#### Bratcher, Mike, EMNRD

From:

Bratcher, Mike, EMNRD

Sent:

Wednesday, February 05, 2014 10:17 AM

To:

'Tavarez, Ike'

Cc:

Robert McNeill; Robert Grubbs; Michelle Mullins (MMullins@concho.com)

Subject:

RE: COG Operating - Loving State #2 and Myox 32 Fee 2H - Work Plans Approval

Request

Reference: COG \* Loving St 2 \* 30-015-24429 \* N-1-24s-27e \* Eddy County, New Mexico

OCD Tracking number: 2RP-1920 \* Date of release: 9/14/13

lke,

Your proposal for remediation of the above referenced produced fluid release is approved. Please notify OCD prior to commencement of remedial activities and in the event proposed excavation depths are not achieved.

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

If you have any questions or concerns, and for notification, please contact me.

Mike Bratcher NMOCD District 2 811 S. First Street Artesia, NM 88210 O: 575-748-1283 X108 C: 575-626-0857

F: 575-748-9720

**From:** Tavarez, Ike [mailto:Ike.Tavarez@tetratech.com]

**Sent:** Tuesday, January 28, 2014 2:58 PM

To: Bratcher, Mike, EMNRD

**Cc:** Robert McNeill; Robert Grubbs; Michelle Mullins (MMullins@concho.com)

Subject: COG Operating - Loving State #2 and Myox 32 Fee 2H - Work Plans Approval Request

Mike,

Please find the enclosed COG -Work Plans for the above referenced sites located in Eddy County, New Mexico. The work plans includes the soil assessments and recommendations for remediation for each of the sites. I will mail you a hard copy of the work plans for your files. Once approved, Tetra Tech will schedule the soil remediation and notify you prior to implementing the work plan. Please let me know if you need additional information or call me if you have any questions, thanks

Ike Tavarez, PG | Senior Project Manager



#### SITE INFORMATION **Report Type: Closure Report** General Site Information: Site: Loving State #2 Tank Battery Company: **COG Operating LLC** Section, Township and Range T 24S Sec. 1 R 27E Lease Number: API-30-015-24429 County: **Eddy County** GPS: 32.24223° N 104.14571° W Surface Owner: State Mineral Owner: South of Loving, from the intersection of HWY 285 and CR 716, travel south for 0.4 miles and Directions: turn West onto Bounds Rd. Continue East for 2.0 miles, and turn south onto lease road for 1.5 miles. Then turn East for 0.3 miles to location. Release Data: Date Released: 9/14/2013 Type Release: Produced Water Source of Contamination: Increased production Fluid Released: 80 bbls 70 bbls Fluids Recovered: Official Communication: Name: Robert McNeil lke Tavarez Company: COG Operating, LLC Tetra Tech Address: One Concho Center 4000 N. Big Spring St. 600 W. Illinois Ave. Ste. 401 City: Midland Texas, 79701 Midland, Texas, 79705 Phone number: (432) 686-3023 (432) 687-8110 Fax: (432) 684-7137 Email: rmcneil@conchoresources.com ike.tavarez@tetratech.com

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

Acceptable Soil RRAL (mg/kg) Total BTEX TPH Benzene 10 50 100

JUN 0 4 2014

RECEIVED



May 28, 2014

Mr. Mike Bratcher Environmental Engineer Specialist Oil Conservation Division, District 2 811 S. First Street Artesia, New Mexico 88210

Re: Closure Report for the COG Operating LLC., Loving State #2 Tank Battery, Unit N, Section 01, Township 24 South, Range 27 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill at the Loving State #2 Tank Battery located in Unit N, Section 01, Township 24 South, Range 27 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.24223°, W 104.14571°. The site location is shown on Figures 1 and 2.

#### Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on September 14, 2013, and released approximately eighty (80) barrels of produced water from an increase in production. To alleviate the problem, COG personnel installed a high alarm. Seventy (70) barrels of standing fluids were recovered. The spill was contained within the facility firewalls and measured approximately 40' x 80'. The initial C-141 form is enclosed in Appendix A.

#### Groundwater

No water wells were listed within Section 01. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 33' below surface. The groundwater data is shown in Appendix B.



#### Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 100 mg/kg.

#### Soil Assessment and Analytical Results

On October 23, 2013, 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. Selected soil 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, none of the samples exceeded the RRAL for BTEX. Auger holes (AH-1and AH-3) did show TPH concentrations above the RRAL for TPH at 0-1' but declined below the RRAL at 1'-1.5' below surface. In addition, the area of AH-2 did show a deeper impact to the soils with TPH concentrations declining below the RRAL at 2'-2.5' below surface. None of the samples showed elevated chloride concentrations in the subsurface soils.

#### **Remediation Activities**

On March 6, 2014, Tetra Tech supervised the removal impacted material as highlighted (green) in Table 1 and shown on Figure 4. The areas of auger holes (AH-1 and AH-3) were excavated to depths of approximately 1.0' below surface. The area of auger hole (AH-2) was excavated to a depth of approximately 2.0' below surface. Once the area was excavated to the appropriate depths, the excavations were backfilled with clean soil to grade, and approximately 36 cubic yards of excavated material was hauled to proper disposal.



