District I 1625 N. French Dr., Hohbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division

PLWJ1017253141

2564

Form C-141 Revised October 10, 2003

Submit 2 Copies to appropriate

1000 Rio Brazo District IV 1220 S. St. Fran	os Road, Azte	c, NM 87410 a Fe, NM 8750:	5	1220	0 Sout	h St. France	cis Dr.		District w	Office in accordance ith Rule 116 on back side of form
		·	Dola	ose Notifi	cotio	$\frac{\mathbf{c}, \mathbf{NM} \mathbf{o}7.}{\mathbf{n} \mathbf{ond} \mathbf{C}}$	orrective A	ction		
			NCIC	ease mount	catio		DITECTIVE A			
Nome of C		100 0 mm	ding TTC			OPEKA Contact Dr			ial Report	Final Report
Address 54	50 W Tex	Suite 13f	0 Midla	nd Texas 797	01	Telephone I	$\frac{1}{10}$ (432) 230-(077		
Facility Na	me Bates	Federal #3	// 1/110121	nd, 1 <u>0, 10, 10, 10, 10, 10, 10, 10, 10, 10, 1</u>	<u>.</u>	Facility Tyr	e SWD			
						/ /1				
Surface Ow	/ner: Feder	al		Mineral	Owner			Lease	No. NMNM API# 3	1030941 0-025-22597
				LOC	ATIO	N OF RE	LEASE			
Unit Letter L	Section 28	Township 19S	Range 32E	Feet from the	North	h/South Line	Feet from the	East/West Line	County	Lea
				Latitude 3	2 37.81	13 Longitu	de 103 40.741			
				NA	TURE	OF REL	EASE			······································
Type of Rele	ase: Produc	ed Water		····-		Volume of	Release 90bbls	Volume	Recovered	15bbls
Source of Re	tiease	Flowline				06/11/2010	four of Occurrence	06/11/20	Hour of Dis	7:00a.m.
Was Immedi	ate Notice (Given?				If YES, To	Whom?			
		\boxtimes	Yes 🗌	No 🗌 Not F	Required	Larry Joh	nson—OCD			
By Whom?	Iosh Rus					Date and H	LekingOCD	11.56 p.m	<u> </u>	
Was a Water	course Rea	ched?				If YES, Vo	blume Impacting t	he Watercourse.		
			Yes 🛛	No		N/A				
If a Waterco	urse was Im	pacted, Descr	ibe Fully.*	*						
N/A										
11/21										
Describe Cou	an of Drohl	<u>i</u>	dial Astice	- Tales - K						
Describe Cat	ise of Proof	em and keme	ulai Actioi	n raken.*						
The Bate Fee	leral flowlin	ne ruptured. T	he flowlin	ie has been repai	red and	put back into s	service.			-
Describe Are	a Affected	and Cleanup	Action Tak	en.*				<u> </u>		
		una oneanep :								
Tetra Tech in was then bro	nspected site ught up to s	e and collected urface grade v	l samples (with clean	to define spills e backfill material	xtent. Sc . Tetra T	oil that exceed Tech prepared	ed RRAL was ren closure report and	noved and hauled i submitted to NM	away for pro OCD for rev	per disposal. Site iew.
I hereby cert	ify that the	information gi	ven above	is true and com	plete to t	the best of my	knowledge and u	nderstand that pur	suant to NM	OCD rules and
regulations a	ll operators	are required t	o report an	id/or file certain	release r	notifications a	nd perform correc	tive actions for re	eases which	may endanger
public health	or the envi	ronment. The	acceptanc	e of a C-141 rep	ort by th	ie NMOCD m	arked as "Final Re	eport" does not rel	ieve the oper	ator of liability
or the enviro	nment. In a	ddition, NMC	CD accep	tance of a C-141	report o	loes not reliev	e the operator of r	responsibility for o	ompliance wa	vith any other
federal, state	, or local la	ws and/or regi	lations.						-	
		h	\mathcal{D}				OIL CON	<u>SERVATION</u>	DIVISIC	<u>N</u>
Signature:		VI	<u> </u>							
Printed Nam	e: Ike Tava	rez (agent for	<u>COG)</u>			Approved by	District Supervise	or:		
Title: Proje	ct Manager					Approval Dat	e:	Expiration	Date:	
E-mail Addr	ess: ike.tav	arez@tetratec	h.com	· · · · · · · · · · · · · · · · · · ·		Conditions of	Approval:		Attached	
Date: 3-	-13-1	2	Phone:	(432) 682-4559						-

* Attach Additional Sheets If Necessary

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

	ion and Corrective A	Action	
	OPERATOR	🛛 Init	ial Report 🔲 Final Rep
Name of Company COG OPERATING LLC	Contact	Pat Ellis	
Address 550 W. Texas, Suite 100, Midland, TX 79701	Telephone No. 433	2-230-0077	
racinty Name Bate Federal #3	Facility Type	SWD	
Surface Owner Federal Mineral Own)er	Lease	No. NMNM030941 API# 30-025-22597
LOCAT	ION OF RELEASE	•	
Unit Letter Section Township Range Feet from the No. L 28 19S 32E	orth/South Line Feet from the	East/West Line	County Lea
Latitudo 32 37 5	R13 Longitude 103 40 74		
NATH	RE OF RELEASE		
Type of Release Produced Water	Volume of Release 90bb	ls Volume	Recovered 15bbls
Source of Release Flowline	Date and Hour of Occurre	nce Date and	Hour of Discovery
	06/11/2010	06/11/20	10 7:00 a.m.
Was Immediate Notice Given? Xes I No Not Requi	red	Larry Johnson—(Geoffrey Leking—	DCD
By Whom? Josh Russo	Date and Hour 06/11/20	10 11:56 p.m.	000
Was a Watercourse Reached?	If YES, Volume Impacting	the Watercourse.	
a Watercourse was Impacted, Describe Fully.*			
			······································
Describe Cause of Problem and Remedial Action Taken.*			
The Bate Federal flowline ruptured. The flowline has been repaired a	ind put back into service.		
Describe Area Affected and Cleanup Action Taken.*	<u></u>		
Initially 90bbls of produced water was release from the ruptured flow 100 yards north from the GPS coordinates listed above, never getting that was released is 135,000 mg/l. (The closest well location to the re FSL 660 FWL, Unit L, Sec. 28-T19S-R32E, API#30-025-38240,Lea any possible contamination from the release and we will present a ren remediation work.	line and we were able to recover more that 20 yards wide. The av- clease is 600 yards south of the lea County, NM, NMNM-84647.) The nediation work plan to the BLM/1	15bbls. The produc erage chloride conce ak site. Cimarex En- etra Tech will samp NMOCD for approv	ed water from the release flowe entration of the produced water ergy, Maduro Unit #008, 1740 le the spill site area to delineate al prior to any significant
1 hereby certify that the information given above is true and complete regulations all operators are required to report and/or file certain releat public health or the environment. The acceptance of a C-141 report is should their operations have failed to adequately investigate and reme or the environment. In addition, NMOCD acceptance of a C-141 report federal, state, or local laws and/or regulations.	to the best of my knowledge and use notifications and perform corr by the NMOCD marked as "Final ediate contamination that pose a to ort does not relieve the operator o	understand that pur ective actions for re Report" does not re ireat to ground wate f responsibility for e	suant to NMOCD rules and leases which may endanger lieve the operator of liability er, surface water, human health compliance with any other
I hereby certify that the information given above is true and complete regulations all operators are required to report and/or file certain relea public health or the environment. The acceptance of a C-141 report h should their operations have failed to adequately investigate and reme or the environment. In addition, NMOCD acceptance of a C-141 report federal, state, or local laws and/or regulations.	to the best of my knowledge and use notifications and perform corr by the NMOCD marked as "Final ediate contamination that pose a to ort does not relieve the operator of OIL CON	understand that pur ective actions for re Report" does not re hreat to ground wate f responsibility for e NSERVATION	suant to NMOCD rules and leases which may endanger lieve the operator of liability er, surface water, human health compliance with any other DIVISION
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SITE INFORMATION

		Re	port Type: C	Closure
General Site Info	ormation:			
Site:		Bates SWD	#3	
Company:		COG Operat	ting LLC	
Section, Townsl	hip and Range	Section 29,	T19S, R33E, Unit	
Lease Number:		30-025-2259	7	
County:		Lea County		
GPS:			32.630371	103.679242
Surface Owner:		Federal		
Mineral Owner:				
Directions:		From the inter into lease road	section of Hwy 529 a d for 5 miles, turn rig	and CR 126, go South on CR 126 for 10 miles, turn left (East) ht (south) and go 0.3 miles to site on north side (right).
Belea	se Data:			
Date Released:			6/11/2010	
Type Release:	·····	<u>+</u>	Produced Water	
Source of Contan	nination:		Flow line	
Fluid Released:			90 barrels	
Fluids Recovered	1:		15 barrels	
Official Commun	nication:			
Name:	Pat Ellis			Ike Tavarez
Company:	COG Operating, 11	C		Tetra Tech
Address:	550 M. Toxas Ave	Ste 1300		1910 N. Big Spring
P.O. Box	550 W. TEXAS AVE.	016. 1000		
City:	Midland Texas 797			Midland, Texas
Phone number:	(432) 686-3023	01		(432) 682-4559
Fay:	(430) 684 7127			
Fax. Email:	(402) 004-7137			ike tavaraz@tetratech.com
Linan.	Dellis & concriteso	dices.com	I	INC. RAVAIOL & ICH AUGHT. COM
Ranking Criteria		A. PRES		
Depth to Groundy	uator:		Banking Score	Site Data
<50 ft			20	
50-99 ft			10	
>100 ft.		· · · · · · · · · · · · · · · · · · ·	0	0
WellHead Protecti			Banking Score	Site Data
Water Source <1.0	000 ft. Private <200 f	t.	20	
Water Source >1,0	000 ft., Private >200 f	t.	0	•0
Surface Rody of M	Votor		Ranking Score	Site Data
200 ft	valer;		20	Sile Dala .
200 ft - 1.000 ft.			10	
>1,000 ft.			0	0
Tol	al Ranking Score:			
		Accepta	ble Soil RRAL (m	ig/kg)
		Benzene	Total BTEX	ТРН
		10	50	5,000
				



March 13, 2012

Mr. Geoffrey Leking Environmental Engineer Specialist Oil Conservation Division, District 1 1625 North French Drive Hobbs, New Mexico 88240

Re: Closure Report for the COG Operating LLC., Bates SWD #3 Leak, Unit I, Section 29, Township 19 South, Range 33 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill at the Bates SWD #3 Line Leak located in Unit I, Section 29, Township 19 South, Range 33 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.630371°, W 103.679242°. 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 June 11, 2010, and released approximately 90 barrels of produced water due to a flow line rupture. To alleviate the problem, COG personnel repaired the leak. Approximately 15 barrels of standing fluids were recovered. The spill migrated west in the pasture approximately 180', at a width of approximately 30'. COG immediately excavated the spill area and removed approximately 1' to 2' of soil and transported the material to proper disposal. The initial C-141 form is enclosed in Appendix A.

Groundwater

The United States Geological Survey (USGS) database shows wells in Section 17 and Section 18, Township 19 South, Range 33 East, with reported depths to water of approximately 118' and 340', respectively. The New Mexico State Engineer Well Reports showed a well with a reported depth of 185' (Section 32). As requested by the NMOCD, Tetra Tech TETRA TECH

installed a temporary well onsite (Section 29) to established depth to groundwater. The well was installed to a total depth of 130' and did not encounter groundwater in the well (dry). Based on the data, the depth to groundwater for the site appears to be greater than 100' below surface. The average depth to water map is included in Appendix B.

Regulatory

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

Soil Assessment and Analytical Results

On August 3, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of ten (10) soil borings (SB-1 through SB-10) were installed using an air rotary rig. A total of six (6) soil borings were installed in the excavated area. The remaining soil borings were installed north of the excavation to assess the area. The soil borings were installed to depths ranging from 10' to 25'. Soil samples were collected from each soil boring for analysis. Select samples were analyzed for TPH by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The sampling results are summarized in Table 1. The soil boring locations are shown on Figure 3.

