20.0	108	36.3 - 158.9
4-Bromofluor	obenzene (4-BFB)	14	36.2	mg/Kg	20	20.0	181	22.2 - 160.2

Sample: 257293 - AH-3 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 77767 66561		Analytical Method: Date Analyzed: Sample Preparation:	S 8021B 2011-02-14 2011-02-14	Prep Method: Analyzed By: Prepared By:	S 5035 ME ME
			RL			
Parameter		Flag	Result	Units	Dilution	RL
Benzene			< 0.200	mg/Kg	10	0.0200
Toluene			1.05	mg/Kg	10	0.0200
Ethylbenzene	9		3.49	mg/Kg	10	0.0200
Xylene			70.0	mg/Kg	10	0.0200

¹³High surrogate recovery due to peak interference.
¹⁴High surrogate recovery due to peak interference.

Report Date: February 28, 114-6400815	, 2011	Work Order: 11021118 COG/RJU South TB				Page Number: 13 of 40 Eddy Co., NM		
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Liı	overy nits
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-B	(FR) 15	6.84 32.8	mg/Kg mg/Kg	10 10	10.0 10.0	68 328		-149.2 -159.6
4-Diomonitorobenzene (4-D	or D)	J 2.0	mg/ Kg	10	10.0	<u> </u>		- 139.0
Sample: 257293 - AH-3	0-1'							
Laboratory: Midland								
Analysis: Chloride (Tit	tration)		tical Metho				Method:	N/A
QC Batch: 77629			Analyzed:	2011-02			zed By:	AR
Prep Batch: 66550		Samp	le Preparatio	on: 2011-02	2-14	Prepar	red By:	AR
D		RL						
	Flag	Result		Units		Dilution		RI
Chloride		410		mg/Kg		50		4.00
Analysis: TPH DRO - QC Batch: 77634 Prep Batch: 66584	NEW	Date	ytical Metho Analyzed: ple Preparati	2011-0	2-15	Analyz	Method: zed By: red By:	N/A kg kg
		RL	· •				Ū	Ģ
Parameter	Flag	Result		Units		Dilution		RL
DRO		4930		mg/Kg		5		50.0
Surrogate Flag	Result	Units	Dilut	ion 4	Spike Amount	Percent Recovery		covery imits
n-Tricosane ¹⁶	490	mg/Kg	5		100	490		- 130
Sample: 257293 - AH-3 Laboratory: Midland Analysis: TPH GRO QC Batch: 77597	0-1'	Analytica Date Ana		S 8015 D 2011-02-14		Prep Me Analyzec		5 503 ME
Prep Batch: 66561		Sample Pi	reparation:	2011-02-14		Prepared		МE

Units

mg/Kg

Dilution

10

RL

2.00

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¹⁵High surrogate recovery due to peak interference. ¹⁶High surrogate recovery due to peak interference.

Flag

Result

3070

Parameter

 $\overline{\mathrm{GRO}}$

Report Date: February 28, 2012 114-6400815	Work Order: 11021118 COG/RJU South TB				Page Number: 14 of 40 Eddy Co., NM		
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		12.9	mg/Kg	10	10.0	129	36.3 - 158.9
4-Bromofluorobenzene (4-BFB)	17	53.3	mg/Kg	10	10.0	533	22.2 - 160.2
Sample: 257294 - AH-3 1-1.	5'					-	
Laboratory: Midland							
Analysis: BTEX		Analytical		S 8021B		Prep Mo	
QC Batch: 77746		Date Anal		2011-02-18		Analyze	•
Prep Batch: 66683		Sample Pr	eparation:	2011-02-17		Prepare	d By: ME
		RL					
Parameter Fla	g	Result		Units	Γ	lution	\mathbf{RL}
Benzene		0.905		mg/Kg		1	0.0200
Toluene ¹⁸		19.9		mg/Kg		1	0.0200
Ethylbenzene ¹⁹		12.9		mg/Kg		1	0.0200
Xylene		13.4		mg/Kg		1	0.0200
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.45	mg/Kg	1	2.00	122	51.6 - 149.2
4-Bromofluorobenzene (4-BFB)	20	3.39	mg/Kg	1	2.00	170	35.7 - 159.6

Sample: 257294 - AH-3 1-1.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 77629 66550	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-02-15 2011-02-14	Prep Method: Analyzed By: Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		880	mg/Kg	50	4.00

Sample: 257294 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	77634	Date Analyzed:	2011-02-15	Analyzed By:	kg
Prep Batch:	66584	Sample Preparation:	2011-02-15	Prepared By:	kg

¹⁷ High surrogate recovery due to peak interference.
¹⁸ Estimated concentration value greater than standard range.
¹⁹ Estimated concentration value greater than standard range.
²⁰ High surrogate recovery due to peak interference.

Report Date: February 28, 2011 114-6400815		Work Order: 11021118 COG/RJU South TB			Page Number: 15 of 40 Eddy Co., NM		
Parameter	F	lag	RL Result	Un	its	Dilution	RL
DRO				ing/Kg		1	50.0
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	21	326	mg/Kg	1	100	326	70 - 130

Sample: 257294 - AH-3 1-1.5'

Laboratory:MidlandAnalysis:TPH GROQC Batch:77748Prep Batch:66683			Date Analyzed:		S 8015 D 2011-02-18 2011-02-17		Prep Method: S 5035 Analyzed By: ME Prepared By: ME		
			\mathbf{RL}						
Parameter	\mathbf{Flag}		Result		Units		Dilution	RL	
GRO			302		mg/Kg		1	2.00	
						Spike	Percent	Recovery	
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits	
Trifluorotolu	ene (TFT)		2.47	mg/Kg	1	2.00	124	36.3 - 158.9	
4-Bromofluor	obenzene (4-BFB)	22	4.41	mg/Kg	1	2.00	220	22.2 - 160.2	

Sample: 257295 - AH-3 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	77629	Date Analyzed:	2011-02-15	Analyzed By:	AR
Prep Batch:	66550	Sample Preparation	2011-02-14	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		836	mg/Kg	50	4.00

Sample: 257295 - AH-3 2-2.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	77882	Date Analyzed:	2011-02-23	Analyzed By:	kg
Prep Batch:	66796	Sample Preparation:	2011-02-23	Prepared By:	kg

continued ...

²¹ High surrogate recovery due to peak interference.
 ²² High surrogate recovery due to peak interference.

sample 257295 continued ...

			RL				
Parameter	F	lag	Result	Un	its	Dilution	RL
			RL				
Parameter	Flag		\mathbf{Result}	Units		Dilution	RL
DRO			136	mg/l	Kg	1	50.0
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		115	mg/Kg	1	100	115	70 - 130

Sample: 257295 - AH-3 2-2.5'

Laboratory:MidlandAnalysis:TPH GROQC Batch:77859Prep Batch:66777			Date Analyzed:		S 8015 D 2011-02-23 2011-02-23		Prep Method: S 503 Analyzed By: ME Prepared By: ME		
			RL					,	
Parameter	\mathbf{Flag}		\mathbf{Result}		Units		Dilution	RL	
GRÓ			29.8		mg/Kg	,	1	2.00	
~		121		TT		Spike	Percent	Recovery	
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits	
Trifluorotolu	ene (TFT)		2.46	mg/Kg	1	2.00	123	36.3 - 158.9	
4-Bromofluor	obenzene (4-BFB)		3.06	mg/Kg	1	2.00	153	22.2 - 160.2	

Sample: 257296 - AH-3 3-3.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 77629 66550	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-02-15 2011-02-14	Prep Method: Analyzed By: Prepared By:	ÁR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		1250	mg/Kg	100	4.00

Report Date: February 28, 2011 114-6400815			ck Order: 110211 G/RJU South T	Page Number: 17 of 40 Eddy Co., NM			
Sample: 25	7296 - AH-3 3	-3.5'					
Laboratory: Midland Analysis: TPH DRO - NEW QC Batch: 77882 Prep Batch: 66796			Analytical Method:S 8015 DDate Analyzed:2011-02-23Sample Preparation:2011-02-23			Prep Method: N/A Analyzed By: kg Prepared By: kg	
Parameter	Fl	ag	RL Result	Units		Dilution	RL
DRO			<50.0	mg/I	Λg	1	50.0
Surrogate n-Tricosane	Flag	Result 99.5	Units mg/Kg	Dilution 1	Spike Amount 100	Percent Recovery 100	Recovery Limits 70 - 130
Sample: 25	7296 - AH-3 3	-3.5'					
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 77859 66777		Analytical M Date Analyze Sample Prepa	ed: 2011-0	2-23	Prep Met Analyzed Prepared	By: ME

Parameter	Flag		RL Result		Units		Dilution	RL
GRO		4.18			mg/Kg		1	2.00
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.57	mg/Kg	1	2.00	128	36.3 - 158.9
4-Bromofluorobenzene (4-	BFB)		2.84	mg/Kg	1	2.00	142	22.2 - 160.2

Sample: 257297 - AH-3 4-4.5'

Chloride		1090	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	66550	Sample Preparation	n: 2011-02-14	Prepared By:	AR
QC Batch:	77629	Date Analyzed:	2011-02-15	Analyzed By:	AR
Analysis:	Chloride (Titration)	Analytical Method	: SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

4

Sample: 257298 - AH-2 1-1.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 77746 66683			Analytical Date Analy Sample Pre	vzed:	S 8021B 2011-02-18 2011-02-17		Prep Me Analyze Prepared	d By:	S 5035 ME ME
				RL						
Parameter		Flag		Result		Units	I	Dilution		RL
Benzene				14.1		mg/Kg		50		0.0200
Toluene				103		mg/Kg		50		0.0200
Ethylbenzene				74.3		mg/Kg		50		0.0200
Xylene				90.9		mg/Kg		50		0.0200
							Spike	Percent	Rec	overy
Surrogate			Flag	Result	Units	Dilution	Amount	Recovery	Liı	mits
Trifluorotoluc	ene (TFT)			52.4	mg/Kg	50	50.0	105	51.6 -	- 149.2
4-Bromofluor	obenzene (4-BF	Ϋ́B)		65.3	mg/Kg	50	50.0	131	35.7 ·	- 159.6

Sample: 257298 - AH-2 1-1.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 77629 66550	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-02-15 2011-02-14	Prep Method: Analyzed By: Prepared By:	AR
_		RL	.		
Parameter	Flag	Result	Units	Dilution	RL
Chloride		1460 1	ng/Kg	100	4.00

Sample: 257298 - AH-2 1-1.5'

Laboratory:	Midland						
Analysis:	TPH DRO - N	IEW	Analyti	cal Method:	S 8015 D	Prep M	lethod: N/A
QC Batch:	77634		Date Analyzed:		2011-02-15	Analyz	ed By: kg
Prep Batch:	66584		Sample	Preparation:	2011-02-15	Prepare	
			\mathbf{RL}				
Parameter	\mathbf{F}	ag	Result	1	Units	Dilution	RL
DRO			8400	m	g/Kg	10	50.0
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	23	818	mg/Kg	10	100	818	70 - 130

²³High surrogate recovery due to peak interference.