#### Conclusion

Based on the assessment and work performed at this site, COG requests closure of this spill issue. A final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,

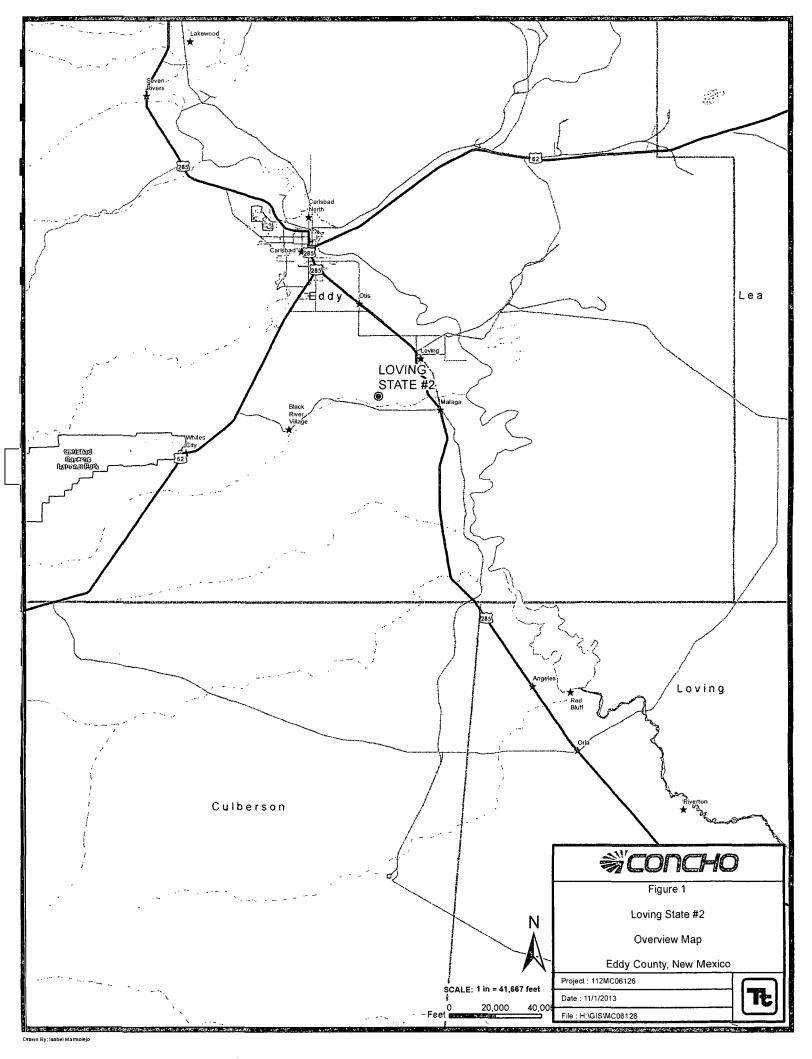
TETRA TECH

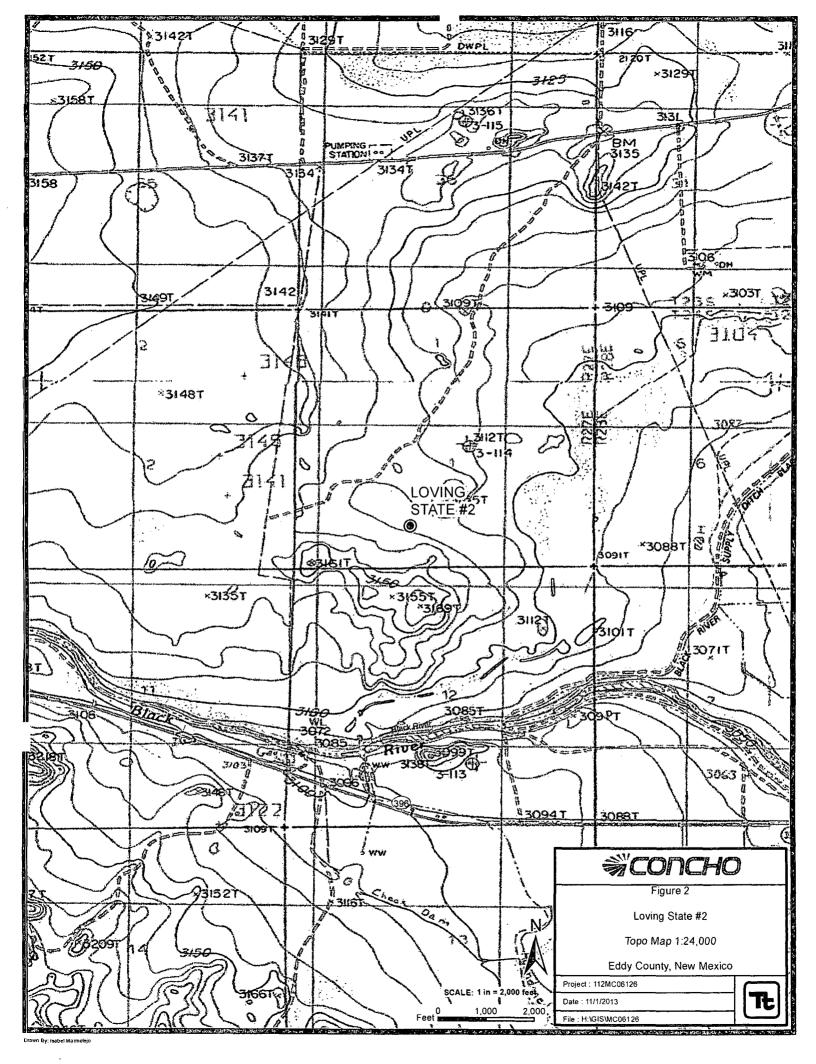
ke Tavarez,

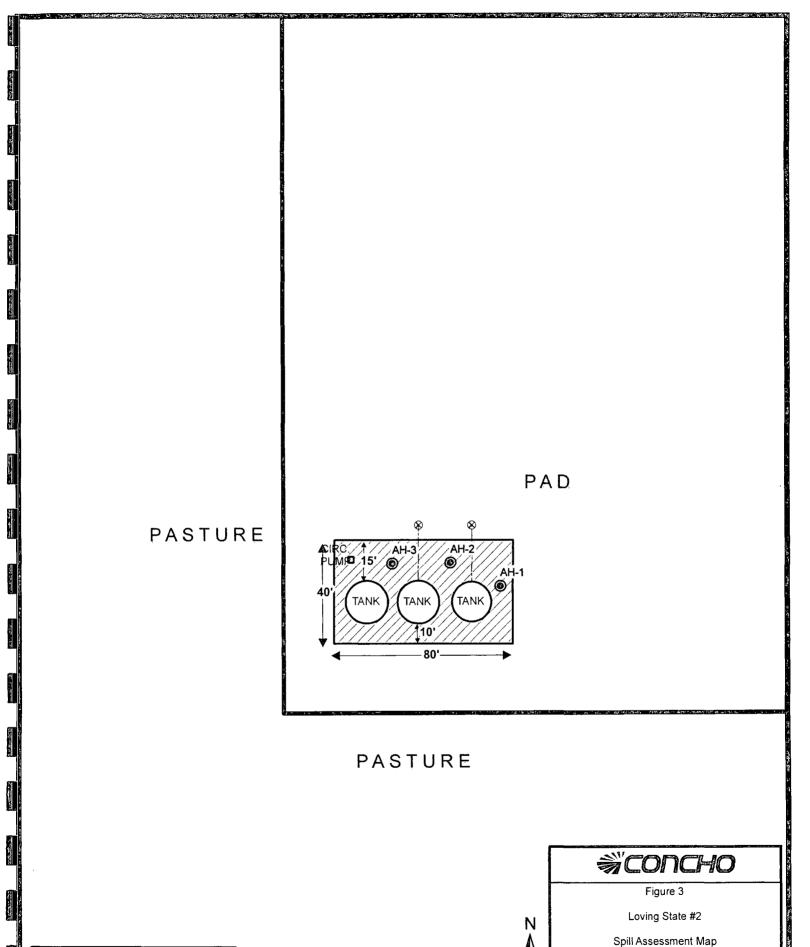
Senior Project Manager

cc: Robert McNeil - COG

# Figures







Eddy County, New Mexico

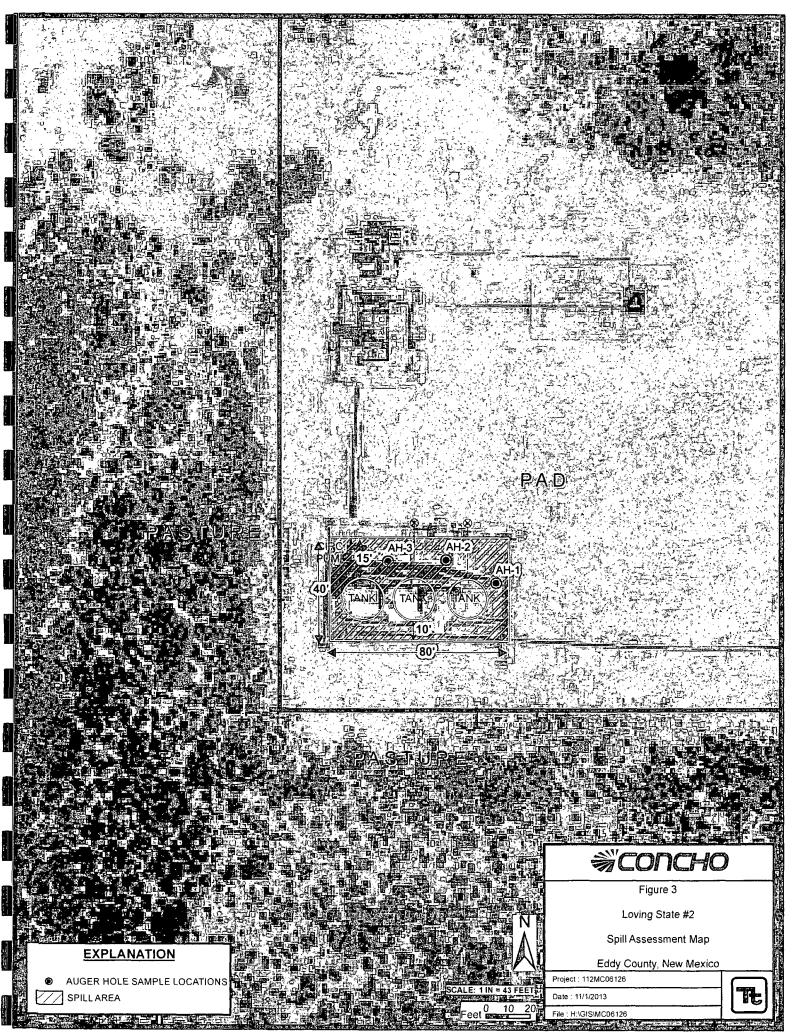