Referring to Table 1, all of the samples were below the BTEX and TPH RRAL. The chloride impacted soils were all vertically defined in all of the soil borings. Based on the data, Figure 5 (Cross-Section A-A') was developed to evaluate distribution of the chloride impact in the subsurface soils. As shown in the A-A' Cross Section, the deepest chloride impact were encountered in the area of SB-2 and SB-6, with chloride concentrations significantly decline around 10' and 15' respectively. The remaining soil borings (SB-7, SB-8, SB-9 and SB-10) north of the spill area did not show a chloride impact to the soils.



Remediation Activities and Closure Request

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. The final depths of the soil remediation for the entire spill met or exceeded the depths of the approved work plan. The excavation depths are highlighted in Table 1 and shown on Figure 5 and 6. Once excavated, the site was backfilled with clean material.

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

Respectfully submitted,

TETRATECH lke Tavarez

Ike Tavarez Project Manager

cc: Pat Ellis – COG cc: Paul Evans – BLM cc:Jim Amos - BLM



















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DEPTH IN FEET

Table 1	COG Operating LLC.	Doto #2 CWD
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Bates #3 SWD LEA COUNTY, NEW MEXICO

mple	Sample	Sample	Depth	Soil S	status	TPI	H (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
_	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
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	=	10'	2'	×		,	,		3		-	ŧ	249
	=	15'	2'	×		-	-	ı		r	1	•	298
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	=	20'	2	×		'	1			,	,	•	211

Sample	Sample	Sample	Depth	Soil	Status	ЧТ	H (mg/k	(b	Benzene	Toluene	Ethlvbenzene	Xvlene	Chloride
0	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
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	Sample	Depth	Soil	Status	dL	'H (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
Depth (I	£	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
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õ		6"	×		ı	•	•	•	•	1	•	262
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Table 1	COG Operating LLC.	Bates #3 SWD
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Ethlybenzene	(mg/kg)	<0.0200					I			1			ł	1
Toluene	(mg/kg)	<0.0200			1	1	-	•	•	-	•	1	,	,
Benzene	(mg/kg)	<0.0200	•			1	ı	ı	•	•	1	•	•	1
(g)	Total	<50.0	,	,	3	J	<50.0	,	•		J	۰	,	J
H (mg/k	DRO	<50.0	١	t	5	١	<50.0	1	ı	1	ı	,	۰ 	I
75	GRO	<2.00	•	١	1	•	<2.00	1	•	-		t	1	I
Status	Removed													
Soil	In-Situ	×	×	×	Х	×	×	×	×	×	X	Х	×	×
Depth	(BEB)	-9	-9	6"	6"	6"	6"	6"	-9	-9	6"	6"	9	. 9
Sample	Depth (ft)	1	3'	5'	7'	10'	- - -	3	5	7'	10'	15'	20'	25'
Sample	Date	8/4/2010	æ	Ξ	÷	=	8/4/2010	Ξ	Ξ	Ξ	=	=	Ξ	=
Sample	Q	SB-9					SB-10							

Below Excavation Bottom BEB

Not Analyzed 1

Excavation Depths

COG Operating LLC Bates #3 SWD Lea County, New Mexico

4 signator -

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Annual State

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Contraction and

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1.0123-1-1-1223-0









View North East - SB-4 through SB-6

COG Operating LLC Bates #3 SWD Lea County, New Mexico

đ

TETRA TECH



View North East - SB-5 and SB-6



View South - Backfill

COG Operating LLC Bates #3 SWD Lea County, New Mexico

7

TETRA TECH



View North - Backfill

Site info and picture details

Water Well Data Average Depth to Groundwater (ft) COG - Bates Federal #3

18 S	South	3	2 East			18 Se	outh	3	3 East				18 S	outh	- 34	East	
5	4 65	3	2	1	6	5	4	3	2	1		6	5	4	3	2	1
			1						·			130	105		87	102	107
8	9	10	11	12	7	8 100	9	10	11	12 14	3	7	8	9	10	11	12 115
								62		140		83	148		148	110	92
17	16	15	14	13	18	17	16	15	14	13	60	18	17	16	15 114	14	13
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32	33	34	35	36	31	32	33	34	35	36		31	32	33	34	35	36
								177								118	<u> </u>
<u>19 S</u>	South	3	2 East			19 Se	outh	3	3 East		_		19 \$	outh	34	East	
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88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6) Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed Temporay well to establish depth to groundwater

SAMPLE LOG

Boring/Well:	TMW-1
Project Number:	114-6400561
Client:	COG
Site Location:	Bates Federal #3
Location:	Lea County, New Mexico
Legals:	Township 19 South Range 32 East Section 13
Total Depth	135
Date Installed:	08/04/10

DEPTH (Ft)	ονΜ	SAMPLE DESCRIPTION
5-6		Loose Brown fine grain sand
10-11		Soft Calcihe
15-16		Soft Calcibe
20-21		Soft Calcihe
25-26		Soft Calcihe
30-31		Loose reddish brown sand
35-36		Loose reddish brown sand
40-41		Loose reddish brown sand
45-46		Stiff red clay
50-51		Stiff red clay
55-56	-	Stiff red clay
60-61		Stiff red clay
65-66		Stiff Blue/Grey clay
70-71		Stiff Blue/Grey clay
75-76		Stiff Blue/Grey clay
80-81		Stiff Blue/Grey clay
85-86		Stiff Blue/Grey clay
90-91		Stiff brown clay
95-96		Very stiff red clay (Redbed)
100-101		Very stiff red clay (Redbed)
105-106		Very stiff red clay (Redbed)
110-111		Very stiff red clay (Redbed)
115-116		Very stiff red clay (Redbed)
120-121		Very stiff red clay (Redbed)
130-131	•-	Very stiff red clay (Redbed)

Total Depth 130' Groundwater was not encountered

Summary Report

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

Report Date: August 17, 2010

Work Order: 10080627

Project Location:	Lea County, NM
Project Name:	COG/Bates #3
Project Number:	114-6400561

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
240077	SB-7 1' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240078	SB-7 3' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240079	SB-7 5' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240080	SB-7 7' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240081	SB-7 10' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240082	SB-7 15' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240085	SB-8 1' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240086	SB-8 3' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240087	SB-8 5' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240088	SB-8 7' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240089	SB-8 10' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240090	SB-8 15' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240091	SB-8 20' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240092	SB-8 25' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240094	SB-9 1' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240095	SB-9 3' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240096	SB-9 5' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240097	SB-9 7' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240098	SB-9 10' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240099	SB-10 1' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240100	SB-10 3' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240101	SB-10 5' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240102	SB-10 7' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240103	SB-10 10' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240104	SB-10 15' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240105	SB-10 20' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240106	SB-10 25' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06

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 17, 2010

Work Order: 10080627

		В	TEX		TPH DRO - NEW	TPH GRO
	Benzene	Tolucne	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(nig/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
240077 - SB-7 1' (6 in. BEB)	< 0.0200	< 0.0200	< 0.0200	<0.0200	<50.0	<2.00
240085 - SB-8 1' (6 in. BEB)	< 0.0200	< 0.0200	< 0.0200	<0.0200	<50.0	< 2.00
240094 - SB-9 1' (6 in. BEB)	< 0.0200	< 0.0200	< 0.0200	<0.0200	<50.0	$<\!2.00$
240099 - SB-10 1' (6 in. BEB)					<50.0	<2.00
Sample: 240077 - SB-7 1' (6	in. BEB)					
Param Fla	<u>g</u>	R	esult		Units	RL
Chloride	·····	<u>_</u>	285		mg/Kg	4.00
Sample: 240078 - SB-7 3' (6	in. BEB)					
Param Fla	g	R	lesult		Units	\mathbf{RL}
Chloride	<u> </u>		<200		mg/Kg	4.00
Sample: 240079 - SB-7 5' (6	in. BEB)					
Sample: 240079 - SB-7 5' (6 Param Fla	n. BEB)	R	esult		Units	RL
Sample: 240079 - SB-7 5' (6 Param Fla Chloride	in. BEB)	R	esult <200		Units mg/Kg	RL 4.00
Sample: 240079 - SB-7 5' (6 Param Fla Chloride	in. BEB) g	R	esult <200		Units mg/Kg	RL 4.00
Sample: 240079 - SB-7 5' (6 Param Fla Chloride Sample: 240080 - SB-7 7' (6 Flame)	n. BEB) g n. BEB)	R	esult <200		Units mg/Kg	RL 4.00
Sample: 240079 - SB-7 5' (6 Param Fla Chloride Sample: 240080 - SB-7 7' (6 f Param Fla	n. BEB) g n. BEB) g	R	esult <200 esult		Units mg/Kg Units	RL 4.00 RL
Sample: 240079 - SB-7 5' (6 Param Fla Chloride Sample: 240080 - SB-7 7' (6 Param Fla Chloride	n. BEB) g n. BEB) g	R	esult <200 esult <200		Units mg/Kg Units mg/Kg	RL 4.00 RL 4.00
Sample: 240079 - SB-7 5' (6 Param Fla Chloride Sample: 240080 - SB-7 7' (6 f Param Fla Chloride	n. BEB) g n. BEB) g	R	esult <200 esult <200		Units mg/Kg Units mg/Kg	RL 4.00 RL 4.00
Sample: 240079 - SB-7 5' (6 Param Fla Chloride Sample: 240080 - SB-7 7' (6 f Param Fla Chloride Sample: 240081 - SB-7 10' (6	in. BEB) g n. BEB) g in. BEB)	R	esult <200 esult <200		Units mg/Kg Units mg/Kg	RL 4.00 RL 4.00
Sample: 240079 - SB-7 5' (6 Param Fla Chloride Sample: 240080 - SB-7 7' (6 i Param Fla Chloride Sample: 240081 - SB-7 10' (6 Param Fla Sample: 240081 - SB-7 10' (6	in. BEB) g n. BEB) g in. BEB)	R	esult <200 esult <200 esult		Units mg/Kg Units mg/Kg Units	RL 4.00 RL 4.00
Sample:240079 - SB-7 5' (6ParamFlaChloride	in. BEB) g n. BEB) g in. BEB) g	R	esult <200 esult <200 esult 210		Units mg/Kg Units mg/Kg Units mg/Kg	RL 4.00 RL 4.00 RL 4.00
Sample: 240079 - SB-7 5' (6 Param Fla Chloride Sample: 240080 - SB-7 7' (6 Param Fla Chloride Sample: 240081 - SB-7 10' (6 Param Fla Chloride	in. BEB)	R	esult <200 esult <200 esult 210		Units mg/Kg Units mg/Kg Units mg/Kg	RL 4.00 RL 4.00 RL 4.00
Sample: 240079 - SB-7 5' (6 Param Fla Chloride Sample: 240080 - SB-7 7' (6 f Param Fla Chloride Sample: 240081 - SB-7 10' (6 Param Fla Chloride Sample: 240081 - SB-7 10' (6 Param Fla Chloride Sample: 240082 - SB-7 15' (6	in. BEB)	R	esult <200 esult <200 esult 210		Units mg/Kg Units mg/Kg Units mg/Kg	RL 4.00 RL 4.00 RL 4.00
Sample: 240079 - SB-7 5' (6 Param Fla Chloride Sample: 240080 - SB-7 7' (6 i Param Fla Chloride Sample: 240081 - SB-7 10' (6 Param Fla Chloride Sample: 240081 - SB-7 10' (6 Param Fla Chloride Sample: 240082 - SB-7 15' (6 Param Fla Sample: 240082 - SB-7 15' (6 Param Fla	in. BEB) g in. BEB) g in. BEB) g	R	esult		Units mg/Kg Units mg/Kg Units mg/Kg Units	RL 4.00 RL 4.00 RL 4.00

Sample: 240085 - SB-8 1' (6 in. BEB)

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Report Date: Augu	ust 17, 2010	Work Order: 10080627	Page	Number: 3 of 5
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 240086 Param Chloride	- SB-8 3' (6 in. BEB) Flag	Result262	Units mg/Kg	RL 4.00
Sample: 240087	- SB-8 5' (6 in. BEB)			
Param	Flag	\mathbf{Result}	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 240088	- SB-8 7' (6 in. BEB)			
Param	Flag	Result	Units	RL
Chloride		267	mg/Kg	4.00
Sample: 240089 Param Chloride	- SB-8 10' (6 in. BEB) Flag	Rcsult <200	Units mg/Kg	RL 4.00
Sample: 240090 -	- SB-8 15' (6 in. BEB)			
Param	Flag	Result	Units	\mathbf{RL}
Chloride		219	mg/Kg	4.00
Sample: 240091 ·	· SB-8 20' (6 in. BEB)			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 240092 •	· SB-8 25' (6 in. BEB)			
Param	Flag	Result	Units	\mathbf{RL}
Chloride	······································	<200	mg/Kg	4.00