Sample: 257298 - AH-2 1-1.5'

Laboratory:MidlandAnalysis:TPH GROQC Batch:77748Prep Batch:66683)	Date Ana	l Method: lyzed: reparation:	S 8015 D 2011-02-18 2011-02-17		Prep Me Analyze Prepare	d By: ME
Demonster	DI	RL		TT N			
Parameter GRO	Flag	Result 2920		Units		Dilution	RL 2.00
GRU		2920		mg/Kg	·····	50	2.00
a			~~ .		Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		53.5	mg/Kg	50 50	50.0	107	36.3 - 158.9
4-Bromofluorobenzene (4	E-BFB)	73.1	mg/Kg	50	50.0	146	22.2 - 160.2
Method Blank (1)	QC Batch: 77597						
QC Batch: 77597		Date Ana	alyzed: 20)11-02-14		Analy	zed By: ME
Prep Batch: 66561		QC Prep		11-02-14			red By: ME
m .			MDL				
Parameter	Flag		Result		Uni		RL
GRO			< 0.753		mg/	Kg	2
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	74.6 - 127.8
4-Bromofluorobenzene (4	I-BFB)	1.89	mg/Kg	1	2.00	94	32.9 - 129.8
Method Blank (1)	QC Batch: 77628						
			1 1 00	11-02-15		Analy	zed By: AR
QC Batch: 77628		Date Ana	uyzed: 20	11-02-10			
QC Batch: 77628 Prep Batch: 66550		Date Ana QC Prepa	0	011-02-14			red By: AR
Prep Batch: 66550			aration: 20 MDL			Prepa	-
•	Flag		aration: 20		Uni mg/l	Prepa	red By: AR RL

Method Blank (1)	QC Batch: 77629
Method Blank (1)	QU Batch: (7029

QC Batch:	77629	Date Analyzed:	2011-02-15	Analyzed By:	AR
Prep Batch:	66550	QC Preparation:	2011-02-14	Prepared By:	\mathbf{AR}

Report Date: February 114-6400815			er: 11021118 U South TB		Page Number: 20 of 40 Eddy Co., NM			
			MD	٥L				
Parameter	Flag		Resu			nits		RL
Chloride	·····		<2.1	18	mg	g/Kg		4
Method Blank (1)	QC Batch: 77634							
QC Batch: 77634		Date Ana		2011-02-15			lyzed By:	kg
Prep Batch: 66584		QC Prepa	aration:	2011-02-15		Prep	ared By:	kg
_			MD			_		
Parameter	Flag	Result <15.7			nits		$\frac{\text{RL}}{50}$	
DRO			<15	.1	mg	/Kg	_	
Surrogate Flag	Result	Units	Di	ilution	Spike Amount	Percent Recovery		overy nits
n-Tricosane	84.0	mg/Kg		1	100	84	70 -	130
Method Blank (1) QC Batch: 77746 Prep Batch: 66683	QC Batch: 77746	Date Anal QC Prepa		2011-02-18 2011-02-17			•	ME ME
QC Batch: 77746 Prep Batch: 66683			ration: N	2011-02-17 ⁄IDL	II	Prepa		ME
QC Batch: 77746 Prep Batch: 66683 Parameter	QC Batch: 77746 Flag		ration: M Re	2011-02-17 ADL esult		Prepa		ME RL
QC Batch: 77746 Prep Batch: 66683 Parameter Benzene			ration: N	2011-02-17 ADL esult D118	mį	Prepa nits g/Kg		ME
QC Batch: 77746 Prep Batch: 66683 Parameter Benzene Toluene Ethylbenzene			ration: M Re <0.0 <0.00 <0.00	2011-02-17 ADL esult 0118 0600 0850	mg mg	Prepa nits g/Kg g/Kg g/Kg		ME RL 0.02 0.02 0.02
QC Batch: 77746 Prep Batch: 66683 Parameter Benzene Toluene Ethylbenzene			ration:	2011-02-17 ADL esult 0118 0600 0850	mg mg	Prepa nits g/Kg g/Kg		ME RL 0.02 0.02
QC Batch: 77746 Prep Batch: 66683 Parameter Benzene Toluene Ethylbenzene Xylene	Flag	QC Prepa	ration: M Re <0.0 <0.00 <0.00 <0.00 <0.00	2011-02-17 ADL esult 0118 0600 0850 0613	mg mg mg Spike	Prepa nits g/Kg g/Kg g/Kg g/Kg Percent	red By:	ME <u>RL</u> 0.02 0.02 0.02 0.02 very
QC Batch: 77746 Prep Batch: 66683 Parameter Benzene Toluene Ethylbenzene Xylene Surrogate			ration:	2011-02-17 ADL esult 0118 0600 0850 0613 Dilution	ՠք ՠք ՠք	Prepa nits g/Kg g/Kg g/Kg g/Kg	red By:	ME <u>RL</u> 0.02 0.02 0.02 0.02 very its
QC Batch: 77746 Prep Batch: 66683 Parameter Benzene Toluene Ethylbenzene Xylene Surrogate Trifluorotoluene (TFT)	Flag Flag	QC Prepa	ration: M Re <0.0 <0.00 <0.00 <0.00 <0.00	2011-02-17 ADL esult 0118 0600 0850 0613 Dilution 1	mg mg mg Spike Amount	Prepar nits g/Kg g/Kg g/Kg g/Kg Percent Recovery	red By: Recov Limi	ME RL 0.02 0.02 0.02 0.02 very its 123.5
QC Batch: 77746 Prep Batch: 66683 Parameter Benzene Toluene Ethylbenzene Xylene Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4 Method Blank (1) QC Batch: 77748	Flag Flag	QC Prepa Result 1.76	ration: N Re <0.0 <0.00 <0.00 <0.00 Units mg/Kg mg/Kg mg/Kg	2011-02-17 ADL esult 0118 0600 0850 0613 Dilution 1	mg mg mg Spike Amount 2.00	Prepar nits g/Kg g/Kg g/Kg g/Kg Percent Recovery 88 78 Analyz	Recov Limi 70.8 - 1 48.8 - zed By:	ME RL 0.02 0.02 0.02 0.02 very its 123.5
QC Batch: 77746 Prep Batch: 66683 Parameter Benzene Toluene Ethylbenzene Xylene Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4 Method Blank (1) QC Batch: 77748 Prep Batch: 66683	Flag Flag 4-BFB) QC Batch: 77748	QC Prepa Result 1.76 1.56 Date Anal	ration: N Re <0.0 <0.00 <0.00 <0.00 Units mg/Kg mg/Kg mg/Kg yzed: ration: MD	2011-02-17 ADL esult 0118 0600 0850 0613 Dilution 1 1 2011-02-18 2011-02-17 0L	mg mg Mg Spike Amount 2.00 2.00	Prepar nits g/Kg g/Kg g/Kg Percent Recovery 88 78 Analyz Prepar	Recov Limi 70.8 - 1 48.8 - zed By:	ME RL 0.02 0.02 0.02 0.02 very its 134 ME ME
QC Batch: 77746 Prep Batch: 66683 Parameter Benzene Toluene Ethylbenzene Xylene Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4 Method Blank (1) QC Batch: 77748	Flag Flag 4-BFB)	QC Prepa Result 1.76 1.56 Date Anal	ration: N Re <0.0 <0.00 <0.00 <0.00 Units mg/Kg mg/Kg mg/Kg yzed: ration:	2011-02-17 ADL esult 0118 0600 0850 0613 Dilution 1 1 2011-02-18 2011-02-18 2011-02-17 0L lt	mg mg Mg Spike Amount 2.00 2.00	Prepar nits g/Kg g/Kg g/Kg g/Kg Percent Recovery 88 78 Analyz	Recov Limi 70.8 - 1 48.8 - zed By:	ME RL 0.02 0.02 0.02 0.02 very its 123.5 134 ME

Report Date: February 28 114-6400815	3, 2011			r: 11021118 J South TB		Page Number: 21 of 40 Eddy Co., NM		
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits	
Trifluorotoluene (TFT)		1.80	mg/Kg	1	2.00	90	74.6 - 127.8	
4-Bromofluorobenzene (4-	BFB)	1.45	mg/Kg	1	2.00	72	32.9 - 129.8	
Method Blank (1)	QC Batch: 77767							
QC Batch: 77767		Date An	alyzed: 2	2011-02-14		Analy	zed By: ME	
Prep Batch: 66561		QC Prep	paration: 2	2011-02-14		Prepa	ared By: ME	
_				DL				
Parameter	Flag	Result Units					RL	
Benzene		<0.0118				/Kg	0.02	
Toluene			< 0.00			/Kg	0.02	
Ethylbenzene			< 0.00			/Kg	0.02	
Xylene			< 0.00	613	mg,	/Kg	0.02	
					Spike	Percent	Recovery	
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits	
Trifluorotoluene (TFT)		2.15	mg/Kg	1	2.00	108	70.8 - 123.5	
4-Bromofluorobenzene (4-1	BFB)	2.18	mg/Kg	1	2.00	109	48.8 - 134	
Method Blank (1)	QC Batch: 77858							
QC Batch: 77858 Prep Batch: 66777		Date An QC Prep	•	2011-02-23 2011-02-23			red By: ME red By: ME	
			М	DL				
Parameter	Flag		Res	sult	Un	its	RL	
Benzene			< 0.0		mg,		0.02	
Toluene			< 0.00		mg/		0.02	
			< 0.00		mg/		0.02	
Ethylbenzene		<0.00613 mg/Kg		613	mg/	/Kg	0.02	
Ethylbenzene								
Ethylbenzene Xylene	Flag	Result	Unite	Dilution	Spike A mount	Percent	Recovery	
Ethylbenzene Xylene Surrogate Trifluorotoluene (TFT)	Flag	Result 1.90	Units mg/Kg	Dilution	Spike Amount 2.00	Percent Recovery 95	Recovery Limits 70.8 - 123.5	

Method Blank (1)	QC Batch: 77859	
QC Batch: 77859	Date Analyzed:	Analyzed By: ME
Prep Batch: 66777	QC Preparation:	Prepared By: ME

Report Date: February 28, 114-6400815	2011		Work Order COG/RJU	Page Number: 22 of 40 Eddy Co., NM				
D. (MDI		** -	.,		DI
Parameter	Flag		Result		Uni		$\frac{\text{RL}}{2}$	
GRO		<0.753			mg/Kg			2
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery		overy nits
Trifluorotoluene (TFT)		1.97	mg/Kg	1	2.00	98	74.6 -	127.8
4-Bromofluorobenzene (4-BF	FB)	2.09	mg/Kg	1	2.00	104	32.9 -	129.8
Method Blank (1) Q	C Batch: 77882							
QC Batch: 77882		Date An	alyzed: 2	2011-02-23		Ana	lyzed By	: kg
Prep Batch: 66796				2011-02-23	Prepared I			
			MDL					
Parameter	Flag		Result		Uni	RL 50		
DRO			<15.7		mg/		50	
					Spike	Percent	Rec	covery
Surrogate Flag	Result	Units	Dilu	ition	Amount	Recovery	Li	imits
n-Tricosane	90.9	mg/Kg		1	100	91	70	- 130
Method Blank (1) Q QC Batch: 77929 Prep Batch: 66842	C Batch: 77929	Date Ana QC Prepa	llyzed: 2 aration: 2	011-02-25 011-02-25			zed By: ared By:	ME ME
			MDL					
Parameter	Flag		Result		Uni	ts		RL
GRO	0		< 0.753		mg/			2
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent	Recc Lin	-
Trifluorotoluene (TFT)	r lag	1.92	mg/Kg	1	2.00	Recovery 96		$\frac{110}{127.8}$
4-Bromofluorobenzene (4-BF	P)	2.22	mg/Kg	1	2.00	90 111	74.0 - 32.9 -	

Method Blank (1) QC Batch: 77932

QC Batch:	77932	Date Analyzed:	2011-02-25	Analyzed By:	kg
Prep Batch:	66844	QC Preparation:	2011-02-25	Prepared By:	kg