Project: 112MC06126

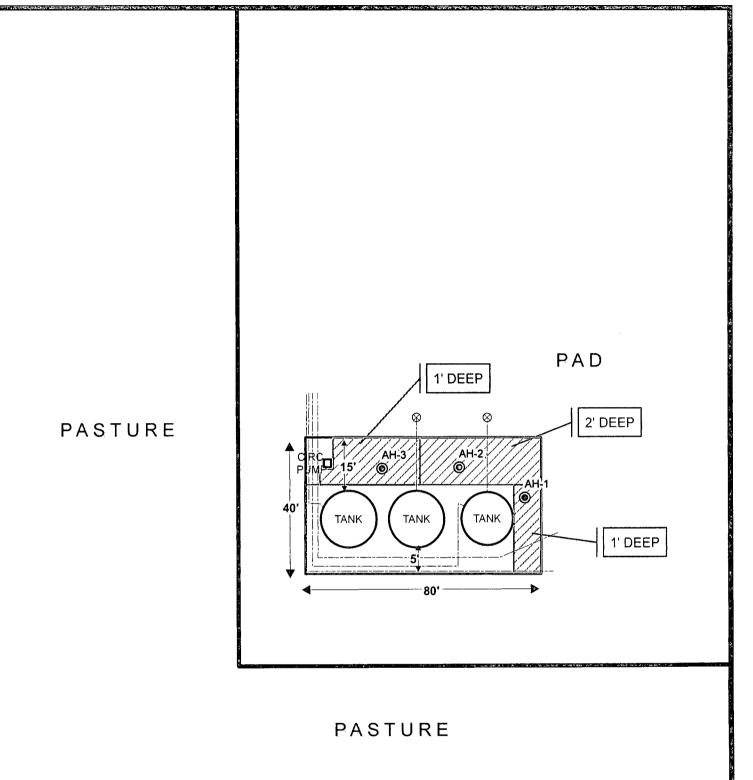
Date: 11/1/2013

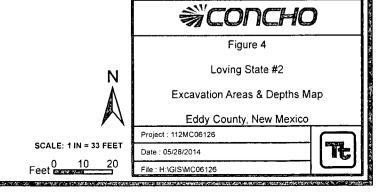
SCALE: 1 IN = 43 FEET

**EXPLANATION** 

AUGER HOLE SAMPLE LOCATIONS







# EXPLANATION AUGER HOLE SAMPLE LOCATIONS

# Tables

#### BEB Excavation Total **Soil Status** TPH (mg/kg) Toluene Ethlybenzene Xylene Benzene Chloride Sample BTEX Sample ID Sample **Bottom** (mg/kg) (mg/kg) (mg/kg) (mg/kg) Date (mg/kg) Depth (ft) (mg/kg) Depth (ft) GRO DRO Total In-Situ Removed Х 242 308 550.0 < 0.0200 0.297 1.340 5.45 7.087 <20.0 AH-1 10/29/2013 0-1 Χ 1-1.5 5.85 <50.0 5.85 <20.0 Х <20.0 2-2.5 -3-3.5 Χ 235 -Χ 10/29/2013 < 0.0200 < 0.0200 < 0.0200 0.0239 0.0239 <20.0 AH-2 0-1 6.60 98.8 <50.0 Χ <20.0 1-1.5 <4.00 2,660 2,660 2-2.5 Х <4.00 <50.0 <50.0 <20.0 Χ 3-3.5 30.0 <0.0200 AH-3 Х 4.74 528 533 < 0.0200 < 0.0200 < 0.0200 < 0.0200 <20.0 10/29/2013 0-1 <20.0 1-1.5 Χ <4.00 <50.0 <50.0 2-2.5 Х <20.0 Х <20.0 3-3.5