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Report Date: August 17, 2010		Work Order: 10080627	Page Number: 4 of 5	
Sample: 240094 -	- SB-9 1' (6 in. BEB)			•
Param	Flag	Result	Units	\mathbf{RL}
Chloride		<200	mg/Kg	4.00
Sample: 240095 -	- SB-9 3' (6 in. BEB)			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 240096 -	· SB-9 5' (6 in. BEB)			
Param	Flag	Result	Units	\mathbf{RL}
Chloride	· · · ·	<200	mg/Kg	4.00
Sample: 240097 -	· SB-9 7' (6 in. BEB)			
Param	Flag	Result	Units	\mathbf{RL}
Chloride		<200	mg/Kg	4.00
Sample: 240098 - Param Chloride	SB-9 10' (6 in. BEB)	Result <200	Units mg/Kg	RL4.00
Sample: 240099 -	SB-10 1' (6 in. BEB)	Desult	1 Juliu	DI
Chloride	r lag	<200 <200		<u></u>
Sample: 240100 -	SB-10 3' (6 in. BEB)			<u></u>
Param	Flag	Result	Units	\mathbf{RL}
Chloride		<200	mg/Kg	4.00
Sample: 240101 -	SB-10 5' (6 in. BEB)			
Param	Flag	Result	Units	\mathbf{RL}
Chloride	<u>~</u>	<200	mg/Kg	4.00

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Report Date: August 17, 2010

Sample: 240102 - SB-10 7' (6 in. BEB)

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

Sample: 240103 - SB-10 10' (6 in. BEB)

Param	Flag	Result	Units	\mathbf{RL}
Chloride		203	mg/Kg	4.00

Sample: 240104 - SB-10 15' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		250	mg/Kg	4.00

Sample: 240105 - SB-10 20' (6 in. BEB)

Param	Flag	Result	Units	\mathbf{RL}
Chloride		217	mg/Kg	4.00

Sample: 240106 - SB-10 25' (6 in. BEB)

Param	Flag	Result	Units	\mathbf{RL}
Chloride		316	mg/Kg	4.00

THURSDALL	raceAnalysi	s, Inc.III		
6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 6015 Harris Parkway, Suite 110	Lubbock, Texas 79424 800+378+12 El Paso, Texas 79922 886+588+34 Midtand, Texas 79703 Ft. Worth, Texas 76132 E-Mail: Tab@traceanalysis c	96 806+794+1296 f 43 915+585+3443 f 432+689+6301 f 817+201+5260 om	FAX 806+794+1298 FAX 915+585+4944 FAX 432+889+6313	
	Certificat	ions		
WBENC: 237019	HUB: 1752439 NCTRCA WFWB	743100-86536 38444Y0909	DBE:	VN 20657
	NELAP Cert	ifications		
Lubbock: T104704219-08-TX LELAP-02003	El Paso: T1047 LELA	04221-08-TX P-02002	Midlan	d: T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: August 17, 2010

Work Order: 10080627

Project Location:Lea County, NMProject Name:COG/Bates #3Project Number:114-6400561

Kansas E-10317

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
240077	SB-7 1' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240078	SB-7 3' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240079	SB-7 5' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240080	SB-7 7' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240081	SB-7 10' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240082	SB-7 15' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240085	SB-8 1' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240086	SB-8 3' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240087	SB-8 5' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240088	SB-8 7' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
240089	SB-8 10' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240090	SB-8 15' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240091	SB-8 20' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240092	SB-8 25' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240094	SB-9 1' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240095	SB-9 3' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240096	SB-9 5' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240097	SB-9 7' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240098	SB-9 10' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240099	SB-10 1' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240100	SB-10 3' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240101	SB-10 5' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240102	SB-10 7' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240103	SB-10 10' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240104	SB-10 15' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240105	SB-10 20' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06
240106	SB-10 25' (6 in. BEB)	soil	2010-08-04	00:00	2010-08-06

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 24 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

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

Case Narrative

Samples for project COG/Bates #3 were received by TraceAnalysis, Inc. on 2010-08-06 and assigned to work order 10080627. Samples for work order 10080627 were received intact at a temperature of 2.1 C.

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

		\mathbf{Prep}	\mathbf{Prep}	\mathbf{QC}	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	62300	2010-08-12 at 08:30	72674	2010-08-12 at 09:58
Chloride (Titration)	SM 4500-Cl B	62100	2010-08-09 at 08:57	72481	2010-08-10 at 14:34
Chloride (Titration)	SM 4500-Cl B	62101	2010-08-09 at 08:57	72482	2010-08-10 at 14:35
Chloride (Titration)	SM 4500-Cl B	62102	2010-08-09 at 08:58	72483	2010-08-10 at 14:35
TPH DRO - NEW	S 8015 D	62266	2010-08-13 at 15:00	72633	2010-08-15 at 16:00
TPH GRO	S 8015 D	62300	2010-08-12 at $08:30$	72675	2010-08-12 at $10:26$

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 10080627 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 17, 2010 114-6400561

Analytical Report

Sample: 240077 - SB-7 1' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 72674 62300			Analytical Date Analy Sample Pre	Method: zed: paration:	S 8021B 2010-08-12 2010-08-12		Prep Me Analyzed Prepared	ethod: 1 By: 1 By:	S 5035 AG AG
	•			RL						
Parameter	F	lag		Result		Units		Dilution		\mathbf{RL}
Benzene	4			< 0.0200		mg/Kg		1		0.0200
Toluene				< 0.0200)	mg/Kg		1		0.0200
Ethylbenzene	•			< 0.0200	ł	mg/Kg		1		0.0200
Xylene				< 0.0200	l	mg/Kg		1		0.0200
							Spike	Percent	Re	covery
Surrogate			Flag	\mathbf{Result}	Units	Dilution	Amount	Recovery	\mathbf{L}	imits
Trifluorotolue	ene (TFT)			1.66	mg/Kg	1	2.00	83	52.	8 - 137
4-Bromofluor	obenzene (4-BFI	3)		1.59	mg/Kg	1	2.00	80	38.	4 - 157

Sample: 240077 - SB-7 1' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 72481 62100	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		\mathbf{RL}			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		285	mg/Kg	50	4.00

Sample: 240077 - SB-7 1' (6 in. BEB)

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical	Method: S 8015 D	Prep Method:	N/A
QC Batch:	72633	Date Analy	zed: 2010-08-15	Analyzed By:	AW
Prep Batch:	62266	Sample Pro	eparation: 2010-08-13	Prepared By:	AW
		RL			
Parameter	Flag	Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Report Date: August 17, 2010 114-6400561		v	Work Order: 10080627 COG/Bates #3			Page Number: 5 of 24 Lea County, NM		
Surrogate	Flag	\mathbf{Result}	Units	Dilu	tìon	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		115	mg/Kg			100	115	55.5 - 151
Sample: 24	0077 - SB-7 1	(6 in. BEB))					
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 72675 62300		Analytical Date Anal Sample Pr	Method: yzed: reparation:	S 8015 D 2010-08-12 2010-08-12	2	Prep Met Analyzed Prepared	hod: S 5035 By: AG By: AG
Parameter	Fl	ag	RL Result		Units		Dilution	\mathbf{RL}
GRO			<2.00		mg/Kg		1	2.00
Surrogate		Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluo 4-Bromofluor	ene (TFT) obenzene (4-BF	B)	1.82 1.80	mg/Kg mg/Kg	1	2.00 2.00	91 90	48.5 - 152 42 - 159
Sample: 24	0078 - SB-7 3'	(6 in. BEB)	I					
Laboratory:	Midland Chlorida (Titre	tion)	Analut	tical Matha			D-on M	othodi N/A

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-CI B	Prep Method:	N/A
QC Batch:	72481	Date Analyzed:	2010-08-10	Analyzed By:	AR
Prep Batch:	62100	Sample Preparation:	2010-08-09	Prepared By:	AR
		\mathbf{RL}			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		<200 1	ng/Kg	50	4.00

Sample: 240079 - SB-7 5' (6 in. BEB)

Chloride		<200	mg/Kg	50	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Analysis: QC Batch: Prep Batch:	Chloride (Iltration) 72481 62100	Analytical Metho Date Analyzed: Sample Preparati	2010-08-10 ion: 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Laboratory:	Midland				

Report Date: August 17, 2010 114-6400561		Work O COC	Work Order: 10080627 COG/Bates #3		: 6 of 24 nty, NM
Sample: 24	0080 - SB-7 7' (6 in. BE	B)			
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical M	ethod: SM 4500-Cl B	Prep Method	: N/A
QC Batch:	72481	Date Analyze	ed: 2010-08-10	Analyzed By	: AR
Prep Batch:	62100	Sample Prepa	aration: 2010-08-09	Prepared By	AR.
		RL			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		<200	mg/Kg	50	4.00

Sample: 240081 - SB-7 10' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 72481 62100	Analytical Method: Date Analyzed: Sample Preparation	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
2		RL	TT 1.		DI
Parameter	Flag	Result	Units	Dilution	RL
Chloride		210	mg/Kg	50	4.00

Sample: 240082 - SB-7 15' (6 in. BEB)

Chloride		215	mg/Kg	50	4.00
Parameter	Flag	RL Result	Units	Dilution	\mathbf{RL}
•				- v	
Prep Batch:	62100	Sample Preparation:	2010-08-09	Prepared By:	AR
QC Batch:	72481	Date Analyzed:	2010-08-10	Analyzed By:	\mathbf{AR}
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

Sample: 240085 - SB-8 1' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 72674 62300		Analytical Method: Date Analyzed: Sample Preparation:	S 8021B 2010-08-12 2010-08-12	Prep Method: Analyzed By: Prepared By:	S 5035 AG AG
			RL			
Parameter		Flag	Result	Units	Dilution	\mathbf{RL}
Benzene			< 0.0200	mg/Kg	1	0.0200
Toluene			< 0.0200	mg/Kg	1	0.0200
					continued	

114-6400561	e: August 17, 20	10 	Work Order: 10080627 COG/Bates #3			Page Number: 7 of 24 Lea County, NM			
sample 2400	85 continued								
D	,		RL		TT • 4		D .1		ות
Parameter		Flag	Aesult <0.0200		Units		Dilution		RI 0.000
Xylene			<0.0200		mg/Kg		<u> </u>		0.020
Surrogato		Flag	Recult	Unite	Dilution	Spike	Percent	Ree	covery
Trifluorotolu	ene (TFT)	1 ld <u>B</u>	1 42	mg/Kg	1	2 00	71	52.8	111165 2 - 13 ⁷
4-Bromofluo	robenzene (4-BF	<u>B)</u>	1.40	mg/Kg	1	2.00	70	38.4	4 - 157
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titra 72481 62100	ation)	Analyt Date A Sample	ical Method: analyzed: Preparation:	SM 4500-C 2010-08-10 2010-08-09	B	Prep M Analy: Prepar	Method: zed By: red By:	N/A AR AR
Duramotor	D I	N	RL Popult		Tinita		Dilution		Ðſ
Parameter Chloride	F1	ag	RL Result <200		Units mg/Kg		Dilution 50		<u>R1</u> 4.00
Parameter Chloride Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch:	Fl 0085 - SB-8 1' Lubbock TPH DRO - N 72633 62266	ag (6 in. BEB) EW	RL Result <200 Analy Date A Sampl	tical Method: Analyzed: e Preparation	Units mg/Kg S 8015 D 2010-08-15 1: 2010-08-13		Dilution 50 Prep M Analyz · Prepar	Aethod: zed By: zed By:	RI 4.00 N/A AW AW
Parameter Chloride Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch:	Fl 0085 - SB-8 1' Lubbock TPH DRO - N 72633 62266	ag (6 in. BEB) EW	RL Result <200 Analy Date A Sampl RL	tical Method: Analyzed: le Preparation	Units mg/Kg S 8015 D 2010-08-15 1: 2010-08-13		Dilution 50 Prep M Analyz · Prepar	Aethod: zed By: zed By:	RI 4.00 N/A AW AW
Parameter Chloride Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Fl 0085 - SB-8 1' Lubbock TPH DRO - N 72633 62266 Fl	ag (6 in. BEB) EW	RL Result <200 Analy Date A Sampl RL Result	tical Method: Analyzed: e Preparation	Units mg/Kg S 8015 D 2010-08-15 : 2010-08-13 Units		Dilution 50 Prep M Analyz Prepar Dilution	Aethod: zed By: red By:	RI 4.00 N/A AW AW RL
Parameter Chloride Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter DRO	Fl 0085 - SB-8 1' Lubbock TPH DRO - N 72633 62266 Fla	ag (6 in. BEB) EW	RL Result <200 Analy Date A Sampl RL Result <50.0	tical Method: Analyzed: e Preparation	Units mg/Kg S 8015 D 2010-08-15 : 2010-08-13 Units mg/Kg		Dilution 50 Prep M Analyz Prepar Dilution 1	Aethod: zed By: red By:	RI 4.00 N/A AW AW RL 50.0
Parameter Chloride Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter DRO Surrogate	Fl 0085 - SB-8 1' Lubbock TPH DRO - N 72633 62266 Flag	ag (6 in. BEB) EW ag Result	RL Result <200 Analy Date A Sampl RL Result <50.0 Units	tical Method: Analyzed: e Preparation Dilution	Units mg/Kg S 8015 D 2010-08-15 : 2010-08-13 Units mg/Kg Spil Amou	se int	Dilution 50 Prep M Analyz Prepar Dilution 1 Percent Recovery	Aethod: zed By: red By: Rec Li:	RI 4.00 N/A AW AW RL 50.0 sovery mits

Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	72675	Date Analyzed:	2010-08-12	Analyzed By:	AG
Prep Batch:	62300	Sample Preparation:	2010-08-12	Prepared By:	AG

Report Date: August 17, 2010 114-6400561		V	Work Order: 10080627 COG/Bates #3			Page Number: 8 of 24 Lea County, NM		
Parameter GRO	Flag	<u></u>	RL Result <2.00		Units mg/Kg	<u> </u>	Pilution	RL 2.00
Surrogate Trifluorotolu 4-Bromofluor	ene (TFT) robenzene (4-BFB)	Flag	Result 1.55 1.48	Units mg/Kg mg/Kg	Dilution 1 1	Spike Amount 2.00 2.00	Percent Recovery 78 74	Recovery Limits 48.5 - 152 42 - 159
Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch:	0086 - SB-8 3' (6 in Midland Chloride (Titration) 72482 62101	n. BEB)	Analy Date A Sampl	tical Method: Analyzed: e Preparation	SM 4500- 2010-08-1 : 2010-08-0	-Cl B .0 99	Prep Me Analyze Prepare	ethod: N/A d By: AR d By: AR

		RL			
Parameter	Flag	\mathbf{Result}	Units	Dilution	RL
Chloride		262	mg/Kg	50	4.00

Sample: 240087 - SB-8 5' (6 in. BEB)

B

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 72482 62101	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		<200	mg/Kg	50	4.00

Sample: 240088 - SB-8 7' (6 in. BEB)

Chloride		267	mg/Kg	50	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	62101	Sample Preparation:	2010-08-09	Prepared By:	AR
QC Batch:	72482	Date Analyzed:	2010-08-10	Analyzed By:	\mathbf{AR}
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

Report Date: August 17, 2010	Work Order: 10080627	Page Number: 9 of 24
114-6400561	COG/Bates #3	Lea County, NM

Sample: 240089 - SB-8 10' (6 in. BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72482	Date Analyzed:	2010-08-10	Analyzed By:	\mathbf{AR}
Prep Batch:	62101	Sample Preparation:	2010-08-09	Prepared By:	\mathbf{AR}
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 240090 - SB-8 15' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 72482 62101	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
_		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		219	mg/Kg	50	4.00

Sample: 240091 - SB-8 20' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 72482 62101	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		\mathbf{RL}			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride	· · · · · · · · · · · · · · · · · · ·	<200	mg/Kg	50	4.00

Sample: 240092 - SB-8 25' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 72482 62101	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL	.		
Parameter	Flag	Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

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Sample: 240094 - SB-9 1' (6 in. BEB)

Laboratory:	Midland					
Analysis:	BTEX		Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	72674		Date Analyzed:	2010-08-12	Analyzed By:	AG
Prep Batch:	62300		Sample Preparation:	2010-08-12	Prepared By:	AG
			\mathbf{RL}			
Parameter		Flag	Result	Units	Dilution	RL

Benzene		< 0.0200)	mg/Kg		1	0.0200
Toluene		< 0.0200)	mg/Kg		1	0.0200
Ethylbenzene		<0.0200	l	mg/Kg		1	0.0200
Xylene		< 0.0200)	mg/Kg		1	0.0200
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)	. .	1.57	mg/Kg	1	2.00	78	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.54	mg/Kg	1	2.00	77	38.4 - 157

Sample: 240094 - SB-9 1' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 72482 62101	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 240094 - SB-9 1' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH DRO - 72633 62266	Lubbock TPH DRO - NEW 72633 62266		Analytical Method: Date Analyzed: Sample Preparation:		Prep M Analyz Prepar	Aethod: N/A zed By: AW red By: AW
Parameter		Flag	RL Result		Units	Dilution	RL
DRO	<u> </u>		<50.0	m	g/Kg	1	50.0
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	$f Recovery \ Limits$
n-Tricosane	·····	110	mg/Kg	1	100	110	55.5 - 151

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		••••••••••••••••••••••••••••••••••••••

Sample: 240094 - SB-9 1' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 72675 62300		Analytical Date Anal Sample Pi	Method: yzed: eparation:	S 8015 D 2010-08-12 2010-08-12		Prop Metl Analyzed Prepared	nod: S 5035 By: AG By: AG
			RL				_	
Parameter	Flag		Result		Units	D	lution	RL
GRO			< 2.00		mg/Kg		1	2.00
Surrogate		Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotolu	ene (TFT)		1.73	mg/Kg		2.00	86	48.5 - 152
4-Bromofluor	obenzene (4-BFB)		1.69	mg/Kg	1	2.00	84	42 - 159

Sample: 240095 - SB-9 3' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 72482 62101	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 240096 - SB-9 5' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 72482 62101	Analytical Method: Date Analyzed: Sample Preparation	SM 4500-Cl B 2010-08-10 : 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Demostor	Flor	RL	13-the	Dilution	DI
Parameter	Fiag	Result	Units	Dilution	KL
Chloride		<200	mg/Kg	50	4.00

Sample: 240097 - SB-9 7' (6 in. BEB)

•	,	,				
Laboratory:	Midland					
Analysis:	Chloride (Titration)		Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72483		Date Analyzed:	2010-08-10	Analyzed By:	AR
Prep Batch:	62102		Sample Preparation:	2010-08-09	Prepared By:	AR

Report Date 114-6400561	e: August 17, 2	010	Wor (k Order: 100 COG/Bates ;	80627 #3	Page Number Lea Co	umber: 12 of 24 ea County, NM	
			\mathbf{RL}					
Parameter	1	Flag	Result		Units	Dilution	\mathbf{RL}	
Chloride			<200	1	ng/Kg	50	4.00	
Sample: 24	0098 - SB-9	10' (6 in. BE	B)					
Laboratory	Midland							
Analysis:	Chloride (Tit	ration)	Analytic	al Method	SM 4500-C3 B	Pren Metho	d· N/A	
OC Batch	72483	il dollon y	Date An	alvzed:	2010-08-10	Analyzed By	v AR	
Prep Batch:	62102		Sample H	Preparation:	2010-08-09	Prepared By	r AR	
- sop waven						i reputoti Dj		
			\mathbf{RL}					
Parameter]	Flag	Result		Units	Dilution	\mathbf{RL}	
Chloride			<200	ľ	ng/Kg	50	4.00	
QC Batch: Prep Batch:	72483 62102		Date Ana Sample I	alyzed: Preparation:	2010-08-10 2010-08-09	Analyzed By Prepared By	7: AR 7: AR	
Durumatar	т		KL Rogult		Linita	Dibution	דם	
Chlorido		lag			Units	50	KL	
Sample: 24	0099 - SB-10	1' (6 in. BE	B)		-0,_0_			
Laboratory:	Lubbock							
Analysis:	TPH DRO -	NEW	Analytic	al Method:	S 8015 D	Prep Method	l: N/A	
QC Batch:	72633		Date Ar	alyzed:	2010-08-15	Analyzed By	r: AW	
Prep Batch:	62266		Sample	Preparation:	2010-08-13	Prepared By	: AW	
			RL					
Parameter	I	lag	Result		Units	Dilution	RL	
DRO			<50.0	n	ng/Kg	1	50.0	
					Spike	Percent R	ecoverv	
Surrogate	Flag	Result	Units	Dilution	Amount	Becoverv	Limits	
n-Tricosane	<u> </u>	111	mg/Kg	1	100	111 5	5 - 151	
			1116/11 <u>6</u>	L	100	بن <u>۲۱۱</u>	0.0 - 101	

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Sample: 240099 - SB-10 1' (6 in. BE	B)	
Laboratory: Midland		

Analysis: QC Batch: Prep Batch:	TPH GRO 72675 62300		Analytical Date Anal Sample Pr	Method: lyzed: reparation:	S 8015 D 2010-08-12 2010-08-12		Prep Metl Analyzed Prepared	nod: S 5035 By: AG By: AG
			\mathbf{RL}					
Parameter	Flag		Result		Units	D	ilution	\mathbf{RL}
GRO			<2.00		mg/Kg		1	2.00
Surrogate		Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotolu	ene (TFT)		1.45	mg/Kg	1	2.00	72	48.5 - 152
4-Bromofluor	obenzene (4-BFB)		1.41	mg/Kg	1	2.00	70	42 - 159

Sample: 240100 - SB-10 3' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 72483 62102	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Paramotor	Flag	RL Bosult	Unite	Dilution	PT.
Chloride	r lag	<200	mg/Kg	50	4.00

Sample: 240101 - SB-10 5' (6 in. BEB)

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 72483 62102	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Paramotor	Flag	RL Result	Unite	Dilution	RI.
Chloride	trag	<200	mg/Kg	50	4.00

Sample: 240102 - SB-10 7' (6 in. BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72483	Date Analyzed:	2010-08-10	Analyzed By:	AR
Prep Batch:	62102	Sample Preparation:	2010-08-09	Prepared By:	AR

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D		RL			D.F.
Parameter	Flag	Kesult	Units	Dilution	
Chloride		<200	mg/Kg	50	4.00
Sample: 24	0103 - SB-10 10' (6 in. H	BEB)			
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72483	Date Analyzed:	2010-08-10	Analyzed By:	AR
Prep Batch:	62102	Sample Preparation	2010-08-09	Prepared By:	\mathbf{AR}
		\mathbf{RL}			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		203	mg/Kg	50	4.00
Sample: 24	0104 - SB-10 15' (6 in. E	BEB)			
Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch:	0104 - SB-10 15' (6 in. E Midland Chloride (Titration) 72483 62102	BEB) Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch:	0104 - SB-10 15' (6 in. E Midland Chloride (Titration) 72483 62102	BEB) Analytical Method: Date Analyzed: Sample Preparation: RL	SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch: Parameter	0104 - SB-10 15' (6 in. E Midland Chloride (Titration) 72483 62102 Flag	BEB) Analytical Method: Date Analyzed: Sample Preparation: RL Result	SM 4500-Cl B 2010-08-10 2010-08-09 Units	Prep Method: Analyzed By: Prepared By: Dilution	N/A AR AR RL
Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride	0104 - SB-10 15' (6 in. E Midland Chloride (Titration) 72483 62102 Flag	BEB) Analytical Method: Date Analyzed: Sample Preparation: RL Result 250	SM 4500-Cl B 2010-08-10 2010-08-09 Units mg/Kg	Prep Method: Analyzed By: Prepared By: Dilution 50	N/A AR AR RL 4.00
Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch:	0104 - SB-10 15' (6 in. E Midland Chloride (Titration) 72483 62102 Flag 0105 - SB-10 20' (6 in. E Midland Chloride (Titration) 72483 62102	 BEB) Analytical Method: Date Analyzed: Sample Preparation: RL Result 250 BEB) Analytical Method: Date Analyzed: Sample Preparation: BL 	SM 4500-Cl B 2010-08-10 2010-08-09 Units mg/Kg SM 4500-Cl B 2010-08-10 2010-08-09	Prep Method: Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By:	N/A AR AR 4.00 N/A AR AR
Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 24 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch:	0104 - SB-10 15' (6 in. E Midland Chloride (Titration) 72483 62102 Flag 0105 - SB-10 20' (6 in. E Midland Chloride (Titration) 72483 62102 Flag	 BEB) Analytical Method: Date Analyzed: Sample Preparation: RL Result 250 BEB) Analytical Method: Date Analyzed: Sample Preparation: RL Result 	SM 4500-Cl B 2010-08-10 2010-08-09 Units mg/Kg SM 4500-Cl B 2010-08-10 2010-08-09 Units	Prep Method: Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By: Dilution	N/A AR RL 4.00 N/A AR AR AR