114-6400815				er: 1102111 U South TE	Page Number: 23 of 40 Eddy Co., NM					
			MD							
Parameter	Flag		Resu			Units				RI
DRO			<15	.7		mg/K	g			50
					Spike		Perce	nt	R	lecover
Surrogate Flag	Result	Units	Di	lution	Amount		Recove			Limits
n-Tricosane	91.4	mg/Kg		1	100	1	91	j		0 - 13
Laboratory Control Spike (QC Batch: 77597		Date Anal	vzed:	2011-02-14				Analy	zed By	r: MH
Prep Batch: 66561		QC Prepai		2011-02-14					red By	
								•	v	
	LCS				Spike	Matr	iv			Rec.
Param	Resul		nits	Dil.	Amount	Resu		Rec.		Limit
GRO	16.7		Kg	1	20.0	<0.7		84		1.8 - 9
Percent recovery is based on th	e spike result. I	RPD is bas	sed on th	ie spike and	l spike dupl	icate res	sult.			
	LCSD			Spike	Matrix		Rec.			
	Result	Units		Amount	Result	Rec.	Limi	t	RPD	Lim
GRO	Result 16.4	mg/Kg	1	Amount 20.0	Result <0.753	82	Limi 61.8 -	t	RPD 2	Lim
GRO	Result 16.4	mg/Kg	1	Amount 20.0	Result <0.753	82	Limi 61.8 -	t		Lim
Param GRO Percent recovery is based on th	Result 16.4 he spike result. 1	mg/Kg RPD is bas	1 sed on th	Amount 20.0	Result <0.753 l spike dupl	82 icate res	Limit 61.8 - sult.	t 97	2	Lim 20
GRO Percent recovery is based on th	Result 16.4 he spike result. I LCS	mg/Kg RPD is bas LCSD	1 sed on th	Amount 20.0 he spike and	Result <0.753	82 icate res LC	Limit 61.8 - sult. S L	t	2	Lim
GRO	Result 16.4 he spike result. 1	mg/Kg RPD is bas LCSD	1 sed on th	Amount 20.0 he spike and its Dil.	Result <0.753 l spike dupl Spike	82 icate res LC	Limit 61.8 - sult. S L c. F	t 97 CSD	2 	Lim 20 Rec. Jimit
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT)	Result 16.4 he spike result. I LCS Result 1.99	mg/Kg RPD is bas LCSD Result	1 sed on th : Uni	Amount 20.0 he spike and its Dil. Kg 1	Result <0.753 l spike dupl Spike Amount	82 icate res LC: t Rec	Limit 61.8 - sult. S L 2. H	t 97 CSD Rec.	2 74.	Lim 20 Rec. Jimit 6 - 12
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (QC Batch: 77628	Result 16.4 te spike result. I LCS Result 1.99) 1.94 (LCS-1)	mg/Kg RPD is bas LCSD Result 2.02 1.97 Date Anal	1 sed on th mg/ mg/ yzed:	Amount 20.0 he spike and its Dil. Kg 1	Result <0.753 I spike dupl Spike Amount 2.00	82 icate res LC t Rec 100	Limi 61.8 - sult. S L ⁱ 2. F	t 97 CSD Rec. 101 98 Analy	2 74.	Lim 20 Rec. .imit 6 - 12 ⁴ - 121
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (QC Batch: 77628 Prep Batch: 66550	Result 16.4 16.4 16.4 LCS Result 1.99 1.94 (LCS-1)	mg/Kg RPD is bas LCSD Result 2.02 1.97 Date Anal QC Prepar	1 sed on th mg/ mg/ yzed: ration:	Amount 20.0 he spike and its Dil. Kg 1 Kg 1 2011-02-15 2011-02-14	Result <0.753 spike dupl Spike Amound 2.00 2.00 Spike	82 icate res LCS Rec 100 97	Limi 61.8 - sult. S L c. F	t 97 CSD Rec. 101 98 Analy Prepa	2 L 74. 53.9 zzed By red By	Lim 20 Rec. .imit 6 - 124 - 121 r: AF : AF : AF : AF
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (QC Batch: 77628 Prep Batch: 66550 Param	Result 16.4 16.4 16.4 LCS Result 1.99 1.94 (LCS-1) LCS Resu	mg/Kg RPD is bas LCSD Result 2.02 1.97 Date Anal QC Prepar	1 sed on th mg/ mg/ yzed: ration: nits	Amount 20.0 he spike and its Dil. Kg 1 Kg 1 2011-02-15	Result <0.753 spike dupl Spike Amount 2.00 2.00 Spike Amount	82 icate res LCS t Rec 100 97 Mata Res	Limi 61.8 - sult. S L c. F D	t 97 CSD Rec. 101 98 Analy Prepa Rec.	2 L 74. 53.9 vzed By	Lim 20 Rec. Jimit 6 - 124 - 121 r: AF : AF : AF : AF : AF
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (QC Batch: 77628 Prep Batch: 66550 Param Chloride	Result 16.4 ie spike result. I LCS Result 1.99) 1.94 (LCS-1) LCS Result 96.4	mg/Kg RPD is bas LCSD Result 2.02 1.97 Date Anal QC Prepar	1 sed on th mg/ mg/ yzed: ration: nits g/Kg	Amount 20.0 he spike and its Dil. Kg 1 Kg 1 2011-02-15 2011-02-14 Dil. 1	Result <0.753 I spike dupl Spike Amount 2.00 2.00 Spike Amount 100	82 icate res LC3 Rec 100 97 Mata Resu <2.	Limi 61.8 - sult. S L c. F D T	t 97 CSD Rec. 101 98 Analy Prepa	2 L 74. 53.9 vzed By	Lim 20 Rec. Jimit 6 - 124 - 121 r: AF : AF : AF : AF : AF
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (QC Batch: 77628 Prep Batch: 66550 Param Chloride	Result 16.4 16.4 16.4 16.4 LCS Result 1.99 1.94 (LCS-1) (LCS-1) LCS Resu 96.4 re spike result. I	mg/Kg RPD is bas LCSD Result 2.02 1.97 Date Anal QC Prepar	1 sed on th mg/ mg/ yzed: ration: nits g/Kg	Amount 20.0 he spike and its Dil. Kg 1 Kg 1 2011-02-15 2011-02-14 Dil. 1 he spike and	Result <0.753 I spike dupl Spike Amount 2.00 2.00 Spike Amount 100 I spike dupl	82 icate res LC3 Rec 100 97 Mata Resu <2.	Limi 61.8 - sult. S L c. F D T f D T f Sult.	t 97 CSD Rec. 101 98 Analy Prepa Rec. 96	2 L 74. 53.9 vzed By	Lim 20 Rec. .imit 6 - 122 - 121 - 121 - 121 - 121 - 121 - 125 - 125 - 11 - 125 - 11
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (QC Batch: 77628	Result 16.4 ie spike result. I LCS Result 1.99) 1.94 (LCS-1) LCS Result 96.4	mg/Kg RPD is bas LCSD Result 2.02 1.97 Date Anal QC Prepar	1 sed on th mg/ mg/ yzed: ration: nits g/Kg	Amount 20.0 he spike and its Dil. Kg 1 Kg 1 2011-02-15 2011-02-14 Dil. 1	Result <0.753 I spike dupl Spike Amount 2.00 2.00 Spike Amount 100	82 icate res LC3 Rec 100 97 Mata Resu <2.	Limi 61.8 - sult. S L c. F D T	t 97 CSD Rec. 101 98 Analy Prepa Rec. 96	2 L 74. 53.9 vzed By	imit 6 - 124 - 121. 7: AF 5: AF

Report Date: February 28, 2011 114-6400815				der: 1102 JU South			Page		r: 24 of 40 y Co., NM
Laboratory Control Spike (LC	S-1)								
QC Batch: 77629		Date An	alyzed:	2011-02	-15		A	nalyzed	By: AR
Prep Batch: 66550		QC Prep	paration:	2011-02	-14		Pi	repared	By: AR
	LC	S			Spike	Mat	rix		Rec.
Param	Res		Units	Dil.	Amount			Rec.	Limit
Chloride	96.	.2 r	ng/Kg	1	100	<2.		96	85 - 115
Percent recovery is based on the sp	ike result.			the spike	and spike d	uplicate re	sult.		
	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amoun		Rec.	Limit	RPL	
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	6	20
Percent recovery is based on the sp Laboratory Control Spike (LC:				one opine	and spine a	apricate 10			
QC Batch: 77634		Data Ar	nalyzed:	2011-02	2-15		A	Analyzed	By: kg
$Q \cup Datch, I \cap D^{4}$							-		•••0
•					2-15		F	repared	By: kg
Prep Batch: 66584		QC Pre			2-15		F	Prepared	By: kg
•	LCS	QC Prej				Matrix		Prepared	
•	LCS Resu	QC Prej			2-15 Spike Amount	Matrix Result		•	By: kg Rec. Limit
Prep Batch: 66584		QC Prej 5 lt U	paration	: 2011-02	Spike			• •	Rec.
Prep Batch: 66584 Param	Resu 234	QC Prep 5 1t U mg	paration Inits g/Kg	: 2011-02 Dil.	Spike Amount 250	Result <15.7	Rec 94	• •	Rec.
Prep Batch: 66584 Param DRO	Resu 234 ike result.	QC Prep 5 1t U mg	paration Inits g/Kg	2011-02 Dil. 1 the spike	Spike Amount 250 and spike d	Result <15.7	Rec 94 sult.	• •	Rec. Limit 7.5 - 144.1
Prep Batch: 66584 Param DRO	Resu 234	QC Prep 5 1t U mg	paration Inits g/Kg	Dil. 1 the spike Spike	Spike Amount 250 and spike d Matrix	Result <15.7 uplicate re	Rec 94	• •	Rec. Limit 7.5 - 144.1 RPD
Prep Batch: 66584 Param DRO Percent recovery is based on the sp	Resu 234 ike result. LCSD	QC Prep 5 It U RPD is b	paration Units g/Kg pased on	2011-02 Dil. 1 the spike	Spike Amount 250 and spike d	Result <15.7 uplicate re Rec.	Rec 94 sult. Rec.	47 	Rec. Limit 7.5 - 144.1 RPD
Prep Batch: 66584 Param DRO Percent recovery is based on the sp Param	Resu 234 ike result. LCSD Result 263	QC Prep 1t U RPD is b Units mg/Kg	Dits g/Kg pased on Dil. 1	Dil. 1 the spike Amount 250	Spike Amount 250 and spike d Matrix Result <15.7	Result <15.7	Rec 94 sult. Rec. Limit 7.5 - 144.1	47 	Rec. Limit 7.5 - 144.1 RPD D Limit
Prep Batch: 66584 Param DRO Percent recovery is based on the sp Param DRO	Resu 234 ike result. LCSD Result 263	QC Prep 1t U RPD is b Units mg/Kg	Dits g/Kg pased on Dil. 1	Dil. 1 the spike Amount 250	Spike Amount 250 and spike d Matrix Result <15.7	Result <15.7	Rec 94 sult. Rec. Limit 7.5 - 144.1	47 	Rec. Limit 7.5 - 144.1 RPD D Limit
Prep Batch: 66584 Param DRO Percent recovery is based on the sp Param DRO Percent recovery is based on the sp LCS Surrogate Result	Resu 234 ike result. LCSD Result 263 ike result. LCSD Result	QC Prep Lt U RPD is b Units mg/Kg RPD is b Un	Units g/Kg pased on Dil. 1 pased on hits	Dil. 1 the spike Amount 250	Spike Amount 250 and spike d Matrix Result <15.7 and spike d Spike Amount	Result <15.7 uplicate res Rec. 105 47 uplicate res LCS Rec.	Rec 94 sult. Rec. Limit 7.5 - 144.1 sult. LC Rd	47 87 1 12 85D ec.	Rec. Limit 7.5 - 144.1 RPD Limit 20 Rec. Limit
Prep Batch: 66584 Param DRO Percent recovery is based on the sp Param DRO Percent recovery is based on the sp LCS	Resu 234 ike result. LCSD Result 263 ike result. LCSD	QC Prep Lt U RPD is b Units mg/Kg RPD is b Un	Dilts Dilts Dilta Dilta Dilta Dilta Dilta Dilta	2011-02 Dil. 1 the spike Amount 250 the spike	Spike Amount 250 and spike d Matrix Result <15.7 and spike d Spike	Result <15.7 uplicate res Rec. 105 47 uplicate res LCS	Rec 94 sult. Rec. Limit 7.5 - 144.1 sult. LC Rd	47 87 87 87 87 87 87 87 87 87 87 87 87 87	Rec. Limit 7.5 - 144.1 RPD Limit 20 Rec.
Prep Batch: 66584 Param DRO Percent recovery is based on the sp Param DRO Percent recovery is based on the sp LCS Surrogate Result	Resu 234 ike result. LCSD Result 263 ike result. LCSD Result 127 S-1)	QC Prep Lt U RPD is b Units mg/Kg RPD is b Un	Dilts Dilts Dilta Dilta Dilta Assed on Dilta Assed on Dilta Di Dilta Di	2011-02 Dil. 1 the spike Amount 250 the spike Dil.	Spike Amount 250 and spike d Matrix Result <15.7 and spike d Spike Amount 100	Result <15.7 uplicate res Rec. 105 47 uplicate res LCS Rec.	Rec. 94 sult. Rec. Limit 7.5 - 144.1 sult. LC Ra 12 12	47 87 1 12 85D ec.	Rec. Limit 7.5 - 144.1 RPD Limit 20 Rec. Limit 70 - 130 By: ME
Prep Batch: 66584 Param DRO Percent recovery is based on the sp Param DRO Percent recovery is based on the sp. LCS Surrogate Result n-Tricosane 106 Laboratory Control Spike (LCS QC Batch: 77746	Resu 234 ike result. LCSD Result 263 ike result. LCSD Result 127 S-1)	QC Prep lt U RPD is b Units mg/Kg RPD is b Un mg/Kg RPD is b Un Character QC Prep	Dilts Dilts Dilta Dilta Dilta Assed on Dilta Assed on Dilta Di Dilta Di	Dil. 1 the spike Amount 250 the spike Dil. 1 2011-02-	Spike Amount 250 and spike d Matrix Result <15.7 and spike d Spike Amount 100	Result <15.7 uplicate res Rec. 105 47 uplicate res LCS Rec. 106	Rec. 94 sult. Rec. Limit 7.5 - 144.1 sult. LC Ra 12 12	RPI L 12 SD ec. 27	Rec. Limit 7.5 - 144.1 RPD D Limit 20 Rec. Limit 70 - 130 By: ME By: ME
Prep Batch: 66584 Param DRO Percent recovery is based on the sp Param DRO Percent recovery is based on the sp LCS Surrogate Result n-Tricosane 106 Laboratory Control Spike (LCS QC Batch: 77746 Prep Batch: 66683	Resu 234 ike result. LCSD Result 263 ike result. LCSD Result 127 S-1)	QC Prep It U RPD is b Units mg/Kg RPD is b Un mg/Kg RPD is b Un Character QC Prep	Units g/Kg pased on Dil. 1 pased on hits /Kg alyzed: aration:	2011-02 Dil. 1 the spike Spike Amount 250 the spike Dil. 1 2011-02- 2011-02-	Spike Amount 250 and spike d Matrix Result <15.7 and spike d Spike Amount 100	Result <15.7 uplicate res Rec. 105 47 uplicate res LCS Rec. 106	Rec. 94 sult. Limit 7.5 - 144.1 sult. LC Ra 12 Ar Pr	AT AT AT AT AT AT AT AT AT AT	Rec. Limit 7.5 - 144.1 RPD D Limit 20 Rec. Limit 70 - 130 By: ME By: ME By: ME Rec.
Prep Batch: 66584 Param DRO Percent recovery is based on the sp Param DRO Percent recovery is based on the sp LCS Surrogate Result n-Tricosane 106 Laboratory Control Spike (LCS QC Batch: 77746 Prep Batch: 66683 Param	Resu 234 ike result. LCSD Result 263 ike result. LCSD Result 127 5-1) LCS Resul	QC Prep It U RPD is b Units mg/Kg RPD is b Units mg/Kg RPD is b Units durits controls units mg/Kg RPD is b Units t U t U t U	Units g/Kg pased on Dil. 1 pased on hits /Kg alyzed: aration:	2011-02 Dil. 1 the spike Amount 250 the spike Dil. 1 2011-02- 2011-02- 2011-02- Dil.	Spike Amount 250 and spike d Matrix Result <15.7 and spike d Spike Amount 100	Result <15.7 uplicate res Rec. 105 47 uplicate res LCS Rec. 106 Matrix Result	Rec. 94 sult. Limit 7.5 - 144.1 sult. LC Ra 11 Pr Rec	47 RPI L 12 SD ec. 27 nalyzed J epared J	Rec. Limit 7.5 - 144.1 RPD D Limit 20 Rec. Limit 70 - 130 By: ME By: ME By: ME Rec. Limit
Prep Batch: 66584 Param DRO Percent recovery is based on the sp Param DRO Percent recovery is based on the sp LCS Surrogate Result n-Tricosane 106 Laboratory Control Spike (LCS QC Batch: 77746 Prep Batch: 66683	Resu 234 ike result. LCSD Result 263 ike result. LCSD Result 127 S-1)	QC Prep lt U RPD is b Units mg/Kg RPD is b Units un dur Un mg/ Un mg/ L Un mg/ Un Un mg/ Un mg/ Un mg/ Un mg/ Un mg/ L Un mg/ L Un mg/ L Un mg/ L L L L L L L L L L L L L	Units g/Kg pased on Dil. 1 pased on hits /Kg alyzed: aration:	2011-02 Dil. 1 the spike Spike Amount 250 the spike Dil. 1 2011-02- 2011-02-	Spike Amount 250 and spike d Matrix Result <15.7 and spike d Spike Amount 100	Result <15.7 uplicate res Rec. 105 47 uplicate res LCS Rec. 106	Rec 94 sult. Rec. Limit 7.5 - 144.1 sult. LC Ra 12 12 N Pr Rec 93	<u>47</u> RPI 1 12 SSD ec. 27 halyzed J epared I epared I	Rec. Limit 7.5 - 144.1 RPD D Limit 20 Rec. Limit 70 - 130 By: ME By: ME By: ME Rec.