( - ) Not Analyzed

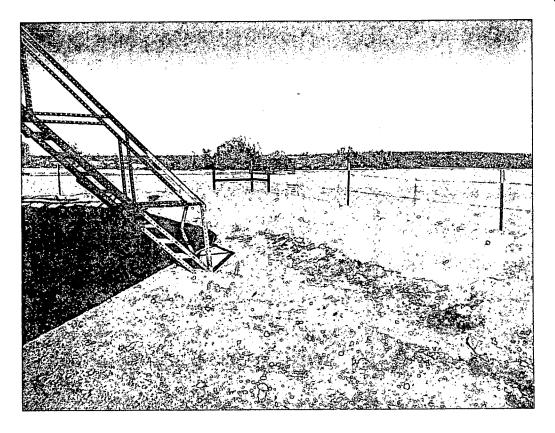
(BEB) Below Excavation Bottom

Excavation Depths

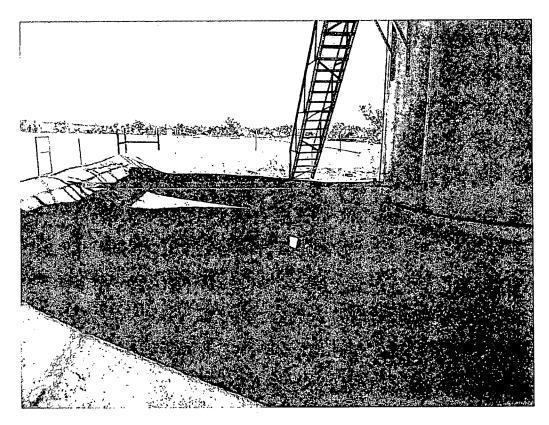
112MC06126

## Photos



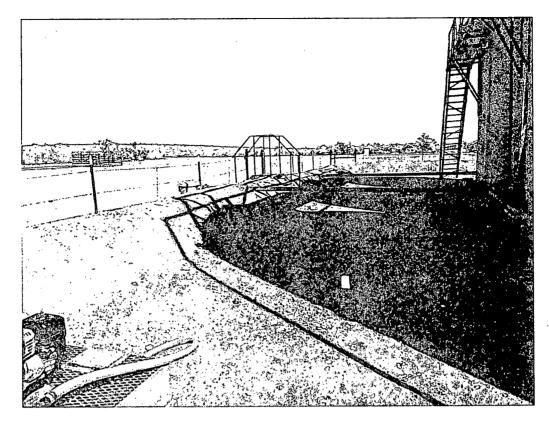


View North - Area of AH-1

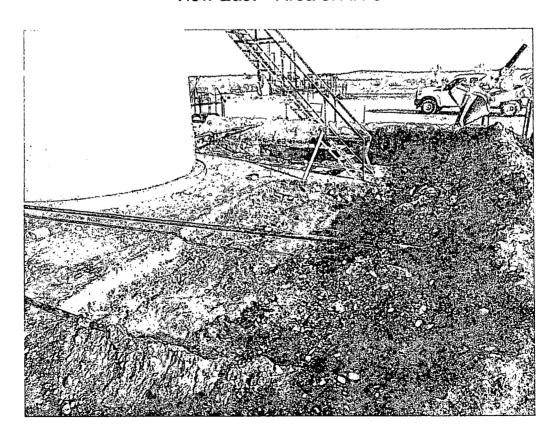


View East - Area of AH-2



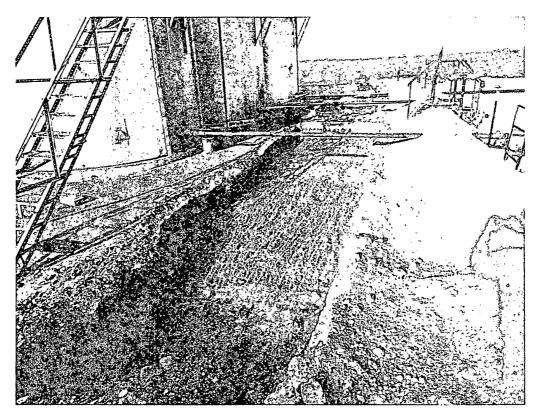


View East - Area of AH-3

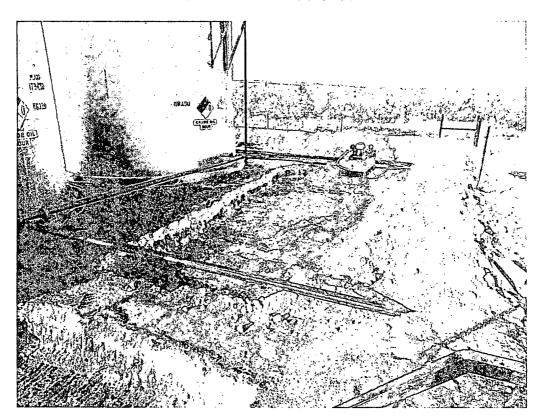


View North - Excavated area of AH-1



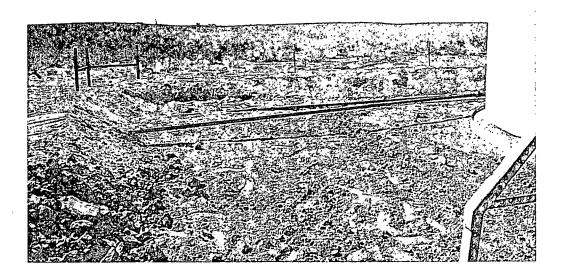


View West – Excavated area of AH-2

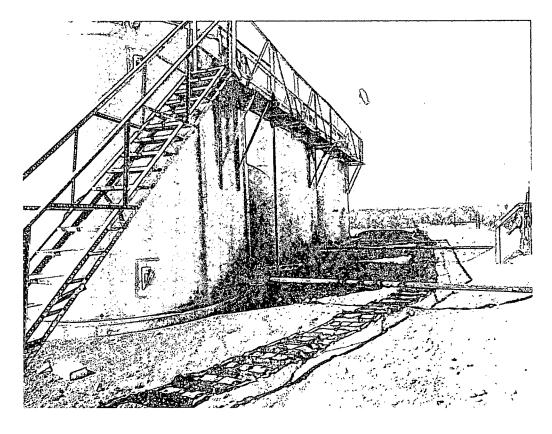


View West – Excavated area of AH-3





View South - Backfilled area of AH-1



View West – Backfilled areas of AH-2 and AH-3

# Appendix A

Gb-50'

District 1
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

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

**OPERATOR** 

Form C-141 Revised October 10, 2003

Final Report

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

#### Release Notification and Corrective Action

Name of Company COG OPERATING LLC	Contact Robert McNeill								
Address 600 West Illinois Avenue, Midland, TX 79701	Telephone No. 432-230-0077								
Facility Name Loving State #002	Facility Type Tank Battery								
Surface Owner State Mineral Owner	Lease No. (API#) 30-015-24429								
LOCATIO	LOCATION OF RELEASE								
Unit Letter Section Township Range Feet from the Nort	N/South Line   Feet from the   Enst/West Line   County   Eddy								
Latitude 32,24223	Longitude 104.14571								
NATURI	E OF RELEASE								
Type of Release Produced water	Volume of Release 80bbls Volume Recovered 70bbls								
Source of Release Water tank	Date and Hour of Occurrence   Date and Hour of Discovery   09-14-2013   10.00am								
Was Immediate Notice Given?  ☑ Yes ☐ No ☐ Not Required	If YES, To Whom?  Mike Bratcher - NMOCD								
By Whom? Robert Grubbs Jr.	Date and Hour 09-16-2013 2:08pm								
Was a Watercourse Reached?   Yes ⊠ No	If YES, Volume Impacting the Watercourse.								
If a Watercourse was Impacted, Describe Fully.									
Describe Cause of Problem and Remedial Action Taken.*									
An increase of production caused the water tank to overflow. Have water	trucks on call and have a high alarm installed.								
Describe Area Affected and Cleanup Action Taken.*									
	crease of production. We were able to recover 70bbls of fluid. The spill was o delineate any possible contamination from the release and we will present a on work.								
regulations all operators are required to report and/or file certain release public health or the environment. The acceptance of a C-141 report by t should their operations have failed to adequately investigate and remedia	the best of my knowledge and understand that pursuant to NMOCD rules and notifications and perform corrective actions for releases which may endanger the NMOCD marked as "Final Report" does not relieve the operator of liability attended that pose a threat to ground water, surface water, human health does not relieve the operator of responsibility for compliance with any other								
	OIL CONSERVATION DIVISION								
Signature:									
Printed Name: Robert Grabbs Jr.	Approved by District Supervisor:								
Title: Senior Environmental Coordinator	Approval Date: Expiration Date:								
E-mail Address: rgrubbs@concho.com	Conditions of Approval:								
Date: 09-17-2013 Phone: 432-661-6601 Attach Additional Sheets If Necessary									