Sample: 240106 - SB-10 25' (6 in. BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72483	Date Analyzed:	2010-08-10	Analyzed By:	AR
Prep Batch:	62102	Sample Preparation:	2010-08-09	Prepared By:	\mathbf{AR}

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Parameter	Flag	RL Result	Units	Dilut	ion	RL	
Chloride		316	mg/Kg		50	4.00	
Method Blank (1)	QC Batch: 72481						
QC Batch: 72481 Prep Batch: 62100		Date Analyzed: QC Preparation:	2010-08-10 2010-08-09		Analyzed By: Prepared By:	AR AR	
Parameter	Flag	M Res	DL sult	Units		\mathbf{RL}	
Chloride		<2	.18	mg/Kg		4	
Method Blank (1)	QC Batch: 72482						
QC Batch: 72482 Prep Batch: 62101		Date Analyzed: QC Preparation:	2010-08-10 2010-08-09		Analyzed By: Prepared By:	AR AR	
		M	DL			DI	
Parameter Chloride	£'lag	Res <2	.18	Units mg/Kg		<u>RL</u> 4	
Method Blank (1)	QC Batch: 72483						
QC Batch: 72483 Prep Batch: 62102		Date Analyzed: QC Preparation:	2010-08-10 2010-08-09		Analyzed By: Prepared By:	AR AR	
Parameter	Flag	MI Res	DL ult	Units		\mathbf{RL}	
Chloride	······································	<2	.18	mg/Kg	······································	4	
Method Blank (1)	QC Batch: 72633						
QC Batch: 72633 Prep Batch: 62266		Date Analyzed: QC Preparation:	2010-08-15 2010-08-13		Analyzed By: Prepared By:	AW AW	
					continu	ed	

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method blank co	ntinued							
				MDL			•	
Parameter		Flag		Result			Juits	
				MDL				
Parameter		Flag		Result	•	τ	Jnits	RL
DRO				7.90		m	g/Kg	50
a	E 1	D h	TT •	D.1		Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Diluti	on	Amount	Recovery	Limits
1- Iricosane		122	mg/Kg	1		100	122	55.5 - 151
QC Batch: 72 Prep Batch: 62	2674 2300		Date Ana QC Prep	alyzed: 20 aration: 20 MD	10-08-12 10-08-12 Г.		Analyz Prepar	ed By: AG ed By: AG
Parameter		Flag		Resul	L .t	I	Units	\mathbf{RL}
Benzene		<u>_</u>		< 0.015	0	n	ng/Kg	0.02
Toluene				<0.0095	0	11	ng/Kg	0.02
Ethylbenzene				<0.010	6	n	ng/Kg	0.02
Xylene			<u> </u>	< 0.0093	0	n	ng/Kg	0.02
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	a Amoun	it Recovery	Limits
Trifluorotoluene	(TFT)	······································	1.89	mg/Kg	1	2.00	94	66.6 - 122
-Bromofluorobe	enzene (4-BF	B)	1.29	mg/Kg	1	2.00	64	55.4 - 132
Vlethod Blank QC Batch: 72 Prep Batch: 62	(1) QC 675 300	8 Batch: 72675	Date Ana QC Prepa	llyzed: 201 aration: 201	10-08-12 10-08-12		Analyz Prepare	ed By: AG 2d By: AG
)		Eler		MDL Besult			(DI
-arameter	·	r lag				U	mts	<u></u>
<u> </u>				<1.00		mį	5/ Mg	<u>∠</u>
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	Amoun	t Recovery	Limits
[rifluorotoluene	(TFT)		2.12	mg/Kg	1	-2.00	106	67.6 - 150
	/ / TO TO 1	1 1	1 90	177		0.00	CO	FO 4 100

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Laboratory Control Spike	e (LCS-1)								
QC Batch: 72481]	Date An	alyzed:	2010-08-10	0		A	nalyzed I	By: AR
Prep Batch: 62100		QC Prep	paration:	2010-08-0	9		F	repared E	By: AR
	LCS	3			Spike	Ma	trix		Rec.
Param	Resu	lt	Units	Dil.	Amount	Re	sult	Rec.	Limit
Chloride		<u>t</u> I	mg/Kg	1	100	<2	2.18		85 - 115
Percent recovery is based on	the spike result. I	RPD is b	based on t	the spike an	ıd spike duj	olicate r	esult.		
	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	103	mg/Kg	1	100	<2.18	103	85 - 11	5 6	20
Percent recovery is based on	the spike result. I	RPD is b	based on t	the spike an	d spike duj	olicate r	esult.		
Laboratory Control Spike	e (LCS-1)								
OC Batch 72482	1	Date An	alvzed	2010-08-10	า		Δ	nalvzed F	Ru- AR
Prep Batch: 62101	(OC Pret	paration:	2010-08-09	3		P	repared F	By: AR
		40 - 10p					-	ropurou L	·j. ·iic
	LCS	5			Spike	Ma	trix		Rec.
Param	Resu	lt	Units	Dil.	Amount	\mathbf{Re}	sult	Rec.	Limit
Chloride	97.3	r	mg/Kg	1	100	<2	2.18	97	85 - 115
	the spike result. F	tPD is t	pased on t	he spike an	d spike duj	licate r	esult.		
Percent recovery is based on	•						Dee		
Percent recovery is based on	LCSD			Spike	Matrix		nec.		RPD
Percent recovery is based on Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Limit	RPD	RPD Limit
Percent recovery is based on Param Chloride	LCSD Result 104	Units mg/Kg	Dil.	Spike Amount 100	Matrix Result <2.18	Rec. 104	Limit 85 - 115	RPD	RPD Limit 20
Percent recovery is based on Param Chloride Percent recovery is based on	LCSD Result 104 the spike result. F	Units mg/Kg {PD is b	Dil. 1 pased on t	Spike Amount 100 he spike an	Matrix Result <2.18 d spike dup	Rec. 104 blicate re	Limit 85 - 115 esult.	RPD	RPD Limit 20
Percent recovery is based on Param Chloride Percent recovery is based on Laboratory Control Spike	LCSD Result 104 the spike result. F	Units mg/Kg {PD is b	Dil. 1 based on t	Spike Amount 100 he spike an	Matrix Result <2.18 d spike dup	Rec. 104 dicate re	Limit 85 - 115 esult.	RPD 7	RPD Limit 20
Percent recovery is based on Param Chloride Percent recovery is based on Laboratory Control Spike OC Batch: 72483	LCSD Result 104 the spike result. F e (LCS-1)	Units mg/Kg PD is b	Dil. 1 pased on t	Spike Amount 100 he spike an 2010-08-10	Matrix Result <2.18 d spike dup	Rec. 104 Dicate re	Limit 85 - 115 esult.	RPD 7	RPD Limit 20
Percent recovery is based on Param Chloride Percent recovery is based on Laboratory Control Spike QC Batch: 72483 Prep Batch: 62102	LCSD Result 104 the spike result. F e (LCS-1)	Units mg/Kg PD is b Date An.	Dil. 1 pased on t alyzed: paration:	Spike Amount 100 he spike an 2010-08-10 2010-08-09	Matrix Result <2.18 d spike dup	Rec. 104 olicate re	Limit 85 - 115 esult.	RPD 7 nalyzed E	RPD Limit 20 By: AR
Percent recovery is based on Param Chloride Percent recovery is based on Laboratory Control Spike QC Batch: 72483 Prep Batch: 62102	LCSD Result 104 the spike result. F e (LCS-1)	Units mg/Kg ?PD is b Date An QC Prep	Dil. 1 pased on t alyzed: paration:	Spike Amount 100 he spike an 2010-08-10 2010-08-09	Matrix Result <2.18 d spike dup	Rec. 104 dicate r	Limit 85 - 115 esult. A P	RPD 7 nalyzed E repared E	RPD Limit 20 By: AR y: AR
Percent recovery is based on Param Chloride Percent recovery is based on Laboratory Control Spike QC Batch: 72483 Prep Batch: 62102	LCSD Result 104 the spike result. F e (LCS-1)	Units mg/Kg PD is b Date An QC Prep	Dil. 1 pased on t alyzed: paration:	Spike Amount 100 he spike an 2010-08-10 2010-08-09	Matrix Result <2.18 d spike dup	Rec. 104 olicate re	Limit 85 - 115 esult. A P trix	RPD 7 nalyzed E repared B	RPD Limit 20 By: AR by: AR by: AR Rec.
Percent recovery is based on Param Chloride Percent recovery is based on Laboratory Control Spike QC Batch: 72483 Prep Batch: 62102 Param	LCSD Result 104 the spike result. F e (LCS-1) I C LCS Resul	Units mg/Kg ?PD is b Date An QC Prep t	Dil. 1 pased on t alyzed: paration: Units	Spike <u>Amount</u> 100 he spike an 2010-08-10 2010-08-09 Dil.	Matrix Result <2.18 d spike dup Spike Amount	Rec. 104 olicate re Ma Res	Limit 85 - 115 esult. A P trix sult	RPD 7 nalyzed E repared E Rec.	RPD Limit 20 By: AR by: AR Rec. Limit
Percent recovery is based on Param Chloride Percent recovery is based on Laboratory Control Spike QC Batch: 72483 Prep Batch: 62102 Param Chloride	LCSD Result 104 the spike result. F e (LCS-1) I LCS Resul 94.3	Units mg/Kg PD is b Date An QC Prep t	Dil. 1 pased on t alyzed: paration: Units ng/Kg	Spike <u>Amount</u> 100 he spike an 2010-08-10 2010-08-09 Dil. 1	Matrix Result <2.18 d spike dup Spike Amount 100	Rec. 104 Ilicate re Ma Res <2	Limit 85 - 115 esult. A P trix sult .18	RPD 7 nalyzed E repared E <u>Rec.</u> 94	RPD Limit 20 By: AR y: AR w: AR Rec. Limit 85 - 115
Percent recovery is based on Param Chloride Percent recovery is based on Laboratory Control Spike QC Batch: 72483 Prep Batch: 62102 Param Chloride Percent recovery is based on	LCSD Result 104 the spike result. F e (LCS-1) (LCS Resul 94.3 the spike result. F	Units mg/Kg PD is b Date An. QC Prep t tPD is b	Dil. 1 pased on t alyzed: paration: Units ng/Kg pased on t	Spike Amount 100 he spike an 2010-08-10 2010-08-09 Dil. 1 he spike an	Matrix Result <2.18 d spike dup Spike Amount 100 d spike dup	Rec. 104 olicate re Ma Res <2 clicate re	Limit 85 - 115 esult. A P trix sult .18 esult.	RPD 7 nalyzed E repared E <u>Rec.</u> 94	RPD Limit 20 By: AR y: AR y: AR Rec. Limit 85 - 115
Percent recovery is based on Param Chloride Percent recovery is based on Laboratory Control Spike QC Batch: 72483 Prep Batch: 62102 Param Chloride Percent recovery is based on	LCSD Result 104 the spike result. F e (LCS-1) I LCS Resul 94.3 the spike result. F LCSD	Units mg/Kg PD is b Date An QC Prep t Date In tPD is b	Dil. 1 pased on t alyzed: paration: Units ng/Kg pased on t	Spike <u>Amount</u> 100 he spike an 2010-08-10 2010-08-09 Dil. 1 he spike an Spike	Matrix Result <2.18 d spike dup d spike dup Amount 100 d spike dup Matrix	Rec. 104 Ilicate re Ma Res <2 Ilicate re	Limit <u>85 - 115</u> esult. A P trix sult .18 esult. Rec.	RPD 7 nalyzed E repared E <u>Rec.</u> 94	RPD Limit 20 By: AR y: AR w: AR Rec. Limit 85 - 115 RPD
Percent recovery is based on Param Chloride Percent recovery is based on Laboratory Control Spike QC Batch: 72483 Prep Batch: 62102 Param Chloride Percent recovery is based on Param	LCSD Result 104 the spike result. F (LCS-1) (CS) Resul 94.3 the spike result. F LCSD Result	Units mg/Kg PD is b Date An QC Prep t Date D is b Units	Dil. 1 pased on t alyzed: paration: Units ng/Kg pased on t Dil.	Spike Amount 100 he spike an 2010-08-10 2010-08-09 Dil. 1 he spike an Spike Amount	Matrix Result <2.18 d spike dup Spike Amount 100 d spike dup Matrix Result	Rec. 104 licate re Ma Res <2 licate re Rec.	Limit <u>85 - 115</u> esult. A P trix sult .18 esult. Rec. Limit	RPD 7 nalyzed E repared E Rec. 94 RPD	RPD Limit 20 By: AR y: AR Wec. Limit 85 - 115 RPD Limit