control spikes continued

LCS			Spike	Matrix		Rec.
Result	Units	Dil.	Amount	Result	Rec.	Limit
1.83	mg/Kg	1	2.00	< 0.00850	92	81.1 - 112.2
5.44	mg/Kg	1	6.00	< 0.00613	91	81.7 - 111.5
	Result 1.83	Result Units 1.83 mg/Kg	ResultUnitsDil.1.83mg/Kg1	ResultUnitsDil.Amount1.83mg/Kg12.00	ResultUnitsDil.AmountResult1.83mg/Kg12.00<0.00850	ResultUnitsDil.AmountResultRec.1.83mg/Kg12.00<0.00850

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	1.86	mg/Kg	1	2.00	< 0.0118	93	76.4 - 118.4	0	20
Toluene	1.88	mg/Kg	1	2.00	< 0.00600	94	81.8 - 111.9	2	20
Ethylbenzene	1.89	mg/Kg	1	2.00	< 0.00850	94	81.1 - 112.2	3	20
Xylene	5.62	mg/Kg	1	6.00	< 0.00613	94	81.7 - 111.5	3	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.84	1.70	mg/Kg	1	2.00	92	85	69 - 123.3
4-Bromofluorobenzene (4-BFB)	2.20	2.07	mg/Kg	1	2.00	110	104	64.9 - 131.9

Laboratory Control Spike (LCS-1)

QC Batch:	77748	Date Analyzed:	2011-02-18	Analyzed By:	ME
Prep Batch:	66683	QC Preparation:	2011-02-17	Prepared By:	ME

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO	14.1	mg/Kg	1	20.0	< 0.753	70	61.8 - 97

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	13.9	mg/Kg	1	20.0	<0.753	70	61.8 - 97	1	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	\mathbf{Result}	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.03	1.91	mg/Kg	1	2.00	102	96	74.6 - 124
4-Bromofluorobenzene (4-BFB)	1.74	1.64	mg/Kg	1	2.00	87	82	53.9 - 121.1

Laboratory Control Spike (LCS-1)

QC Batch:	77767	Date Analyzed:	2011-02-14	Analyzed By:	ME
Prep Batch:	66561	QC Preparation:	2011-02-14	Prepared By:	ME

Report Date: February 28, 2011 114-6400815		Work (COG/	Page Number: 26 of 40 Eddy Co., NM				
Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.05	mg/Kg	1	2.00	< 0.0118	102	76.4 - 118.4
Toluene	2.05	mg/Kg	1	2.00	< 0.00600	102	81.8 - 111.9
Ethylbenzene	2.06	mg/Kg	1	2.00	< 0.00850	103	81.1 - 112.2
Xylene	6.19	mg/Kg	1	6.00	< 0.00613	103	81.7 - 111.5

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	\mathbf{Result}	Rec.	Limit	RPD	Limit
Benzene	2.02	mg/Kg	1	2.00	< 0.0118	101	76.4 - 118.4	2	20
Toluene	2.01	mg/Kg	1	2.00	< 0.00600	100	81.8 - 111.9	2	20
Ethylbenzene	2.05	mg/Kg	1	2.00	< 0.00850	102	81.1 - 112.2	0	20
Xylene	6.18	mg/Kg	1	6.00	< 0.00613	103	81.7 - 111.5	0	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.20	2.12	mg/Kg	1	2.00	110	106	69 - 123.3
4-Bromofluorobenzene (4-BFB)	2.38	2.26	mg/Kg	1	2.00	119	113	64.9 - 131.9

Laboratory Control Spike (LCS-1)

QC Batch:	77858	Date Analyzed:	2011-02-23	Analyzed By:	ME
Prep Batch:	66777	QC Preparation:	2011-02-23	Prepared By:	\mathbf{ME}

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	\mathbf{Result}	Rec.	Limit
Benzene	1.96	mg/Kg	1	2.00	< 0.0118	98	76.4 - 118.4
Toluene	1.99	mg/Kg	1	2.00	< 0.00600	100	81.8 - 111.9
Ethylbenzene	2.04	mg/Kg	1	2.00	< 0.00850	102	81.1 - 112.2
Xylene	6.14	mg/Kg	1	6.00	< 0.00613	102	81.7 - 111.5

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	\mathbf{Result}	Rec.	Limit	RPD	Limit
Benzene	1.96	mg/Kg	1	2.00	< 0.0118	98	76.4 - 118.4	0	20
Toluene	1.95	mg/Kg	1	2.00	< 0.00600	98	81.8 - 111.9	2	20
Ethylbenzene	2.01	mg/Kg	1	2.00	< 0.00850	100	81.1 - 112.2	2	20
Xylene	6.05	mg/Kg	1	6.00	< 0.00613	101	81.7 - 111.5	2	20

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

	\mathbf{LCS}	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.01	1.97	mg/Kg	1	2.00	100	98	69 - 123.3