NM OIL CONSERVATION

ARTESIA DISTRICT

JUN 0 4 2014

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Revised October 10, 2003 Submit 2 Copies to appropriate

Form C-141

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

#### **Release Notification and Corrective Action**

						OPERATOR			☐ Initial Report 🛛 Final Re			Final Report
Name of Co							bert McNeil					
			e Midlaı	nd, Texas 79701			No. (432) 230-0					
Facility Nar	ne Loving	State #2				Facility Typ	e Tank Batte	ry				
Surface Ow	ner: State			Mineral O	wner				Lease I	No. (API#)	30-01	5-24429
	- <u>-</u>			LOCA	TIO	N OF REI	EACE					
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	Fact/V	Vest Line	County		
N N	01	24S	27E	rect nom the	Notti	Journ Eme	reet from the	Lasuv	vest Effic	County	Edd	y 
			I	atitude N 32.2	4223	° Longitud	e W 104.1457	′1°				
				NAT	URE	OF RELI	EASE					
Type of Relea							Release 80 bbls			Recovered		
Source of Re	ease: Wate	r Tank				i	lour of Occurrenc	ce		Hour of Dis		
Was Immedia	ta Notica C	livan?				09-14-2013 If YES, To			09-14-20	13 10:00 a	.m.	
was minicula	ne monce C		Yes [	No Not Re	equired	11 153, 10	** HOIII;	Mike I	Bratcher –	NMOCD		
By Whom? R	obert Grub	bs Jr.				Date and F	lour 09-16-2013	2:08 p.	m.		***	
Was a Water		hed?	Yes 🗵	] No			lume Impacting t					
If a Watercou	rse was Im	pacted. Descr	ibe Fully.	¢								
N/A			·							OIL CONS ARTESIA D		
Describe Cau	se of Proble	em and Reme	dial Action	n Taken *						JUN 0 4	2014	
				to overflow. Hav	e water	trucks on cal	and have a high	alarm in	istalled.	RECEI	VED	
Describe Are	a Affected a	and Cleanup A	Action Tak	en.*								
contained in ( away for prop NMOCD for	he tank bat ber disposal review.	tery. Tetra Te . Site was the	ech inspec n brought	was released due ted site and collec up to surface grad	ted san le with	nples to define clean backfill	spills extent. Soi material. Tetra T	il that ex ech prep	ceeded RF ared closu	RAL was rer re report an	noved a d subm	and hauled itted to
regulations al public health should their o	l operators or the envir perations h iment. In a	are required to conment. The ave failed to a ddition, NMC	o report ar acceptance adequately OCD accep	is true and complete is true and complete of a C-141 reposition and restricted and restrance of a C-141 stance of a C-14	elease r ort by th emediat	notifications and the NMOCD mate contamination and the contamination and the contamination are contamination and the contamination and the contamination are contaminated as the contamination and the contamination are contaminated as the contamination are contaminated as the contaminated as the contamination are contaminated as the contamination are contaminated as the contaminated as	nd perform correct arked as "Final R on that pose a thr	ctive acti Report" d reat to gr	ons for rel oes not rel ound wate	eases which ieve the ope r, surface w	may e rator o ater, hu	ndanger f liability man health
Signature:							OIL CON	SERV	ATION	DIVISIO	<u> </u>	
Printed Name	: Ike Tavar	ez //	Sgeir	T In Co	6)	Approved by	District Supervis	sor:				
Title: Project	Manager					Approval Dat	e:	1	Expiration	Date:		
E-mail Addre	E-mail Address: Ike.Tavarez@TetraTech.com					Conditions of	Approval:		Attached			
Attach Addi	tional Shee	ets If Necess	arv			·	-					