114-6400561	Work Order: 10080627 COG/Bates #3						Page Number: 18 of 24 Lea County, NM				
Laboratory Control Sp	ike (LC	CS-1)									
QC Batch: 72633 Prep Batch: 62266			Date A QC Pr	Analyzed: reparation	2010-08 n: 2010-08	-15 -13			Anal Prep	yzed B ared By	y: AW y: AW
Param		L. Re	CS sult	Units	Dil.	Spike Amoun	M t F	fatrix Result	Re	с.	Rec. Limit
DRO		2	68	mg/Kg	1	250	• • • • •	7.9	10	4	76 - 157
Percent recovery is based of	on the s	pike result	. RPD is	s based or	n the spike	and spike d	uplicate	result	-		
v					- 	- 	•	-			
D		LUSD Decult	TT:4	a 1041	Spike	Matrix	Dee	t T	{ec. '	חחח	RPD
DRO		263	mg/k	5 Dli.	Amoun 250	7 0 T	<u>nec.</u> 102	76	- 157	7 NFD	<u></u>
		1		<u>-</u> 5 <u>-</u>		<u> </u>		- 10	- 101		20
Percent recovery is based (on ene sj	pike result	. RPD 8	s based of	a the spike	and spike o	upiicate	result	•		
	LCS	LCSD				Spike	\mathbf{LC}	S	LCSD		Rec.
Surrogate R	lesult	Result	U	Jnits	Dil.	Amount	Rec	2.	Rec.		Limit
TT The second	113	109	m	g/Kg	1	100	113	3	109	58	5.5 - 151
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300	ike (LC	CS-1)	Date A QC Pr	Analyzed: eparation	2010-08 1: 2010-08	-12 -12			Anal Prep	yzed B ared By	y: AG y: AG
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300	ike (LC	CS-1) LC	Date A QC Pr S	Analyzed: eparation	2010-08 n: 2010-08	-12 -12 Spike	Ma	trix	Anal Prep	yzed B ared By	y: AG y: AG Rec.
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param	ike (LC	CS-1) LC Rest	Date A QC Pr S ult	Analyzed: eparation Units	2010-08 a: 2010-08 Dil.	-12 -12 Spike Amount	Ma Res	trix sult	Anal Prep Rec.	yzed B ared By	y: AG y: AG Rec. Limit
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene	ike (LC	CS-1) LC Rest 2.0	Date A QC Pr S ult 6 1	Analyzed: eparation Units mg/Kg	2010-08 a: 2010-08 Dil. 1	-12 -12 Spike Amount 2.00	Ma Res <0.0	trix sult	Anal Prep Rec. 103	yzed B ared By 81	y: AG y: AG Rec. Limit .9 - 108
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene	ike (LC	LC Rest 2.0 2.0	Date A QC Pr S ult 6 1 4 1	Analyzed: eparation <u>Units</u> mg/Kg mg/Kg	2010-08 a: 2010-08 Dil. 1 1	-12 -12 Spike <u>Amount</u> 2.00 2.00	Ma Res <0.0 <0.0	trix sult 1150 0950	Anal Prep <u>Rec.</u> 103 102	yzed B ared B 81 81 81	y: AG y: AG Rec. Limit 1.9 - 108 1.9 - 107
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene	ike (LC	LC Ress 2.0 2.0 1.9	Date A QC Pr S ult 6 1 4 1 7 1	Analyzed: eparation Units mg/Kg mg/Kg mg/Kg	2010-08 n: 2010-08 Dil. 1 1 1	-12 -12 Spike <u>Amount</u> 2.00 2.00 2.00	Ma Res <0.0 <0.0 <0.0	trix sult 0150 0950 0106	Anal Prep <u>Rec.</u> 103 102 98	yzed B ared B 81 81 78	y: AG y: AG Rec. Limit 1.9 - 108 1.9 - 107 3.4 - 107
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene	ike (LC	LC Rest 2.0 1.9 5.9	Date A QC Pr S ult 6 1 7 1 3 1	Analyzed: eparation <u>Units</u> mg/Kg mg/Kg mg/Kg mg/Kg	2010-08 n: 2010-08 Dil. 1 1 1 1 1	-12 -12 Spike <u>Amount</u> 2.00 2.00 2.00 6.00	Ma Res <0.0 <0.0 <0.0 <0.0	trix sult)150 0950)106 0930	Anal Prep Rec. 103 102 98 99	yzed B ared B 81 81 78 79	y: AG y: AG Rec. Limit 1.9 - 108 1.9 - 107 3.4 - 107 0.1 - 107
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of	ike (LC	LC Rest 2.0 2.0 1.9 5.9 pike result.	Date A QC Pr S ult 6 1 4 1 7 1 3 1 RPD is	Analyzed: eparation mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	2010-08 a: 2010-08 Dil. 1 1 1 1 1 1 1	-12 -12 Spike <u>Amount</u> 2.00 2.00 2.00 6.00 and spike d	Ma Res <0.0 <0.0 <0.0 <0.0 uplicate	trix sult 0150 0950 0106 0930 result.	Anal Prep Rec. 103 102 98 99	yzed B ared By 81 81 78 79	y: AG y: AG <u>Limit</u> 1.9 - 108 1.9 - 107 3.4 - 107 9.1 - 107
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of	ike (LC	LC Ress 2.0 2.0 1.9 5.9 pike result. LCSD	Date A QC Pr S ult 6 1 4 1 7 1 3 1 RPD is	Analyzed: eparation mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	2010-08 n: 2010-08 Dil. 1 1 1 1 1 1 1 1 Spike	-12 -12 Spike <u>Amount</u> 2.00 2.00 2.00 6.00 and spike d Matrix	Ma Res <0.0 <0.0 <0.0 <0.0 uplicate	trix sult 0150 0950 0106 0930 result. B	Anal Prep Rec. 103 102 98 99	yzed B ared B 81 81 78 79	y: AG y: AG Rec. Limit 1.9 - 108 1.9 - 107 3.4 - 107 0.1 - 107 BPD
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of Param	ike (LC	LC Rest 2.0 2.0 1.9 5.9 pike result. LCSD Result	Date A QC Pr S ult 6 1 4 1 7 1 3 1 RPD is Units	Analyzed: eparation <u>Units</u> mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg s based or Dil.	2010-08 2010-08 Dil. 1 1 1 1 1 1 1 1 Spike Amount	-12 -12 Spike <u>Amount</u> 2.00 2.00 6.00 and spike d Matrix Result	Ma Res <0.0 <0.0 <0.0 uplicate Rec.	trix sult)150 0950)106 0930 result. R Li	Anal Prep Rec. 103 102 98 99 tec. imit	yzed B ared B 81 78 79 RPD	y: AG y: AG Rec. Limit 1.9 - 108 1.9 - 107 3.4 - 107 0.1 - 107 RPD Limit
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of Param Benzene	ike (LC	LC Rest 2.0 2.0 1.9 5.9 pike result. LCSD Result 1.97	Date A QC Pr S ult 6 1 3 1 RPD is Units mg/Kg	Inalyzed: eparation mg/Kg mg/Kg mg/Kg mg/Kg based or Dil.	2010-08 2010-08 Dil. 1 1 1 1 1 1 1 Spike Amount 2.00	-12 -12 Spike Amount 2.00 2.00 6.00 and spike d Matrix Result <0.0150	Ma Res <0.0 <0.0 <0.0 uplicate <u>Rec.</u> 98	trix sult)150 0950)106 0930 result. R Li 81.9	Anal Prep Rec. 103 102 98 99 tec. imit	yzed B ared B 81 81 75 75 RPD 4	y: AG y: AG Rec. Limit 1.9 - 108 1.9 - 107 3.4 - 107 3.4 - 107 RPD Limit 20
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of Param Benzene Toluene	ike (LC	LC Ress 2.0 2.0 1.9 5.9 pike result. LCSD Result 1.97 1.95	Date A QC Pr S ult 6 1 4 1 7 1 3 1 RPD is <u>Units</u> mg/Kg mg/Kg	Analyzed: eparation mg/Kg mg/Kg mg/Kg mg/Kg based or Dil. 1 1	2010-08 2010-08 Dil. 1 1 1 1 1 1 1 1 1 1 1 1 1	-12 -12 Spike Amount 2.00 2.00 6.00 and spike d Matrix Result <0.0150 <0.00950	Ma Res <0.0 <0.0 <0.0 <0.0 uplicate Rec. 98 98	trix sult)150 0950)106 0930 result. R Li 81.9 81.9 81.9	Anal Prep Rec. 103 102 98 99 tec. imit - 108 - 107	yzed B ared By 81 81 75 75 82 75 75 75 75 75 75 75 75 75 75 75 75 75	y: AG y: AG Rec. Limit 1.9 - 108 1.9 - 107 3.4 - 107 0.1 - 107 RPD Limit 20 20
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of Param Benzene Toluene Ethylbenzene	ike (LC	LC Ress 2.0 2.0 1.9 5.9 pike result. LCSD Result 1.97 1.95 1.90	Date A QC Pr S ult 6 1 4 1 7 1 3 1 RPD is mg/Kg mg/Kg mg/Kg	Analyzed: eparation mg/Kg mg/Kg mg/Kg mg/Kg based or Dil. 1 1 1	2010-08 2010-08 Dil. 1 1 1 1 1 1 1 1 1 1 1 1 1	-12 -12 Spike <u>Amount</u> 2.00 2.00 6.00 and spike d Matrix <u>Result</u> <0.0150 <0.00950 <0.0106	Ma Res <0.0 <0.0 <0.0 <0.0 uplicate Rec. 98 98 98 95	trix sult)150 0950)106 0930 result. R Li 81.9 81.9 81.9 78.4	Anal Prep Rec. 103 102 98 99	yzed B ared B 81 81 78 79 82 79 81 78 79 81 78 79 81 81 78 79 81 81 81 78 79 81 81 81 81 81 81 81 81 81 81 81 81 81	y: AG y: AG Rec. Limit 1.9 - 108 1.9 - 107 3.4 - 107 0.1 - 107 RPD Limit 20 20 20 20
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of Param Benzene Toluene Ethylbenzene Toluene Ethylbenzene Xylene	ike (LC	LC Rest 2.0 2.0 1.9 5.9 pike result. LCSD Result 1.97 1.95 1.90 5.74	Date A QC Pr S ult 6 1 7 1 3 1 RPD is Mg/Kg mg/Kg mg/Kg	Analyzed: eparation mg/Kg mg/Kg mg/Kg based or Dil. 1 1 1 1	2010-08 2010-08 Dil. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-12 -12 Spike Amount 2.00 2.00 6.00 and spike d Matrix Result <0.0150 <0.00950 <0.0106 <0.00930	Ma Res <0.0 <0.0 <0.0 uplicate Rec. 98 98 95 96	trix sult 0150 0950 0106 0930 result. R Li 81.9 81.9 78.4 79.1	Anal Prep Rec. 103 102 98 99 tec. imit - 108 - 107 - 107 - 107	yzed B ared B 81 78 79 <u>RPD</u> 4 4 3	y: AG y: AG Rec. Limit .9 - 108 .9 - 107 3.4 - 107 0.1 - 107 RPD Limit 20 20 20 20
n-Tricosane Laboratory Control Spin QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of Param Benzene Toluene Ethylbenzene Xylenc Percent recovery is based of	ike (LC	LC Rest 2.0 2.0 1.9 5.9 pike result. LCSD Result 1.97 1.95 1.90 5.74 pike result.	Date A QC Pr S ult 6 1 7 1 3 1 RPD is <u>Units</u> mg/Kg mg/Kg mg/Kg RPD is	Units mg/Kg mg/Kg mg/Kg based or Dil. 1 1 1 1 1 1 based or	2010-08 2010-08 Dil. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2.00 2.00	-12 -12 Spike Amount 2.00 2.00 6.00 and spike d Matrix Result <0.0150 <0.00950 <0.0106 <0.00930 and spike d	Ma Res <0.0 <0.0 <0.0 <0.0 uplicate	trix sult)150 0950)106 0930 result. R Li 81.9 81.9 81.9 78.4 79.1 result.	Anal Prep Rec. 103 102 98 99 99 Rec. imit - 108 - 107 - 107 - 107	yzed B ared B 81 81 75 75 <u>RPD</u> 4 4 4 3	y: AG y: AG Rec. Limit 1.9 - 108 1.9 - 107 3.4 - 107 3.4 - 107 0.1 - 107 RPD Limit 20 20 20 20
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of Param	ike (LC	LC Rest 2.0 2.0 1.9 5.9 pike result. LCSD Result 1.97 1.95 1.90 5.74 pike result. LCC	Date A QC Pr S ult 6 1 7 1 3 1 RPD is Mg/Kg mg/Kg mg/Kg mg/Kg RPD is S L4	Analyzed: eparation mg/Kg mg/Kg mg/Kg based or Dil. 1 1 1 1 based on CSD	2010-08 2010-08 Dil. 1 1 1 1 1 1 1 1 1 1 1 1 1	-12 -12 Spike Amount 2.00 2.00 6.00 and spike d Matrix Result <0.0150 <0.00950 <0.0106 <0.00930 and spike d SI	Ma Res <0.0 <0.0 <0.0 uplicate Rec. 98 98 95 96 uplicate ike	trix sult 0150 0950 0106 0930 result. R Li 81.9 78.4 79.1 result. LCS	Anal Prep Rec. 103 102 98 99 tec. imit - 108 - 107 - 107 - 107 LCSI	yzed B ared B 81 78 79 <u>RPD</u> 4 4 3	y: AG y: AG Rec. Limit .9 - 108 .9 - 107 3.4 - 107 0.1 - 107 RPD Limit 20 20 20 Rec.
Laboratory Control Spi QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of Param Benzene Toluene Ethylbenzene Xylenc Percent recovery is based of Surrogate	ike (LC	LC Rest 2.0 2.0 1.9 5.9 pike result. LCSD Result 1.97 1.95 1.90 5.74 pike result. LCC Result	Date A QC Pr S ult 6 1 7 1 3 1 RPD is Mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	Units mg/Kg mg/Kg mg/Kg based or Dil. 1 1 1 1 based on CSD esult	2010-08 2010-08 Dil. 1 1 1 1 1 1 1 1 1 1 1 1 1	-12 -12 Spike Amount 2.00 2.00 6.00 and spike d Matrix Result <0.0150 <0.00950 <0.0106 <0.00930 and spike d SI Dil. Am	Ma' Res <0.0 <0.0 <0.0 uplicate $\frac{Rec.}{98}$ 98 95 96 uplicate iike ount	trix sult 1150 0950 1106 0930 result. R Li 81.9 81.9 78.4 79.1 result. LCS Rec.	Anal Prep Rec. 103 102 98 99 tec. imit - 108 - 107 - 107 - 107 - 107 - 107 LCSI Rec.	yzed B ared B 81 81 75 75 82 75 82 75 82 81 81 75 75 82 81 81 81 81 81 75 82 81 81 81 81 81 81 81 81 81 81 81 81 81	y: AG y: AG Rec. Limit .9 - 108 .9 - 107 3.4 - 107 3.4 - 107 3.4 - 107 RPD Limit 20 20 20 Rec. Limit
n-Tricosane Laboratory Control Spinal QC Batch: 72674 Prep Batch: 62300 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based of the second	ike (LC	LC Rest 2.0 2.0 1.9 5.9 pike result. LCSD Result 1.97 1.95 1.90 5.74 pike result. LC. Result	Date A QC Pr S ult 6 1 7 1 3 1 RPD is <u>Units</u> mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg S Lu ilt Ru 0 1	Units mg/Kg mg/Kg mg/Kg based or Dil. 1 1 1 1 based on CSD esult	2010-08 Dil. 1 1 1 1 1 1 1 1 1 1 1 1 1	-12 -12 Spike <u>Amount</u> 2.00 2.00 2.00 6.00 and spike d Matrix <u>Result</u> <0.0150 <0.00950 <0.00950 <0.0106 <0.00930 and spike d SI Dil. Am 1 2	Ma Res <0.0 <0.0 <0.0 uplicate Rec. 98 98 95 96 uplicate sike ount 00	trix sult)150 0950)106 0930 result. R Li 81.9 81.9 78.4 79.1 result. LCS Rec. 85	Anal Prep Rec. 103 102 98 99 99 tec. imit - 108 - 107 - 107 - 107 - 107 - 107 - 89	yzed B ared By 81 81 72 72 <u>RPD</u> 4 4 4 3 70 70	y: AG y: AG Rec. Limit .9 - 108 1.9 - 107 3.4 - 107 3.4 - 107 3.4 - 107 0.1 - 107 RPD Limit 20 20 20 20 20 20 20 20 20 20