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Report Date: February 28, 2011 114-6400815		We C			umber: Eddy	Co., NI				
control spikes continued										_
-	LCS	LCSD			Spik		LCS	LCSD		Rec.
Surrogate	Result		Units	Dil.	Amou		Rec.	Rec.		imit
4-Bromofluorobenzene (4-BFB)	2.46	2.39	mg/Kg	1	2.00)	123	120	64.9	- 131
Laboratory Control Spike (I	LCS-1)									
QC Batch: 77859]	Date Analy	zed: 2011	1-02-23				Analy	zed By	: MI
Prep Batch: 66777		QC Prepar		1-02-23					ared By	
	LCS	1			Spike]	Matrix			Rec.
Param	Resul				Amount		Result	Rec.		Limit
GRO	15.6	mg	/Kg 1		20.0		< 0.753	78	6	1.8 - 9
Percent recovery is based on the	spike result. H	RPD is bas	ed on the sp	oike and	ł spike du	plicat	te resul	lt.		
	LCSD		Sp	ike	Matrix			Rec.		RP
Param	Result	Units		ount	Result	Rec		Limit	RPD	Lin
				0.0	< 0.753	80		.8 - 97	2	20
Percent recovery is based on the	spike result. I LCS	LCSD	ed on the sp	oike and	l spike dı Spik	iplicat œ	te resul LCS	lt. LCSD		Rec.
Percent recovery is based on the Surrogate Trifluorotoluene (TFT)	spike result. I	RPD is bas LCSD			l spike dı	iplicat œ int)	te resul	lt.	<u>I</u> 74.	Rec. Jimit 6 - 12
Percent recovery is based on the Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (I QC Batch: 77882	spike result. F LCS Result 1.98 2.20 LCS-1)	RPD is bas LCSD Result 2.02	ed on the sp Units mg/Kg mg/Kg yzed: 201	oike and Dil. 1	l spike du Spik Amou 2.00 2.00	iplicat œ int)	te resul LCS Rec. 99	t. LCSD Rec. 101 112 Ana	<u>I</u> 74.	Rec. .imit 6 - 12 - 121 y: k
Percent recovery is based on the Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (I QC Batch: 77882 Prep Batch: 66796	spike result. F LCS Result 1.98 2.20 LCS-1)	RPD is bas LCSD Result 2.02 2.24 Date Anal QC Prepar	ed on the sp Units mg/Kg mg/Kg yzed: 201 ration: 201	Dike and Dil. 1 1 1-02-23 1-02-23	l spike du Spik Amou 2.00 2.00	nplicat se int))	te resul LCS Rec. 99 110	t. LCSD Rec. 101 112 Ana Prep	I 74. 53.9 lyzed E bared B	Rec. .imit 6 - 12 - 121 y: k y: k Rec.
Percent recovery is based on the Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (I QC Batch: 77882 Prep Batch: 66796 Param	spike result. F LCS Result 1.98 2.20 LCS-1) LCS Result	RPD is bas LCSD Result 2.02 2.24 Date Anal QC Prepar	ed on the sp Units mg/Kg mg/Kg yzed: 201 ration: 201 ts Dil.	Dike and Dil. 1 1 1-02-23 1-02-23	l spike du Spik Amou 2.00 2.00 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	nplicat se int))) Ma Re	te resul LCS Rec. 99 110	t. LCSD Rec. 101 112 Ana Prep Rec.	I 74. 53.9 lyzed B bared B	Rec. .imit 6 - 12 - 121 y: k y: k Rec. .imit
Percent recovery is based on the <u>Surrogate</u> Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (I QC Batch: 77882 Prep Batch: 66796 Param DRO	spike result. F LCS Result 1.98 2.20 CS-1) LCS Result 242	PD is bas LCSD Result 2.02 2.24 Date Anal QC Prepar	ed on the sp Units mg/Kg mg/Kg yzed: 201 ration: 201 ts Dil. Kg 1	Dike and Dil. 1 1-02-23 1-02-23	l spike du Spik Amou 2.00 2.00 2.00 8 Spike mount 250	Iplicat se Int)) Ma Re	te resul LCS Rec. 99 110 atrix esult 15.7	t. LCSD Rec. 101 112 Ana Prep Rec. 97	I 74. 53.9 lyzed B bared B	Rec. .imit 6 - 12 - 121 y: k y: k Rec. .imit
Prep Batch: 66796 Param DRO Percent recovery is based on the	spike result. F LCS Result 1.98 2.20 CS-1) LCS Result 242 spike result. F LCSD	RPD is bas LCSD Result 2.02 2.24 Date Anal QC Prepar C Uni mg/J RPD is bas	ed on the sp Units mg/Kg mg/Kg yzed: 201 ration: 201 ts Dil. Kg 1 ed on the sp Spik	Dike and Dil. 1 1-02-23 1-02-23 A Dike and ce N	l spike du Spik Amou 2.00 2.00 2.00 2.00 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1	Iplicat Re Int)) Ma Re <:	te resul LCS Rec. 99 110 atrix ssult 15.7 te resul F	t. LCSD Rec. 101 112 Ana Prep Rec. 97 t. Rec.	I 74. 53.9 lyzed E bared B I 47.5	Rec. .imit 6 - 12 - 121 y: k y: k y: k Rec. .imit - 144 RP
Percent recovery is based on the <u>Surrogate</u> Trifluorotoluene (TFT) <u>4-Bromofluorobenzene (4-BFB)</u> Laboratory Control Spike (I QC Batch: 77882 Prep Batch: 66796 Param <u>DRO</u> Percent recovery is based on the Param	spike result. F LCS Result 1.98 2.20 (CS-1) (CS-1) LCS Result 242 spike result. F LCSD Result	RPD is bas LCSD Result 2.02 2.24 Date Anal QC Prepar C Uni mg/J RPD is bas Units 1	ed on the sp Units mg/Kg mg/Kg yzed: 201 ration: 201 ts Dil. Kg 1 ed on the sp Spik Dil. Amou	Dike and Dil. 1 1 1-02-23 1-02-23 A A Dike and See M unt H	l spike du Spik Amou 2.00 2.00 2.00 2.00 1 spike 1 spike du Aatrix Result	nplicat ae int)) Ma Re <: iplicat Rec.	te resul LCS Rec. 99 110 atrix ssult 15.7 te resul F	t. LCSD Rec. 101 112 Ana Prep Rec. 97 t. Rec. imit	I 74. 53.9 lyzed E bared B I 47.5 RPD	Rec. .imit 6 - 124 - 121 y: k y: k y: k Rec. .imit - 144 RPI Lim
Percent recovery is based on the Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (I QC Batch: 77882 Prep Batch: 66796 Param DRO Percent recovery is based on the Param DRO	spike result. F LCS Result 1.98 2.20 (CS-1) (CS-1) LCS Result 242 spike result. F LCSD Result 241 r	RPD is bas LCSD Result 2.02 2.24 Date Anal QC Prepar C Uni mg/I RPD is bas Units I ng/Kg	ed on the sp Units mg/Kg mg/Kg yzed: 201 ration: 201 ts Dil. Kg 1 ed on the sp Spik Dil. Amou 1 250	Dike and Dil. 1 1 1-02-23 1-02-23 1-02-23 A Dike and ce M int H	l spike du Spik Amou 2.00 2.00 2.00 2.00 1.00 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Iplicat Se Int)) Ma Re <: Iplicat Rec. 96	te resul LCS Rec. 99 110 110 15.7 te resul F L 47.5	t. LCSD Rec. 101 112 Ana Prep Rec. 97 t. Rec. 97 t. Rec. 144.1	I 74. 53.9 lyzed E bared B I 47.5	Rec. .imit 6 - 12 - 121 y: k y: k y: k Rec. .imit - 144 RP Lim
Percent recovery is based on the Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (I QC Batch: 77882 Prep Batch: 66796 Param DRO Percent recovery is based on the Param DRO	spike result. F LCS Result 1.98 2.20 (CS-1) (CS-1) LCS Result 242 spike result. F LCSD Result 241 r	RPD is bas LCSD Result 2.02 2.24 Date Anal QC Prepar C Uni mg/I RPD is bas Units I ng/Kg	ed on the sp Units mg/Kg mg/Kg yzed: 201 ration: 201 ts Dil. Kg 1 ed on the sp Spik Dil. Amou 1 250	Dike and Dil. 1 1 1-02-23 1-02-23 1-02-23 A Dike and ce M int H	l spike du Spik Amou 2.00 2.00 2.00 2.00 1.00 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Iplicat Se Int)) Ma Re <: Iplicat Rec. 96	te resul LCS Rec. 99 110 110 15.7 te resul F L 47.5	t. LCSD Rec. 101 112 Ana Prep Rec. 97 t. Rec. 97 t. Rec. 144.1	I 74. 53.9 lyzed E bared B 1 47.5 RPD	Rec. .imit 6 - 12 - 121 y: k y: k y: k Rec. .imit - 144 RP Lim
Percent recovery is based on the Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (I QC Batch: 77882 Prep Batch: 66796 Param DRO Percent recovery is based on the Param DRO	spike result. F LCS Result 1.98 2.20 (CS-1) (CS-1) LCS Result 242 spike result. F LCSD Result 241 r	RPD is bas LCSD Result 2.02 2.24 Date Anal QC Prepar C Uni mg/I RPD is bas Units I ng/Kg	ed on the sp Units mg/Kg mg/Kg yzed: 201 ration: 201 ts Dil. Kg 1 ed on the sp Spik Dil. Amou 1 250	Dike and Dil. 1 1 1-02-23 1-02-23 1-02-23 A Dike and ce M int H	l spike du Spik Amou 2.00 2.00 2.00 2.00 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Iplicat Rec. 96 Iplicat	te resul LCS Rec. 99 110 110 15.7 te resul 47.5 te resul	t. LCSD Rec. 101 112 Ana Prep Rec. 97 t. Rec. 97 t. Rec. 144.1	I 74. 53.9 lyzed E bared B I 47.5 RPD 0	Rec. <u>iimit</u> 5 - 12 - 121 y: k y: k Rec. <u>iimit</u> - 144 RP Lim 20
Percent recovery is based on the Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (I QC Batch: 77882 Prep Batch: 66796 Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the	spike result. F	RPD is bas LCSD Result 2.02 2.24 Date Anal QC Prepar C Uni mg/I RPD is bas Units I ng/Kg	ed on the sp Units mg/Kg mg/Kg yzed: 201 ration: 201 ts Dil. Kg 1 ed on the sp Spik Dil. Amou 1 250 ed on the sp	Dike and Dil. 1 1 1-02-23 1-02-23 1-02-23 A Dike and See M unt H Dike and	l spike du Spik Amou 2.00 2.00 2.00 2.00 1.00 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Iplicat Re Int)) Ma Re C Iplicat Rec. 96 Iplicat	te resul LCS Rec. 99 110 110 15.7 te resul F L 47.5	t. LCSD Rec. 101 112 Ana Prep Rec. 97 t. Rec. 97 t. Rec. 144.1 t.	I 74. 53.9 lyzed E bared B I 47.5 RPD 0	Rec. .imit 6 - 124 - 121 y: k _i y: k _i Rec.

Report Date: February 28, 2011 114-6400815			Page Number: 28 of 40 Eddy Co., NM							
Laboratory Control Spike (LC	CS-1)									
QC Batch: 77929		Date A	nalyzed:	2011-02	-25			Ar	alyzed I	By: ME
Prep Batch: 66842			paration:						epared E	•
	T CI	7			a	.,				P
Param	LCS Resu		Units	Dil.	-	ike ount	Matr Resu		ec.	Rec. Limit
GRO	14.(mg/Kg	1		0.0	<0.7		70	61.8 - 97
Percent recovery is based on the s		· <u> </u>		the spike						
	LCSD			-	-	-				מתת
Param	Result	Units	Dil.	Spike Amount	Ma t Res		Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.1	mg/Kg		20.0		753		61.8 - 97	8	20
Percent recovery is based on the s					··· ·					
recent recovery is based on one s	-			one spine	and spi	-			_	_
a	LCS	LC		· · · · ·	D .1	Spike				Rec.
Surrogate	Result 1.82	: Res 1.5				Amount				Limit
			84 m	ıg/Kg	1	2.00	91			4.6 - 124
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC	2.17	2.5	20 m	ng/Kg	1	2.00	108			.9 - 121.1
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844	2.17	2.: Date A		2011-02	2-25	2.00	108	А) 53 nalyzed repared	By: kg
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932	2.17 CS-1)	2.: Date A QC Pre	20 m .nalyzed:	2011-02	2-25 2-25			А	nalyzed	By: kg By: kg
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844	2.17 CS-1) LCS	2.: Date A QC Pre	20 m nalyzed: eparation	2011-02 2011-02 2011-02	2-25 2-25 Spika	9	Matrix	A P	nalyzed repared	By: kg By: kg Rec.
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844 Param	2.17 CS-1)	2. Date A QC Pre	20 m nalyzed: eparation Units	2011-02	2-25 2-25	9		А	nalyzed repared	By: kg By: kg Rec. Limit
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932	2.17 CS-1) LCS Resul 241	2.: Date A QC Pro tn	20 m nalyzed: eparation Units ng/Kg	2011-02 1: 2011-02 1: 2011-02 Dil. 1	2-25 2-25 Spike Amou 250	e nt	Matrix Result <15.7	A P Rec. 96	nalyzed repared	By: kg By: kg Rec.
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844 Param DRO	2.17 CS-1) LCS Resul 241 pike result.	2.: Date A QC Pro tn	20 m nalyzed: eparation Units ng/Kg	2011-02 2011-02 2011-02 2011-02 Dil. 1 the spike	2-25 2-25 Amou 250 and spil	e nt ke dupli	Matrix Result <15.7	A P Rec. 96 sult.	nalyzed repared	By: kg By: kg Rec. Limit 5 - 144.1
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844 Param DRO Percent recovery is based on the s	2.17 CS-1) LCS Resul 241	2.: Date A QC Pro tn	20 m nalyzed: eparation Units ng/Kg	2011-02 1: 2011-02 1: 2011-02 Dil. 1	2-25 2-25 Amou 250 and spil	e nt ke dupli	Matrix Result <15.7 icate res	A P <u>Rec.</u> 96 sult. Rec.	nalyzed repared 47	By: kg By: kg Rec. Limit 5 - 144.1 RPD
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844 Param DRO	2.17 CS-1) LCS Resul 241 pike result. I LCSD Result	2. Date A QC Pro t RPD is Units	20 m nalyzed: eparation Units ng/Kg based on	2011-02 2011-02 2011-02 2011-02 Dil. 1 the spike Spike	2-25 2-25 Amou 250 and spil	e nt ke dupli ix It Re	Matrix Result <15.7 icate res	A P Rec. 96 sult.	nalyzed repared	By: kg By: kg Rec. Limit 5 - 144.1
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844 Param DRO Percent recovery is based on the s Param	2.17 CS-1) LCS Resul 241 pike result. LCSD Result 224	2. Date A QC Pro t n RPD is Units mg/Kg	20 m nalyzed: eparation Units ng/Kg based on Dil. 1	2011-02 2011-02 2011-02 Dil. 1 the spike Spike Amount 250	2-25 2-25 Amou 250 and spil Matri Resu <15.	e nt ke dupli ix It Re 7 9	Matrix Result <15.7 icate res ec. 0 47	A P <u>Rec.</u> 96 sult. Rec. Limit .5 - 144.1	nalyzed repared 47 RPD	By: kg By: kg Rec. Limit 5 - 144.1 RPD Limit
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844 Param DRO Percent recovery is based on the s Param DRO Percent recovery is based on the s	2.17 CS-1) LCS Resul 241 pike result. LCSD Result 224 pike result.	2. Date A QC Pro t n RPD is Units mg/Kg	20 m nalyzed: eparation Units ng/Kg based on Dil. 1	2011-02 2011-02 2011-02 Dil. 1 the spike Spike Amount 250	2-25 2-25 Amou 250 and spil Matri Resu <15. and spil	e nt ke dupli ix It Re 7 9 ke dupli	Matrix Result <15.7 icate res ec. 0 47 icate res	A P Rec. 96 sult. Rec. Limit .5 - 144.1 sult.	nalyzed repared 47 RPD 7	By: kg By: kg Rec. Limit 5 - 144.1 RPD Limit 20
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844 Param DRO Percent recovery is based on the s Param DRO	2.17 CS-1) LCS Resul 241 pike result. LCSD Result 224	2.: Date A QC Pro t n RPD is Units mg/Kg RPD is	20 m nalyzed: eparation Units ng/Kg based on Dil. 1	2011-02 2011-02 2011-02 Dil. 1 the spike Spike Amount 250	2-25 2-25 Amou 250 and spil Matri Resu <15.	e nt ke dupli ix It Re 7 9 ke dupli ke dupli	Matrix Result <15.7 icate res ec. 0 47	A P <u>Rec.</u> 96 sult. Rec. Limit .5 - 144.1	nalyzed repared 47 RPD 7 5D	By: kg By: kg Rec. Limit 5 - 144.1 RPD Limit
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844 Param DRO Percent recovery is based on the s Param DRO Percent recovery is based on the s LCS Surrogate Result	2.17 CS-1) LCS Result 241 pike result. LCSD Result 224 pike result. LCSD	2. Date A QC Pro t n RPD is <u>Units</u> mg/Kg RPD is U	20 m nalyzed: eparation Units ng/Kg based on Dil. 1 based on	2011-02 2011-02 2011-02 2011-02 Dil. 1 the spike Spike Amount 250 the spike	2-25 2-25 Amou 250 and spil Matri Resu <15. and spil Spil	e nt ke dupli ix lt Re lt Re f ke dupli ke dupli	Matrix Result <15.7 icate res ec. 0 47 icate res LCS	A P Rec. 96 sult. Rec. Limit .5 - 144.1 sult. LCS	nalyzed repared 47 RPD 7 SD c.	By: kg By: kg Rec. Limit 5 - 144.1 RPD Limit 20 Rec.
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844 Param DRO Percent recovery is based on the s Param DRO Percent recovery is based on the s LCS Surrogate Result n-Tricosane 111	2.17 CS-1) LCS Result 241 pike result. I LCSD Result 224 pike result. I LCSD Result	2.: Date A QC Pro t n RPD is Units mg/Kg RPD is Units	20 m nalyzed: eparation Units ng/Kg based on Dil. 1 based on nits	2011-02 2011-02 2011-02 2011-02 Dil. 1 the spike Spike Amount 250 the spike Dil.	2-25 2-25 Amou 250 and spil Matri Resu <15. and spil Spil Amou	e nt ke dupli ix lt Re lt Re f ke dupli ke dupli	Matrix Result <15.7 icate res ec. 0 47 icate res LCS Rec.	A P Rec. 96 sult. Rec. Limit .5 - 144.1 sult. LCS Re	nalyzed repared 47 RPD 7 SD c.	By: kg By: kg Rec. Limit 5 - 144.1 RPD Limit 20 Rec. Limit
4-Bromofluorobenzene (4-BFB) Laboratory Control Spike (LC QC Batch: 77932 Prep Batch: 66844 Param DRO Percent recovery is based on the s PARO Percent recovery is based on the s LCS Surrogate Result n-Tricosane 111	2.17 LCS Resul 241 pike result. LCSD Result 224 pike result. LCSD Result 108 Sample: 25	2.: Date A QC Pro t n RPD is <u>Units</u> mg/Kg RPD is <u>U</u> mg	20 m nalyzed: eparation Units ng/Kg based on Dil. 1 based on nits	2011-02 2011-02 2011-02 2011-02 Dil. 1 the spike Spike Amount 250 the spike Dil.	2-25 2-25 Amou 250 and spil Matri Resu <15. and spil Spil Amou 100	e nt ke dupli ix lt Re lt Re f ke dupli ke dupli	Matrix Result <15.7 icate res ec. 0 47 icate res LCS Rec.	A P Rec. 96 sult. Rec. Limit .5 - 144.1 pult. LCS Re 10	nalyzed repared 47 RPD 7 SD c.	By: kg By: kg Rec. Limit 5 - 144.1 RPD Limit 20 Rec. Limit 70 - 130