# Appendix B

# Water Well Data Average Depth to Groundwater (ft) COG - Loving State #2 Eddy County, New Mexico

	23 Sc	outh	2	6 East				23 S	outh	2	27 East			23 S	outh	2	8 East	
	5	4	3 220	2	1	Carl	6 bad	5 <b>83</b>	4 90	3	2 70	1 17	6 16.5	5	4	3	2	1
	8 267	9	10	11	12	1	7	8	9	10	11	12 40	7 26.5	8	9	10	11	12
						1											30.5	20
18	17	16	15	14	13	1	18	17	16	15	14 75	13	18	17	16	15	14	13
						1							63			14		33
19	20	21	22 22	4 23	24	1	19	20	21	22	23 <b>23</b>	24 90	19	20	21	22	23	24
								<u> </u>						56		39		36
80 <b>99</b>	29	28	27	26	25	1	30	29 103	28	27	26	25	30	29	28	27	26	25
						1	L							28.7				44
31	32 <b>223</b>	33	34	35	36	1	31	32	33	34	35	36	31	32	33	34	35	36
									<u> </u>			-1	L					
	24 Sc	outh		6 East	<u>.                                    </u>	-		24 S			27 East	1 SITE	6 70		outh		8 East	
63	5	4	3	2	1	1	6	5	4	3	2	1 SHE	6 70	5 30	)   4 3	3	2 55	5 1
250	8 <b>450</b>	9	10	11	12	1	7	8 17	9	10	11	12	7	8 50	9	10	11	12
						1	1	26	43			27		1		17	20	73
8	17	16	15	14 30	13	1	18 <b>30</b>	17	16	15	14	13 <b>30</b>	18	17	16	15	14	13
550	ļ	ļ	)	ļ	1	1	34	1	]			31	1	42	29	18	52	34
19	20	21	22	23 38	24 <b>28</b>	1	19	20	21	22	23	24	19	20	21	22	23	24
			1	37	30	1				70				48				
30	29 46	28	27 3	26	25	1	30	29	28	27	26	25	30	29	28	27	26	25
70			<del>  </del>		<del> </del>	4			-	4	ļ	-			ļ	<u> </u>	<del>-</del>	<del> </del>
31	32 111	33	34	35	36	ĺ	31	32	33	34	35	36	31	32	33	34	35	36
	109					J			1				<u> </u>	<u> </u>			J	
	25 Sc	outh	2	6 East				25 S	outh	:	27 East			25 S	outh	2	8 East	
3	5	4	3	2	1	7	6	5	4	3	2	1	6	5	4 ;	<b>5</b> 3 <b>32</b>	2	1
	1	[	45	1	1	1	ĺ			1		1 1	Ï	59		1	1	Sit
7	8	9 4	5 10	11	12	1	7	8	9	10	11	12	7	8	9	. 10	11	12
60						1						92						İ
18	17	16	15	14	13	1	18	17	16	15	14	13	18	17	16	15 48	14	13
						1			<u> </u>				67			49		$\perp$
19	20	21	22	23	24	i	19	20	21	22	23	24	19	20	21	22	23	24
			118		L	_			<u> </u>	<u> </u>	$\perp$			96				
30	29	28	27	26	25		30	29	28	27	26	25	30	29	28	27	26 40	25
		<u> </u>	<del> </del>		<u> </u>	_}		ļ		<u> </u>		<b>↓</b>	<u> </u>	15	90			$\perp$
		33	34	35	36	ı	31	32	33	34	35	36	31	32	33	34	35	36
31	32	133	1-					1	1	i i		1 1		1			1	- 1

New Mexico State Engineers Well Repo	rts
--------------------------------------	-----

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

Field water level

New Mexico Water and Infrastructure Data System

# Appendix C

Report Date: November 5, 2013 Work Order: 13102423 Page Number: 1 of 3

### **Summary Report**

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

Project Location: Eddy Co, NM Project Name: COG/Loving St #2

Project Number: TBD

Report Date: November 5, 2013

Work Order: 13102423

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
344640	AH-1 0-1'	soil	2013-10-23	00:00	2013-10-24
344641	AH-1 1-1.5'	soil	2013-10-23	00:00	2013-10-24
344642	AH-1 2-2.5'	soil	2013-10-23	00:00	2013-10-24
344643	AH-1 3-3.5'	soil	2013-10-23	00:00	2013-10-24
344644	AH-2 0-1'	soil	2013-10-23	00:00	2013-10-24
344645	AH-2 1-1.5'	soil	2013-10-23	00:00	2013-10-24
344646	AH-2 2-2.5'	soil	2013-10-23	00:00	2013-10-24
344647	AH-2 3-3.5'	soil	2013-10-23	00:00	2013-10-24
344648	AH-3 0-1'	soil	2013-10-23	00:00	2013-10-24
344649	AH-3 1-1.5'	soil	2013-10-23	00:00	2013-10-24
344650	AH-3 2-2.5'	soil	2013-10-23	00:00	2013-10-24
344651	AH-3 3-3.5'	soil	2013-10-23	00:00	2013-10-24

		]	ВТЕХ		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)
344640 - AH-1 0-1'	< 0.0200	0.297	1.34	5.45	308	242 Qr.Qs
344641 - AH-1 1-1.5'					< 50.0	$5.85~_{\mathrm{Qs}}$
344644 - AH-2 0-1'	< 0.0200	< 0.0200	< 0.0200	0.0239	98.8	6.60
344645 - AH-2 1-1.5'					2660	$< 4.00 \; \mathrm{Qs}$
344646 - AH-2 2-2.5'					< 50.0	$< 4.00   \mathrm{Qs}$
344648 - AH-3 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	528	$4.74~\mathrm{Qr.Qs}$
344649 - AH-3 1-1.5'					< 50.0	$< 4.00 \ _{ m Qs}$

Sample: 344640 - AH-1 0-1'

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

Report Date: November 5, 2013		Work Order: 13102423	Page	Number: 2 of 3
Sample: 344641 - AH-1 1-	1.5'			
Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4
Sample: 344642 - AH-1 2-	2.5'			
Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4
Sample: 344643 - AH-1 3-	3.5'			
Param	Flag	Result	Units	RL
Chloride		235	mg/Kg	4
Sample: 344644 - AH-2 0-	1'			
Param	Flag	Result	Units	R.L
Chloride		<20.0	mg/Kg	4
Sample: 344645 - AH-2 1-	1.5'			
Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4
Sample: 344646 - AH-2 2-	2.5'			
Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4
Sample: 344647 - AH-2 3-	3.5'			
Param	Flag	Result	Units	RL
Chloride		30.0	mg/Kg	4
Sample: 344648 - AH-3 0-	1'			
Param	Flag	Result	Units	RL
Chloride	<u> </u>	<20.0	mg/Kg	4