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Laboratory Control Spike (LCS- QC Batch: 72675 Prep Batch: 62300	-1) [Work Order: 10080627 Page Nur COG/Bates #3 Le:								
QC Batch: 72675 Prep Batch: 62300	Г С											
Prep Batch: 62300	C	Date Analy	zed:	2010-08	-12			Anal	vzed B	v: AG		
		QC Prepar	ation:	2010-08	-12			Prep	ared By	: AG		
	LCS				Spike	Ma	trix			Rec.		
Param	Result	; Uni	ts	Dil.	Amount	Re	sult	Rec.		Limit		
GRO	14.8	mg/1	Kg	1	20.0	<1	.65	74	69	.9 - 95.4		
Percent recovery is based on the spik	e result. R	PD is base	ed on t	the spike	and spike d	plicate	result.					
	LCSD			Spike	Matrix		Ro	ve.		RPD		
Param	Besult	Units 1	DiL	Amount	Result	Bec	Lin	nit	RPD	Limit		
GRO	15.0 r	ng/Kg	$\frac{1}{1}$	20.0	<1.65	75	69.9 -	95.4	1	20		
Percent recovery is based on the spik	e result. R	PD is base	ed on t	the spike	and spike d	plicate	result.					
	TOO	TOOD		-F		-r	таа	таат	~	n		
Sumarata	LOS Rogult	LUSD Result	Ľ	Tanita	Dil Am	ike	LUS	LUSI Pac	J	Rec.		
Driffueret eluene (TET)		2 03		alla a	$\frac{D_{11}}{1}$ Am	oo	61 01	<u></u>	61	$\frac{1}{0}$ $\frac{1}{142}$		
A Bromofluorohonzone (4-BFB)	1.02	2.00	nit m	g/Kg g/Kg	1 2.	00	91	102 89	69	9 - 144 19 - 199		
QC Batch: 72481 Prep Batch: 62100	ር ር)ate Analy 2C Prepara	zed: ation:	2010-08- 2010-08-	-10 -09			Analy Prepa	yzed By ared By	7: AR 7: AR		
					C • • • • •							
2	MS			D .1	. Spike	M	latrix			Rec.		
Param	MS Result	Uni	its	Dil.	Amount	M R	latrix esult	Rec	<u> </u>	Rec. Limit		
Param Chloride	MS Result 10100	: Uni	its Kg	Dil. 100	Amount 10000	M 	latrix esult <218	Rec 100		Rec. Limit 35 - 115		
Param Chloride Percent recovery is based on the spik	MS Result 10100 e result. R	Uni mg/ PD is base	its Kg d on t	Dil. 100 he spike a	Amount 10000 and spike du	M R vplicate	latrix esult <218 result.	Rec 100	{	Rec. Limit 35 - 115		
Param Chloride Percent recovery is based on the spik	MS Result 10100 e result. R MSD	2 Uni mg/ PD is base	its Kg d on t	Dil. 100 he spike s Spike	Amount 10000 and spike du Matrix	M R vplicate	latrix esult <218 result. Re	Rec 100	<u>.</u> {	Rec. Limit 35 - 115 RPD		
Param Chloride Percent recovery is based on the spik Param	MS Result 10100 e result. R MSD Result	Units	its Kg d on t Dil.	Dil. 100 he spike a Spike Amount	Amount 10000 and spike du Matrix Result	M R vplicate Rec.	latrix esult 218 result. Re Lin	Rec 100 ec. nit	RPD	Rec. Limit 35 - 115 RPD Limit		

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

Report Date 114-6400561	e: August 1	Work Order: 10080627 COG/Bates #3					Page Number: 20 o Lea County,				
Param Chloride			MSD Result 10300	Units mg/Kg	Dil. g 100	Spike Amount 10000	Matrix Result <218	Rec.	Rec. Limit 85 - 115	RPD 3	RPD Limit 20
Percent reco	verv is base	d on the s	pike result.	RPD is	based on	the spike a	and spike du	plicate r	esult.		
			F				ard spins as	prioaco i			
Matrix Spi	ke (MS-1)	Spiked	l Sample: 24	40106							
QC Batch:	72483			Date A:	nalyzed:	2010-08-	10		An	alyzed H	By: AR
Prep Batch:	62102			QC Pre	paration:	2010-08-	09		Pro	epared E	By: AR
			M	S			Spike	Ma	trix		Rec.
Param			Res	ult	Units	Dil.	Amount	Res	sult R	lec.	Limit
Chloride	····		94(50	mg/Kg	100	10000	3	16	91	85 - 115
Percent reco	very is base	d on the s	pike result.	RPD is	based on	the spike a	und spike du	plicate r	esult.		
			MSD			Spike	Matrix		Rec.		RPD
Param			Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			9710	mg/Kg	g 100	10000	316	94	85 - 115	3	20
Matrix Spi QC Batch: Prep Batch:	ke (MS-1) 72633 62266	Spiked	Sample: 24	40907 Date Ar QC Prej	alyzed: paration:	2010-08-1 2010-08-1	15 13		An: Pre	alyzed B pared B	y: AW y: AW
			MS	S			Spike	Ma	trix		Rec.
Param			Rest	ult	Units	Dil.	Amount	Res	sult R	ec.	Limit
DRO			25	9	mg/Kg	1	250	<7	.46 1	04	76 - 157
Percent recov	very is base	d on the sp	pike result.	RPD is	based on f	he spike a	nd spike duj	plicate re	esult.		
			MSD			Spike	Matrix		Rec.		RPD
Param			Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO			256	mg/Kg	1	250	<7.46	102	76 - 157	1	20
Percent recov	very is base	d on the sp	pike result.	RPD is	based on t	he spike a	nd spike du	olicate re	esult.		
		MS	MSD				Spike	MS	MSD	1	Rec.
Surrogate		Result	Result	Uı	nits	Dil.	Amount	Rec.	Rec.		Limit
n-Tricosane		109	107	mg	/Kg	1	100	109	107	5	5.1 - 151
Matrix Spil QC Batch: Prep Batch:	ke (MS-1) 72674 62300	Spiked	Sample: 24	10075 Date An OC Prei	nalyzed:	2010-08-1 2010-08-1	12		An: Pre	alyzed B pared B	y: AG v: AG