Report Date: February 28, 2011 114-6400815				rder: 1102 RJU South			I	Page Nu		29 of 40 Co., NM
	MS				Spike	М	atrix			Rec.
Param	Resul	lt	Units	Dil.	Amount		esult	Rec.		Limit
GRO	22.3		mg/Kg	1	20.0	1.	8232	102	63	3 - 108.5
Percent recovery is based on the sp	ike result. I			the spike	and spike di	plicate	e result.			
	MSD			Spike	Matrix		Re	c.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Lin	nit	RPD	Limit
GRO	20.2	mg/Kg	1	20.0	1.8232	92	63 - 1	.08.5	10	20
Percent recovery is based on the sp	ike result. I	RPD is	based on	the spike a	and spike du	plicate	e result.			
	MS	M	SD		Spi	ke	MS	MSD		Rec.
Surrogate	Result	: Ref	sult	Units I	Dil. Amo		Rec.	Rec.	1	Limit
Trifluorotoluene (TFT)	2.58	2.	.56 n	ng/Kg	1 2		129	128	54.1	- 154.3
4-Bromofluorobenzene (4-BFB)	2.56	2.	.59 n	ng/Kg	1 2		128	130	41.9	- 162.8
QC Batch: 77628 Prep Batch: 66550	(QC Prej	nalyzed: paration:	2011-02- : 2011-02-	14		e	•	yzed By ared By	r: AR
	MS		77 •.	2011	Spike		Aatrix	ъ		Rec.
Param	Resul		Units		Amount	ł	Result	Rec		Limit
Chloride Percent recovery is based on the sp	1070 ike result - F		mg/Kg based on	100 the spike :	10000 and spike du	nlicate	504 result	102	5	85 - 115
	MSD			Spike	Matrix	.p	Re			RPD
Param	Result	Units	Dil.	Amount		Rec			RPD	Limit
Chloride	11100	mg/Kg		10000	504	106			4	20
Percent recovery is based on the sp	· · · · · · · · · · · · · · · · · · ·		<u></u>							
			Dased on	the spike a	and spike du	plicate	, roburo.			
	Sample: 257		based on	the spike a	and spike du	pncate				
	Sample: 257	7298 Date Ar	nalyzed: paration:	2011-02-	15	picate	, roburt.		yzed By ared By	
Matrix Spike (MS-1) Spiked	Sample: 257 1 (MS	7298 Date Ar QC Prej	nalyzed: paration:	2011-02- 2011-02-	15	Α	Aatrix			Rec.
Matrix Spike (MS-1) Spiked QC Batch: 77629 Prep Batch: 66550 Param	Sample: 257 1 (MS Resul	7298 Date Ar QC Prej It	nalyzed: paration: Units	2011-02- 2011-02- Dil.	15 14 Spike Amount	N	Aatrix Result	Prepa Rec	ared By	: AR Rec. Limit
Matrix Spike (MS-1) Spiked QC Batch: 77629 Prep Batch: 66550 Param	Sample: 257 1 (MS	7298 Date Ar QC Prej It	nalyzed: paration:	2011-02- 2011-02-	15 14 Spike	N	Aatrix	Prepa	ared By	: AR Rec. Limit
Matrix Spike (MS-1) Spiked QC Batch: 77629 Prep Batch: 66550 Param Chloride	Sample: 257 1 (MS Resul 11300	7298 Date Ar QC Prej It 0 1	nalyzed: paration: Units mg/Kg	2011-02- 2011-02- Dil. 100	15 14 Spike Amount 10000	N H	Aatrix Result 1460	Prepa Rec	ared By	: AR Rec. Limit
Matrix Spike (MS-1) Spiked QC Batch: 77629 Prep Batch: 66550 Param Chloride Percent recovery is based on the spi	Sample: 257 I MS Resul 11300 ike result. F MSD	7298 Date Ar QC Prej It 0 1 RPD is I	nalyzed: paration: <u>Units</u> mg/Kg based on	2011-02- 2011-02- Dil. 100 the spike a Spike	15 14 Spike Amount 10000 and spike du Matrix	N H	Aatrix Result 1460 2 result. Re	Prepa Rec 98	ared By	Rec. Limit <u>35 - 115</u> RPD
Matrix Spike (MS-1) Spiked QC Batch: 77629 Prep Batch: 66550	Sample: 257 I MS Resul 11300 ike result. F MSD Result	7298 Date Ar QC Prej It 0 1	nalyzed: paration: <u>Units</u> mg/Kg based on Dil.	2011-02- 2011-02- Dil. 100 the spike a	15 14 Spike Amount 10000 and spike du Matrix	N H	Aatrix Result 1460 e result. Re Lin	Prepa Rec 98 ec. nit	ared By	: AR Rec. Limit 35 - 115

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

Report Date: February 114-6400815	28, 2011		Work Order: 11021118 COG/RJU South TB						Page Number: 30 of Eddy Co., N		
Matrix Spike (MS-1)	Spiked	Sample: 25	57280								
QC Batch: 77634			Date A	Analyzed:	2011-0	2-15		Ar	nalyzed I	By: kg	
Prep Batch: 66584			QC Pr	reparation	: 2011-0	2-15		Pr	epared E	By: kg	
		MS				Spike	Mat			Rec.	
Param		Resu		Units	Dil.	Amount	Res			Limit	
DRO		223	r	ng/Kg	1	250	<15	6.7 89	11.7	7 - 152.3	
Percent recovery is base	d on the s	pike result.	RPD is	based on	the spike	e and spike d	uplicate	result.			
		MSD			Spike	Matrix		Rec.		RPD	
Param		Result	Units	Dil.	Amount		Rec.	Limit	RPD	Limi	
DRO		208	mg/Kg	1	250	<15.7	83	11.7 - 152.3	7	20	
Percent recovery is base	d on the s	pike result.	RPD is	based on	the spike	and spike d	uplicate	result.			
Ŭ					•				Л	Rec.	
Jumorata	MS Desult	MSD Result	-	Units	Dil.	Spike Amount		AS MS lec. Rec		Limit	
Surrogate n-Tricosane	Result 101	94.3		ng/Kg	<u> </u>	100		$\frac{100}{01}$ 94		$\frac{11111}{70 - 130}$	
Matrix Spike (MS-1) 2C Batch: 77746	Spiked	Sample: 25		nalyzed:	2011-02	2-18		Ana	lyzed By	·: ME	
Prep Batch: 66683				eparation:					pared By		
		MS				Spike	Matr	ix		Rec.	
Param		Resul	t (Jnits	Dil.	Amount	Resu			Limit	
Benzene		1.85		ıg/Kg	1	2.00	< 0.01			- 139.8	
Coluene		1.89		lg/Kg	1	2.00	< 0.00			- 137.3	
Sthylbenzene		1.84		ig/Kg	1	2.00	< 0.008			7 - 151	
Kylene		5.88		ıg/Kg	1	6.00	0.646		68.7	- 149.8	
ercent recovery is based	d on the s	pike result.	RPD is	based on	the spike	and spike d	uplicate	result.			
		MSD			Spike	Matrix		Rec.		RPD	
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit	
Benzene			mg/Kg	1	2.00	< 0.0118	92	65.5 - 139.8	1	20	
Toluene			mg/Kg	1	2.00	< 0.00600	92	70.5 - 137.3	2	20	
Sthylbenzene			mg/Kg	1	2.00	< 0.00850	92	66.7 - 151	0	20	
Vulono		5 00	malka	1	6.00	0 6469	96	697 1405	1	20	

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

5.80

Xylene

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.24	2.28	mg/Kg	1	2	112	114	50.9 - 152.9
4-Bromofluorobenzene (4-BFB)	2.02	2.12	mg/Kg	1	2	101	106	48.5 - 165.8

6.00

0.6462

86

68.7 - 149.5

1

20

1

Matrix Spike (MS-1) Spiked Sample: 257294

QC Batch:	77748	Date Analyzed:	2011-02-18	Analyzed By:	ME
Prep Batch:	66683	QC Preparation:	2011-02-17	Prepared By:	ME

		MS			Spike	Matrix		Rec.
Param		Result	Units	Dil.	Amount	\mathbf{Result}	Rec.	Limit
GRO	24	417	mg/Kg	1	20.0	302.188	574	63 - 108.5

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

		MSD			Spike	Matrix		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	25	408	mg/Kg	1	20.0	302.188	529	63 - 108.5	2	20

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

		MS	MSD			Spike	MS	MSD	Rec.
Surrogate		Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)		2.48	2.47	mg/Kg	1	2	124	124	54.1 - 154.3
4-Bromofluorobenzene (4-BFB)	26 27	5.20	5.20	mg/Kg	1	2	260	260	41.9 - 162.8

Matrix Spike (MS-1) Spiked Sample: 258031

QC Batch:	77858	Date Analyzed:	2011-02-23	Analyzed By:	ME
Prep Batch:	66777	QC Preparation:	2011-02-23	Prepared By:	ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.87	mg/Kg	1	2.00	<0.0118	<u>94</u>	65.5 - 139.8
Toluene	1.95	mg/Kg	1	2.00	< 0.00600	98	70.5 - 137.3
Ethylbenzene	2.02	mg/Kg	1	2.00	< 0.00850	101	66.7 - 151
Xylene	6.18	mg/Kg	1	6.00	< 0.00613	103	68.7 - 149.5

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

5	MSD	тт •,	D''	Spike	Matrix	r.	Rec.	DDD	RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	1.84	mg/Kg	1	2.00	< 0.0118	92	65.5 - 139.8	2	20
Toluene	1.92	mg/Kg	1	2.00	< 0.00600	96	70.5 - 137.3	2	20
Ethylbenzene	2.04	mg/Kg	1	2.00	< 0.00850	102	66.7 - 151	1	20
Xylene	6.18	mg/Kg	1	6.00	< 0.00613	103	68.7 - 149.5	0	20

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

²⁴Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

²⁵Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

²⁶High surrogate recovery due to peak interference.

²⁷High surrogate recovery due to peak interference.

Report Date: February 28, 2011 114-6400815		Work Order: 11021118 COG/RJU South TB							Page Number: 32 of 40 Eddy Co., NM		
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.		lec. mit		
Trifluorotoluene (TFT)	2.46	2.46	mg/Kg	<u> </u>	2	123			- 152.9		
4-Bromofluorobenzene (4-BFB)	3.09	3.09	mg/Kg	1	2	154			- 165.8		
Matrix Spike (MS-1) Spiked	Sample: 258	063									
QC Batch: 77859		Date Analyz						yzed By:			
Prep Batch: 66777	Ç	QC Preparat	ion: 2011-	02-23			Prep	ared By:	ME		
	MS			S	pike	Matrix			Rec.		
Param	Resul	t Unit	s Dil.	Ar	nount	Result	Rec.		imit		
GRO	²⁸ 214	mg/ŀ	Kg 1	-	20.0	214.043	0	63	- 108.5		
Percent recovery is based on the s	pike result. R	PD is based	l on the spil	ke and s	spike dupli	cate resu	lt.				
Danama	MSD Basult	II	Spik		latrix		Rec.	ממם	RPD		
Param GRO ²⁹	Result 238		0il. Amou 1 20.0				Limit - 108.5	RPD 11	Limit 20		
······································											
Percent recovery is based on the sp	pike result. n	LED IS DASEC	i on the sph	ke and s	spike dupi	cate resu	16.				
	MS	MSD			Spike	MS	MSD		lec.		
Surrogate	Result	Result	Units	Dil.	Amount				mit		
Trifluorotoluene (TFT)	2.53	2.50	mg/Kg	1	2	126	125		- 154.3		
4-Bromofluorobenzene (4-BFB)	3.13	3.20	mg/Kg	1	2	156	160	41.9	- 162.8		
Matrix Spike (MS-1) Spiked	Sample: 257	898									
QC Batch: 77882	1	Date Analyz	ed 2011.	-02-23			Ana	lyzed By	: kg		
Prep Batch: 66796		QC Prepara		-02-23				pared By			
-									0		
	MS			Sp		Matrix			ec.		
Param	Result					Result	Rec.		mit		
DRO	240	mg/Kg	<u>g 1</u>	2	50	<15.7	96	11.7	- 152.3		
Percent recovery is based on the sp	oike result. R	PD is based	l on the spil	ke and s	pike dupli	cate resu	lt.				
	MSD		Spike	Ma	trix		Rec.		RPD		
Param		Units Di			sult Re		.imit	RPD	Limit		
DRO	218 n	ng/Kg 1	250	<1	5.7 87	11.7	- 152.3	10	20		
Percent recovery is based on the sp	oike result. R	PD is based	l on the spil	ke and s	pike dupli	cate resu	lt.	contina			

continued ...

 ²⁸Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
 ²⁹MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

114-6400815	uary 28, 2011		Work Order: 11021118 COG/RJU South TB					Page Number: 33 of 40 Eddy Co., NM		
matrix spikes conti	nued									
-	MS	MSD			Spike	e I	MS M	ISD	Rec.	
Surrogate	Result	Result	Unit	s Dil.	Amou	nt I	Rec. F	lec.	Limit	
	MS	MSD			Spike	e 1	MS M	ISD	Rec.	
Surrogate	Result	Result	Unit	s Dil.	Amou			lec.	Limit	
n-Tricosane	113	101	mg/K	Kg 1	100		113 1	.01	70 - 130	
Matrix Spike (M	(S-1) Spiked	l Sample: 25	8253							
QC Batch: 7792	9		Date Analy	zed: 2011	-02-25		A	nalyzed E	By: ME	
Prep Batch: 6684			QC Prepara		-02-25			repared B		
·····			•					1	5	
		MS			Spike	Ma	atrix		Rec.	
Param		Resu		ts Dil.	Amoun			ec.	Limit	
GRO		14.6	mg/	Kg 1	20.0	<0	.753 7	'3 (63 - 108.5	
Param GRO		MSD Result 16.0	mg/Kg	Spik Dil. Amou 1 20.0	unt Result 0 <0.753	Rec. 8 80	Rec. Limit 63 - 108.5	RPD	RPD Limit 20	
Percent recovery is	based on the s	pike result.	RPD is bas	ed on the spi	ke and spike	duplicate	result.			
		MS	MSD		ç	Spike	MS MS	SD.	Rec.	
		Resul		Units		nount	Rec. Re			
Surrogate		LICOUL							Limit	
Surrogate Trifluorotoluene (T	FT)	2.46	2.53	mg/Kg	1	2	123 12		Limit .1 - 154.3	
			$\begin{array}{c} 2.53\\ 3.09\end{array}$	mg/Kg mg/Kg				6 54.		
Trifluorotoluene (T	ene (4-BFB) [S-1) Spiked 2	2.46	3.09	mg/Kg yzed: 2011	1	2	123 12 150 15	6 54.	.1 - 154.3 .9 - 162.8 By: kg	
Trifluorotoluene (T 4-Bromofluorobenz Matrix Spike (M QC Batch: 7793)	ene (4-BFB) [S-1) Spiked 2	2.46 2.99	3.09 7873 Date Analy QC Prepar	mg/Kg yzed: 2011 ation: 2011	1 1 1-02-25	2	123 12 150 15 A F	26 54. 14 41. Analyzed Prepared 1	.1 - 154.3 .9 - 162.8 By: kg	
Trifluorotoluene (T 4-Bromofluorobenz Matrix Spike (M QC Batch: 7793 Prep Batch: 6684	ene (4-BFB) [S-1) Spiked 2	2.46 2.99 Sample: 25 MS	3.09 7873 Date Analy QC Prepar	mg/Kg yzed: 2011 ration: 2011	1 1 1-02-25 1-02-25 Spike	2 2 Mat	123 12 150 15 A F rix Jlt Rec	6 54. 4 41. Analyzed Prepared D	.1 - 154.3 .9 - 162.8 By: kg By: kg Rec.	
Trifluorotoluene (T 4-Bromofluorobenz Matrix Spike (M QC Batch: 7793 Prep Batch: 6684 Param	ene (4-BFB) [S-1) Spiked 2 4	2.46 2.99 Sample: 25 MS Resul 207	3.09 7873 QC Prepar t Unit mg/F	mg/Kg wzed: 2011 ation: 2011 $s = Dil.$ $Kg = 1$	1 1 1-02-25 1-02-25 Spike Amount 250	2 2 Mat Ress <15	123 12 150 15 A F rix ult Rec 5.7 83	6 54. 4 41. Analyzed Prepared D	.1 - 154.3 .9 - 162.8 By: kg By: kg Rec. Limit	
Trifluorotoluene (T 4-Bromofluorobenz Matrix Spike (M QC Batch: 7793 Prep Batch: 66844 Param DRO	ene (4-BFB) [S-1) Spiked 2 4	2.46 2.99 Sample: 25 MS Resul 207	3.09 7873 QC Prepar t Unit mg/F	mg/Kg wzed: 2011 ation: 2011 $s = Dil.$ $Kg = 1$	1 1 1-02-25 1-02-25 Spike Amount 250 ike and spike	2 2 Mat Ress <15	123 12 150 15 A F rix ult Rec 5.7 83	6 54. 4 41. Analyzed Prepared D	.1 - 154.3 .9 - 162.8 By: kg By: kg Rec. Limit	
Trifluorotoluene (T 4-Bromofluorobenz Matrix Spike (M QC Batch: 7793 Prep Batch: 66844 Param DRO	ene (4-BFB) [S-1) Spiked 2 4	2.46 2.99 I Sample: 25 MS Resul 207 pike result. MSD Result	3.09 7873 QC Prepar t Unit RPD is base	mg/Kg with yzed: 2011 with yzed: 2011 mathematical set of the s	1 1 1-02-25 -02-25 Spike Amount 250 ke and spike Matrix	2 2 Mat Ress <15	123 12 150 15 A F rix .1t Rec .7 83 result.	6 54. 4 41. Analyzed Prepared D	.1 - 154.3 .9 - 162.8 By: kg By: kg Rec. Limit 7 - 152.3 RPD	

Report Dat 114-640081	e: February 5	28, 2011		Work Order: 11021118 COG/RJU South TB				Page Number: 34 of 4 Eddy Co., NM			
Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit		
n-Tricosane		96.0	97.4	mg/Kg	1	100	96	97	70 - 130		
Standard ((CCV-2)										
QC Batch:	77597		Date	Analyzed:	2011-02	-14		Analyz	ed By: ME		
Danom	Flag	Units	CCVs True Conc.	Fo	CVs ound onc.	CCVs Percent	Perco Recov Limi	very	Date		
Param GRO	Flag	mg/Kg	1.00		912	Recovery 91	80 - 1		Analyzed 2011-02-14		
Standard (QC Batch:			Date	Analyzed:	2011-02-	-14		Analyze	ed By: ME		
			CCVs True	Fo	CVs ound	CCVs Percent	Perce Recov	ery	Date		
Param	Flag	Units	Conc.		onc.	Recovery	Limi		Analyzed		
GRO		mg/Kg	1.00	1	.10	110	80 - 1	120	2011-02-14		
Standard ((ICV-1)										
QC Batch:	77628		Date	Analyzed:	2011-02-	-15		Analyz	ed By: AR		
2		TT •	ICV: True	· F	CVs ound	ICVs Percent	Perce	ery	Date		
Param Chloride	Flag	Units mg/Kg	<u> </u>		onc. 101	Recovery 101	Limi 85 - 1		Analyzed 2011-02-15		
Standard (QC Batch:	. ,			Analyzed:					ed By: AR		
Param	Flag	Units	CCV True Conc	F F	CVs ound onc.	CCVs Percent Basevery	Perce Recov Limi	very	Date Analyzed		
Chloride	1 lag	mg/Kg	100)9.2	Recovery 99	85 - 1		2011-02-15		

QC Batch: 77629

Date Analyzed: 2011-02-15

Analyzed By: AR

Report Dat 114-640081	Report Date: February 28, 2011 114-6400815			Vork Order: 110 COG/RJU Sout	Page Number: 35 of 40 Eddy Co., NM		
Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.3	99	85 - 115	2011-02-15
Standard ((CCV-1)						
QC Batch:	· · ·		Date Anal	yzed: 2011-02	-15	Anal	lyzed By: AR
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2011-02-15
QC Batch:	1100 *		CCVs	lyzed: 2011-02 CCVs	CCVs	Percent	alyzed By: kg
D	D 1	Theite	True	Found	Percent	Recovery	Date
Param DRO	Flag	Units mg/Kg	Conc. 250	Conc. 240	Recovery 96	Limits 80 - 120	Analyzed 2011-02-15
Standard ((CCV-3)						
QC Batch:	77634		Date Ana	lyzed: 2011-02	2-15	Ana	lyzed By: kg
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO Standard ((CCV-1)	mg/Kg	250	220	88	80 - 120	2011-02-15
QC Batch:	· · ·		Date Anal	yzed: 2011-02	-18	Analy	yzed By: ME
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.0918	92	80 - 120	2011-02-18
Toluene		mg/Kg	0.100	0.0926	93	80 - 120	2011-02-18
	A	mg/Kg	0.100	0.0908	91	80 - 120	2011-02-18
Ethylbenzen Xylene		mg/Kg	0.300	0.274	91	80 - 120	2011-02-18