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	М	S			Spike	Ма	ıtrix			Rec.
Param	Res	ult	Units	Dil.	Amount	Re	sult	Rec.		Limit
Benzene	2.2	20	mg/Kg	1	2.00	<0.	0150	110	- 8	0.5 - 11
Toluene	2.3	35	mg/Kg	1	2.00	0.1	544	110	8:	2.4 - 11
Ethylbenzene	¹ 2.6	50	mg/Kg	1	2.00	0.2	893	116	8	3.9 - 11
Xylene	² 8.2	22	mg/Kg	1	6.00	1.0	291	120	8	34 - 114
Percent recovery is based on the s	pike result.	. RPD is	s based o	n the spike	and spike	duplicate	result.			
	MSD			Spike	Matrix		Re	c.		RPI
Param	Result	Units	Dil.	Amount	Result	Rec.	Lin	1it	RPD	Limi
Benzene	2.16	mg/Kg	g 1	2.00	< 0.015) 108	80.5 -	112	2	20
Toluene	2.32	mg/Kg	g 1	2.00	0.1544	108	82.4 -	113	1	20
Ethylbenzene	2.67	mg/Kg	g 1	2.00	0.2893	119	83.9 -	114	3	20
Xylene 4	8.39		g 1	6.00	1.0291	123	84 -	114	2	20
Percent recovery is based on the s	pike result.	RPD is	s based o	n the spike	and spike	duplicate	result.			
	M	S I	MSD			Spike	MS	MSD	I	Rec.
Surrogate	Res	ult R	lesult	Units	Dil. A	.mount	Rec.	Rec.		Limit
Trifluorotoluene (TFT)	1.3	31	2.12	mg/Kg	1	2	66	106	4	.3 - 11'
		1	9.97	malla	1	2	96	144	35	i.5 - 129
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spiked QC Batch: 72675	⁵ 1.9 I Sample: 2	40248 Date A	analyzed:	2010-08	-12			Analy	zed B	v: AG
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spiked QC Batch: 72675 Prep Batch: 62300	⁵ 1.9	40248 Date A QC Pr	analyzed: cparation	2010-08- n: 2010-08-	-12 -12			Analy Prepa	zed By	y: AG v: AG
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spiked QC Batch: 72675 Prep Batch: 62300	^b 1.9 I Sample: 2 M!	40248 Date A QC Pr S	analyzed: cparation	2010-08- n: 2010-08-	-12 -12 Spike	Ma	trix	Analy Prepa	zed By	y: AG 7: AG Rec.
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spiked QC Batch: 72675 Prep Batch: 62300	^b 1.9 I Sample: 2 Ms Rest	40248 Date A QC Pr S ult	nalyzed: cparation Units	2010-08- n: 2010-08- Dil.	-12 -12 Spike Amount	Ma Rea	trix sult	Analy Prepa Rec.	zed By	y: AG v: AG Rec. Limit
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spiked QC Batch: 72675 Prep Batch: 62300 Param GRO	^b 1.9 I Sample: 2 Ms <u>Res</u> 14.	40248 Date A QC Pr S ult 5	units	Dil.	-12 -12 Spike <u>Amount</u> 20.0	Ma Re: <1	trix sult 65	Analy Prepa Rec. 72	zed By red By	y: AG r: AG Rec. Limit .8 - 114
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spiked QC Batch: 72675 Prep Batch: 62300 Param GRO Percent recovery is based on the s	^b 1.9 I Sample: 2 Ms <u>Res</u> 14. pike result.	40248 Date A QC Pr S ult .5 RPD is	Units	Dil. 1 n the spike	-12 -12 Amount 20.0 and spike	Ma Re <1 duplicate	trix sult 65 result.	Analy Prepa Rec. 72	zed By red By 61	y: AG y: AG Rec. Limit .8 - 114
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spike QC Batch: 72675 Prep Batch: 62300 Param GRO Percent recovery is based on the s	^b 1.9 d Sample: 2 MS Resu 14. pike result. MSD	40248 Date A QC Pr S ult 5 RPD is	Units mg/Kg based o	Dil. 1 n the spike Spike	-12 -12 Spike <u>Amount</u> 20.0 and spike Matrix	Ma Re: <1 duplicate	trix sult 65 result. Rec	Analy Prepa Rec. 72	zed By red By 61	y: AG r: AG Rec. Limit .8 - 114 RPD
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spike QC Batch: 72675 Prep Batch: 62300 Param GRO Percent recovery is based on the s Param	^b 1.9 d Sample: 2 MS 14. pike result. MSD Result	40248 Date A QC Pr S ult 5 RPD is Units	Units mg/Kg based o Dil.	2010-08 a: 2010-08 Dil. 1 n the spike Amount	-12 -12 Amount 20.0 and spike Matrix Result	Ma Rei <1 duplicate Rec.	trix sult 65 result. Rec Limi	Analy Prepa Rec. 72	zed B red By 61 RPD	y: AG r: AG Limit .8 - 114 RPD Limit
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spike QC Batch: 72675 Prep Batch: 62300 Param GRO Percent recovery is based on the s Param GRO	^b 1.9 I Sample: 2 MS Result 14. pike result. MSD Result 15.3	40248 Date A QC Pr S ult .5 RPD is Units mg/Kg	Units mg/Kg based o Dil.	Dil. Dil. 1 n the spike Amount 20.0	-12 -12 Spike Amount 20.0 and spike Matrix Result <1.65	Ma Rec <1 duplicate Rec. 76	trix sult 65 result. Rec Limi 61.8 -	Analy Prepa Rec. 72	zed B red By 61 RPD 5	y: AG r: AG Rec. Limit .8 - 114 RPD Limit 20
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spike QC Batch: 72675 Prep Batch: 62300 Param GRO Percent recovery is based on the s Param GRO Percent recovery is based on the s	b 1.9 d Sample: 2 MSD Result MSD Result 15.3 pike result.	40248 Date A QC Pr S ult 5 RPD is <u>Units</u> RPD is	Units mg/Kg based o Dil. g 1 based o	Dil. 2010-08- a: 2010-08- Dil. 1 n the spike Amount 20.0 n the spike	-12 -12 Spike Amount 20.0 and spike Matrix Result <1.65 and spike	Ma Rei <1 duplicate Rec. 76 duplicate	trix sult 65 result. Rec Limi 61.8 - result.	Analy Prepa Rec. 72	zed B red B 61 RPD 5	y: AG r: AG Rec. Limit .8 - 114 RPD Limit 20
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spike QC Batch: 72675 Prep Batch: 62300 Param GRO Percent recovery is based on the s Param GRO Percent recovery is based on the s	b 1.9 d Sample: 2 d Sample: 2 MSL MSD Result 15.3 pike result. MSD Result	40248 Date A QC Pr S ult 5 RPD is <u>Units</u> RPD is S	Units mg/Kg based o Dil. sased o MSD	2010-08- : 2010-08- : 2010-08- Dil. 1 n the spike Amount 20.0 n the spike a	-12 -12 Amount 20.0 and spike Matrix Result <1.65 and spike	Ma Re: <1 duplicate Rec. 76 duplicate Spike	trix sult 65 result. End 61.8 - result. MS	Analy Prepa Rec. 72 it 114 MSI	zed By red By 61 RPD 5	y: AG r: AG Limit .8 - 114 RPD Limit 20 Rec.
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spike QC Batch: 72675 Prep Batch: 62300 Param GRO Percent recovery is based on the s Param GRO Percent recovery is based on the s Surrogate	b 1.9 d Sample: 2 d Sample: 2 MSD Result 15.3 pike result. MSD Result 15.3 pike result. MS Result	40248 Date A QC Pr S ult 5 RPD is <u>Units</u> <u>mg/K</u> RPD is S S	Units mg/Kg based o Dil. g 1 based o MSD Result	2010-08- : 2010-08- Dil. 1 n the spike Spike Amount 20.0 n the spike = Units	-12 -12 Amount 20.0 and spike Matrix Result <1.65 and spike Dil.	Ma Re: <1 duplicate Rec. 76 duplicate Spike Amount	trix sult 65 result. G1.8 - result. MS Rec.	Analy Prepa Rec. 72 it 114 MSI Rec	zed By red By 61 RPD 5	y: AG r: AG Limit .8 - 114 RPD Limit 20 Rec. Limit
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spike QC Batch: 72675 Prep Batch: 62300 Param GRO Percent recovery is based on the s Param GRO Percent recovery is based on the s Surrogate Frifluorotoluene (TFT)	b 1.9 d Sample: 2 MSD Result 15.3 pike result. MSD Result 15.3 pike result. MSD Result 15.3 pike result.	40248 Date A QC Pr S ult 5 RPD is <u>Units</u> RPD is S S 2 ult F 22	Units mg/Kg based o Dil. <u>g 1</u> based o MSD Result 1.69	Dil. 2010-08- Dil. 1 n the spike Amount 20.0 n the spike Units mg/Kg	-12 -12 Amount 20.0 and spike Matrix Result <1.65 and spike Dil.	Ma Re: <1 duplicate Rec. 76 duplicate Spike Amount 2	trix sult 65 result. Rec Limi 61.8 - result. MS Rec. 91	Analy Prepa Rec. 72 it 114 MSI Rec 84	zed B red By 61 RPD 5	y: AG r: AG Limit .8 - 114 RPD Limit 20 Rec. Limit 50 - 162

Report Dat 114-640056	Report Date: August 17, 2010 114-6400561			ork Order: 100 COG/Bates ₇	Page Number: 22 of 2 Lea County, N			
Standard ((ICV-1)							
QC Batch:	72481		Date Ana	lyzed: 2010-0	Analyzed By: AR			
Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Becovery	Percent Recovery Limits	Date Analyzed	
Chloride		mg/Kg	100	102	102	85 - 115	2010-08-10	
Standard ((CCV-1)							
QC Batch:	72481		Date Ana	lyzed: 2010-08	3-10	Anal	yzed By: AR	
_			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date	
Param Chloride	Flag	Units mg/Kg	Conc	Conc. 	Recovery 98	85 - 115	Analyzed 2010-08-10	
_			·····	· .				
Standard ((ICV-1)							
QC Batch:	72482		Date Ana	lyzed: 2010-08	8-10	Ana	yzed By: AR	
Рагат	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
<u>Chloride</u>		mg/Kg	100	98.4	98	85 - 115	2010-08-10	
Standard (QC Batch:	(CCV-1) 72482		Date Anal	lyzed: 2010-08	3-10	Anal	yzed By: AR	
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date	
Param	Flag	Units	<u>Conc.</u>	<u>Conc.</u>	Recovery	Limits	Analyzed	
Chioride	·	ing/ Kg	100	102	102	00 - 110	2010-06-10	
Standard ((ICV-1)	·						
QC Batch:	72483		Date Anal	lyzed: 2010-08	3-10	Anal	yzed By: AR	
			ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Chloride		mg/Kg	100		110	85 - 115	2010-08-10	

Report Da 114-640056	Report Date: August 17, 2010 114-6400561			rk Order: 1008 COG/Batcs #	Page Number: 23 of Lea County, N			
Standard	(CCV-1)							
QC Batch:	72483		Date Anal	yzed: 2010-08	-10	Analyzed By: AR		
			CCVs True	CCVs Found	CCVs	Percent Recovery	Date	
Param Chloride	Flag	Units mg/Kg	Conc. 100	Conc. 90.3	Recovery 90	Limits 85 - 115	Analyzed 2010-08-10	
Standard	(CCV-1)							
QC Batch:	72633		Date Analy	yzed: 2010-08	-15	Analyzed By: AW		
Param	Flag	Units	CCVs True Conc	CCVs Found Conc	CCVs Percent Becovery	Percent Recovery Limits	Date Analyzed	
DRO	Tiag	mg/Kg	250	267	107	80 - 120	2010-08-15	
Standard QC Batch:	Standard (CCV-2) QC Batch: 72633			vzed: 2010-08	Anal	yzed By: AW		
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date	
Param DRO	Flag	Units mg/Kg	Conc. 250	Conc. 260	Recovery 104	Limits 80 - 120	Analyzed 2010-08-15	
Standard	(CCV-1)							
QC Batch:	72674		Date Analy	vzed: 2010-08	-12	Anal	yzed By: AG	
			CCVs True	CCVs Found	CCVs Percent	Percent Recoverv	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Benzene		mg/Kg	0.100	0.0944	94	80 - 120	2010-08-12	
Toluene	ne	mg/Kg mg/Kg	0.100	0.0921	92 86	80 - 120 80 - 120	2010-08-12 2010-08-12	
Xylene		mg/Kg	0.300	0.260	87	80 - 120	2010-08-12	

Standard (CCV-2)

QC Batch: 72674

Date Analyzed: 2010-08-12

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Analyzed By: AG

Report Dat 114-640056	e: August 17, 2 1	010	Wo	rk Order: 1008 COG/Bates #	Page Number: 24 of 24 Lea County, NM		
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.0968	97	80 - 120	2010-08-12
Toluene		mg/Kg	0.100	0.0944	94	80 - 120	2010-08-12
Ethylbenzen	ie	mg/Kg	0.100	0.0881	88	80 - 120	2010-08-12
Xylene		mg/Kg	0.300	0.266	89	80 - 120	2010-08-12
Standard ((CCV-1)						
QC Batch:	72675		Date Analy	zed: 2010-08-	-12	Anal	yzed By: AG
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
<u><u>G</u>RO</u>		mg/Kg	1.00	0.835	84	80 - 120	2010-08-12
Standard ((CCV-2)						
QC Batch:	72675		Date Analy	zed: 2010-08-	12	Anal	yzed By: AG
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.828	83	80 - 120	2010-08-12