114-6400815		ork Order: 110 OG/RJU Sout	Page Number: 36 of 40 Eddy Co., NM			
Standard (CCV-2)						
QC Batch: 77746		Date Analy	yzed: 2011-02-	-18	Anal	yzed By: ME
		CCVs	CCVs	CCVs	Percent	
		True	Found	Percent	Recovery	Date
Param Flag	g Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene	mg/Kg	0.100	0.0969	97	80 - 120	2011-02-12
Foluene	mg/Kg	0.100	0.0949	95	80 - 120	2011-02-1
Ethylbenzene	mg/Kg	0.100	0.0927	93	80 - 120	2011-02-1
Kylene	mg/Kg	0.300	0.278	93	80 - 120	2011-02-1
Standard (CCV-3)						
QC Batch: 77746		Date Analy	/zed: 2011-02-	-18	Analy	yzed By: ME
		CCVs	CCVs	CCVs	Percent	
		True	Found	Percent	Recovery	Date
Param Flag	g Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene	mg/Kg	0.100	0.0911	<u>91</u>	80 - 120	2011-02-1
Foluene	mg/Kg	0.100	0.0913	91 91	80 - 120	2011-02-1
Ethylbenzene	mg/Kg	0.100	0.0876	88	80 - 120	2011-02-1
Kylene	mg/Kg	0.300	0.264	88	80 - 120	2011-02-1
Standard (CCV-1)		Date Analy	/zed: 2011-02-	18	Anab	vzed By: ME
Standard (CCV-1)			zed: 2011-02-		Analy	yzed By: ME
Standard (CCV-1)		CCVs	CCVs	CCVs	Percent	yzed By: ME
Standard (CCV-1)			CCVs Found			yzed By: ME Date
s tandard (CCV-1) QC Batch: 77748	Units	CCVs	CCVs	CCVs	Percent Recovery Limits	Date
Standard (CCV-1) QC Batch: 77748 Param Flag	Units mg/Kg	CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date Analyzed
Standard (CCV-1) QC Batch: 77748 Param Flag GRO		CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Standard (CCV-1) QC Batch: 77748 Param Flag GRO Standard (CCV-2)		CCVs True Conc. 1.00	CCVs Found Conc.	CCVs Percent Recovery 85	Percent Recovery Limits 80 - 120	Date Analyzed 2011-02-18
Standard (CCV-1) QC Batch: 77748		CCVs True Conc. 1.00	CCVs Found Conc. 0.846	CCVs Percent Recovery 85	Percent Recovery Limits 80 - 120 Analy	Date Analyzed 2011-02-18
Standard (CCV-1) QC Batch: 77748 Param Flag GRO Standard (CCV-2)		CCVs True Conc. 1.00 Date Analy CCVs	CCVs Found Conc. 0.846 vzed: 2011-02- CCVs	CCVs Percent Recovery 85 18 CCVs	Percent Recovery Limits 80 - 120 Analy Percent	Date Analyzed 2011-02-18 yzed By: ME
Standard (CCV-1) QC Batch: 77748 Param Flag GRO Standard (CCV-2)		CCVs True Conc. 1.00 Date Analy	CCVs Found Conc. 0.846 zzed: 2011-02-	CCVs Percent Recovery 85	Percent Recovery Limits 80 - 120 Analy	

Report Date: February 28, 2011 114-6400815				Work Order: 11 COG/RJU Sou	Page Number: 37 of 40 Eddy Co., NM		
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO mg/Kg		1.00	0.998	100	80 - 120	2011-02-18	

Standard (CCV-2)

QC Batch: 77767		Date Analyzed:	Date Analyzed: 2011-02-14			zed By: ME	
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.101	101	80 - 120	2011-02-14
Toluene		mg/Kg	0.100	0.101	101	80 - 120	2011-02-14
Ethylbenzene		mg/Kg	0.100	0.101	101	80 - 120	2011-02-14
Xylene		mg/Kg	0.300	0.305	102	80 - 120	2011-02-14

Standard (CCV-3)

QC Batch: 77767			Date Analyzed:	2011-02-14		Analy	zed By: ME
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.100	100	80 - 120	2011-02-14
Toluene		mg/Kg	0.100	0.0993	99	80 - 120	2011-02-14
Ethylbenzene		mg/Kg	0.100	0.102	102	80 - 120	2011-02-14
Xylene		mg/Kg	0.300	0.330	110	80 - 120	2011-02-14

Standard (CCV-1)

QC Batch: 77858			Date Analyzed	: 2011-02-23	Analyzed By: ME		
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.0955	96	80 - 120	2011-02-23
Toluene		mg/Kg	0.100	0.0959	96	80 - 120	2011-02-23
Ethylbenzene		mg/Kg	0.100	0.0977	98	80 - 120	2011-02-23
Xylene		mg/Kg	0.300	0.297	99	80 - 120	2011-02-23

Standard (CCV-2)

QC Batch: 77858

Date Analyzed: 2011-02-23

Analyzed By: ME

Report Dat 114-640081	te: February 28 5	, 2011		ork Order: 110 OG/RJU Soutl		Page Number: 38 of 40 Eddy Co., NM		
			CCVs	CCVs	CCVs	Percent		
n.		** •.	True	Found	Percent	Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Benzene		mg/Kg	0.100	0.0923	92	80 - 120	2011-02-23	
Toluene		mg/Kg	0.100	0.0925	92	80 - 120	2011-02-23	
Ethylbenzei	ne	mg/Kg	0.100	0.0920	92	80 - 120	2011-02-23	
Xylene		mg/Kg	0.300	0.278	93	80 - 120	2011-02-23	
Standard	(CCV-1)							
QC Batch:	77859		Date Analy	yzed: 2011-02-	23	Anal	yzed By: ME	
			$\rm CCVs$	CCVs	CCVs	Percent		
			True	Found	Percent	Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
GRO	0	mg/Kg	1.00	0.960	96	80 - 120	2011-02-2	
Param GRO Standard	Flag	Units mg/Kg	CCVs True Conc. 1.00	CCVs Found Conc. 0.989	CCVs Percent Recovery 99	Percent Recovery Limits 80 - 120	Date Analyzed 2011-02-2	
QC Batch:			Date Analy	vzed: 2011-02-	23	Analy	vzed By: ME	
			CCVs	CCVs	CCVs	Percent		
			True	Found	Percent	Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
GRO		mg/Kg	1.00	1.12	112	80 - 120	2011-02-23	
Standard (QC Batch:	77882		CCVs True	yzed: 2011-02 CCVs Found	CCVs Percent	Percent Recovery	lyzed By: kg Date	
Param	Flag	Units	Conc. 250	Conc. 243	Recovery 97	Limits 80 - 120	Analyzed 2011-02-23	
DRO		mg/Kg						

Report Date: February 28, 2011 114-6400815				Work Order: 11 COG/RJU Sou		Page N	umber: 39 of 40 Eddy Co., NM
Standard ((CCV-2)						
QC Batch:	77882		Date An	alyzed: 2011-()2-23	Ana	alyzed By: kg
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	232	93	80 - 120	2011-02-23
Standard	(CCV-3)						
QC Batch:	77882		Date An	alyzed: 2011-0)2-23	Ana	alyzed By: kg
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	226	90	80 - 120	2011-02-23
Standard	(CCV_{2})						
Standard							
QC Batch:	77929		Date Ana	alyzed: 2011-0	2-25	Anal	yzed By: ME
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.872	87	80 - 120	2011-02-25
Standard	(CCV-3)						
QC Batch:	77929		Date Ana	alyzed: 2011-0	2-25	Anal	yzed By: ME
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.913	91	80 - 120	2011-02-25
Standard ((CCV-1)						
QC Batch:	77932		Date An	alyzed: 2011-0	2-25	Ana	lyzed By: kg
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed

Report Date: February 28, 2011 114-6400815				Work Order: 11 COG/RJU Sou	Page Number: 40 of 40 Eddy Co., NM		
Standard	l (CCV-2)						
QC Batch	: 77932		Date An	alyzed: 2011-0	Analyzed By: kg		
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param Flag Units		Flag Units Conc.		Conc.	Recovery	Limits	Analyzed
DRO mg/Kg			250	258	103	80 - 120	2011-02-25

						21118						ومنادراتهم											-			
Analysis Request of Chain of Custody Record							╞	PAGE: / OF: Z ANALYSIS REQUEST																		
					Ŗ	TETRA 1910 N. Big Midland, Tex (432) 682-4559	Spring St.				<u></u>			5 (Ext. to C35)		d Cr Pb Hg Se d Vr Pd Hg Se	6	(Circle							S	
CLIENT NAME: SIT			SITE MANAGE IK: Tw	R: /4/23	ERS				SERVATIVE		TX1005		Ba Cd			30/624	8270/625					8, pH, TUS				
PROJECT NO.: 114-6400815			PROJECT NAME: COG1 RJU South TB				CONTAINERS	(N)	Т						is Ag As Is Ag As	163	Volatiles	8240/82		808		20.	stos)	19/Cation		
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	Edd, C,	NM E IDENTIFICATION	NUMBER OF	FILTERED (Y/N)	HNG	B B B D	NONE		PIEN BUZIE	PAH 8270	RCRA Metals Ag / TCi P Metals An /	TCLP Volati	TCLP Semi Vola RCI	GC.MS Val. 8240/8260/624	GC.MS Sen	PCB's 8080/808 Pest. 808/808	Chloride	Gamma Spec.	PLM (Asbestos	Major Anions/Cat	
257285	2/4		3		×	AH-1 0-1		1			X			X								X				
286			\lfloor			AH-1 1-15																Ш				
287						AH-1 2-2.5'																				
288						AH-1 3'-3.5																				
289			\prod			AH-1 35-4	,																			
290					Τ	AH-2 0-1								X												
291						AH-Z 2:2.5	,																			
292						AH-Z 2.5'-3	,															$\left \right $				
293						AH-3 0-1								X								\mathbb{N}				
294			ŧ		*	AH-3 , 1-15'																4				
	RELINOUISHED BY: (Signature) Date: 2/11/1/ RECEIVED BY: (Signature) Date:									SAMPLED BY: (Print & Initial) Date: 1/1/ SAMPLE SHIPPED BY: (Circle) AIDBILL 4:																
Time: RELINOUISHED BY: (Signature) Date:				RECEIVED BY: (Signature)	7ime: Date:					TETRA TECH CONTACT PERSON:							AIRBILL #: OTHER: Results by:									
ADDRESS:	Time:							} 	11me 4	4 5 6	0		- Ike Tavariz ?					RUSF Autho Y	RUSH Charges Authorized: Yes No							
SAMPLE CONDITION WHEN RECEIVED: 10,1°C intrast IF Horal IPH exceeds 1,000 mg/Kg run driper samples Brit Ster on Z highest TPH. It Britans exceeds 10 mg/Kg Please fill out all copies - Laboratory retains Yellow copy - Return Oroinal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.																										

XALL tests-Midland

<u> </u>	#: 11021118												
Analysis Reg	uest of Chain of Custody	PAGE: 2 OF: 2											
		ANALYSIS REQUEST (Circle or Specify Method No.)											
	TETRATECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946		G (Ext. to C35) d Vr Pd Hg Se 1DS										
CLIENT NAME: COG	SITE MANAGER: I Ke Tevang	PRESERVATIVE	5 TX1005 5 Ba Cd 60/624 270/625										
PROJECT NO.: PROJI	ECT NAME: COG / RIU South 7B		80213 8015 MOD Metals Ag As Metals Ag As Metals Ag As Metals Ag As Semi Volatiles 5 Semi Vol 821 8080/608 8000/008 800000000										
LAB I.D. NUMBER DATE TIME X HIN OC ZON YOU WY	Eddy Q, Am SAMPLE IDENTIFICATION	NUMBER OF CO FILTERED (Y/N) HCL HNO3 ICE NONE	BTEX 80218 CIPH B015 PAH 8270 TX1005 PAH 8270 RCI RCRA Metals Ag As Ba Cd C TCLP Volitiles TCLP Volitiles TCLP Semi volatiles TCLP Semi volatiles GC.MS Vol. 8240/8260/624 GC.MS Vol. 8240/8260/624 GC.MS 260/625 PCB's 8080/608 Pest. 8080/608 Pest. 8080/60										
257296 219 3	X AH-3 2-2.5'	1 X	X										
296 ((AH-3 3'-85'												
297 7	V AH-3 4-45	2 4											
298 2/1 5	X AH - 2 1'-1.5'	1 X	X										
RELINGUISHED BY: (Signature)	Cate: 2/11/1/ RECEIVED BY: (Signature)	Date:	SAMPLED BY: (Print & Initial)										
- Charles	Time:												
RELINQUISHED BY: (Signature)	Тілю:	Time:	FEDEX BUS OTHER:										
RELINQUISHED BY: (Signature) RECEIVING LABORATORY:	Date:	TETRA TECH CONTACT PERSON: Results by:											
ADDRESS: CITY: Midland STATE: YY	710.												
SAMPLE CONDITION WHEN RECEIVED:	REMARKS: II total TPH excerds 1,000 mg/kg run d	HINE: 14:10 Hupper samplis or Brin E	Yes No STEY on Z highest TH. It BUNDANE excepts 16mg/kg EX exceeds SD mg/Icg run dreper samples										

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