Report Date: November 5, 2013		Work Order: 13102423	Pag	e Number: 3 of 3				
Sample: 344649 - AH-3 1-1.5'								
Param	Flag	Result	Units	RL				
Chloride		<20.0	mg/Kg	4				
Sample: 344650								
<u>Param</u>	Flag	Result	Units	RL				
Chloride		<20.0	mg/Kg	4				
Sample: 344651	- AH-3 3-3.5'							
Param	Flag	Result	Units	RL				
Chloride		<20.0	mg/Kg	4				

TO 1 1 1 TO 0001 AT 1 A 0 1/10 TO 11 1 TO 0001 FOR 1000



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006

Lubbock. El Paso, Midland

Texas 79424 Texas 79922 Texas 79703 800-378-1296 806 - 794 - 1296 915-585-3443 432-689-6301

FAX 915 - 585 - 4944 FAX 432-689-6313

972-242-7750

E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

#### Certifications

**WBENC**: 237019

HUB:

1752439743100-86536

**DBE:** VN 20657

NCTRCA WFWB38444Y0909

#### **NELAP Certifications**

Lubbock: T104704219-08-TX

LELAP-02003

Kansas E-10317

El Paso: T104704221-08-TX

LELAP-02002

Midland: T104704392-08-TX

### Analytical and Quality Control Report

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

Report Date: November 5, 2013

Work Order: 13102423

Project Location: Eddy Co, NM

Project Name:

COG/Loving St #2

Project Number: **TBD** 

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
344640	AH-1 0-1'	soil	2013-10-23	00:00	2013-10-24
344641	AH-1 1-1.5'	soil	2013-10-23	00:00	2013-10-24
344642	AH-1 2-2.5'	soil	2013-10-23	00:00	2013-10-24
344643	AH-1 3-3.5'	soil	2013-10-23	00:00	2013-10-24
344644	AH-2 0-1'	soil	2013-10-23	00:00	2013-10-24
344645	AH-2 1-1.5'	soil	2013-10-23	00:00	2013-10-24
344646	AH-2 2-2.5'	soil	2013-10-23	00:00	2013-10-24
344647	AH-2 3-3.5'	soil	2013-10-23	00:00	2013-10-24
344648	AH-3 0-1'	soil	2013-10-23	00:00	2013-10-24
344649	AH-3 1-1.5	soil	2013-10-23	00:00	2013-10-24
344650	AH-3 2-2.5'	soil	2013-10-23	00:00	2013-10-24

			$\operatorname{Date}$	$\operatorname{Time}$	Date
Sample	Description	Matrix	Taken	Taken	Received
344651	AH-3 3-3.5'	soil	2013-10-23	00:00	2013-10-24

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

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.

#### Case Narrative

Samples for project COG/Loving St #2 were received by TraceAnalysis, Inc. on 2013-10-24 and assigned to work order 13102423. Samples for work order 13102423 were received intact at a temperature of 4.4 C.

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

		Prep	Prep	QC	Analysis .
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	89979	2013-10-25 at 09:16	106254	2013-10-26 at 10:48
BTEX	S 8021B	89999	2013-10-25 at 12:37	106332	2013-10-26 at 17:00
Chloride (Titration)	SM 4500-Cl B	90061	2013-10-29 at 13:46	106359	2013-10-30 at 14:19
Chloride (Titration)	SM 4500-Cl B	90061	2013-10-29 at 13:46	106364	2013-10-30 at 15:16
TPH DRO - NEW	S 8015 D	90025	2013-10-25 at 16:00	106285	2013-10-28 at 14:04
TPH DRO - NEW	S 8015 D	90062	2013-10-28 at 16:00	106322	2013-10-29 at 14:04
TPH DRO - NEW	S 8015 D	90106	2013-10-30 at 14:00	106384	2013-10-31 at 09:42
TPH GRO	S 8015 D	89979	2013-10-25 at 09:16	106255	2013-10-26 at 10:53
TPH GRO	S 8015 D	89999	2013-10-25 at 12:37	106333	2013-10-26 at 17:00
TPH GRO	S 8015 D	90076	2013-10-30 at 10:26	106377	2013-10-31 at 08:14

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 13102423 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: November 5, 2013 **TBD** 

Work Order: 13102423 COG/Loving St #2

### **Analytical Report**

Sample: 344640 - AH-1 0-1'

Laboratory: Midland

Analysis: **BTEX** QC Batch: 106254 Prep Batch: 89979

Analytical Method: S 8021B Date Analyzed: 2013-10-26 Sample Preparation: 2013-10-25

Prep Method: S 5035 Analyzed By: AK Prepared By: AK

Page Number: 4 of 31

Eddy Co, NM

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0200	mg/Kg	1	0.0200
Toluene		0.297	$\mathrm{mg}/\mathrm{Kg}$	1	0.0200
Ethylbenzene		1.34	${ m mg/Kg}$	1	0.0200
Xylene		5.45	m mg/Kg	1	0.0200

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	70 - 130
4-Bromofluorobenzene (4-BFB)		5.65	${ m mg/Kg}$	1	2.00	282	70 - 130

Sample: 344640 - AH-1 0-1'

Laboratory:

Midland

Chloride (Titration) Analysis: QC Batch: 106359 Prep Batch: 90061

Analytical Method: SM 4500-Cl B Date Analyzed: 2013-10-30 Sample Preparation: 2013-10-31

Prep Method: N/A Analyzed By: AR. Prepared By: AR.

Parameter Flag

RLResult Units Dilution RL< 20.0 4.00 mg/Kg 5

Sample: 344640 - AH-1 0-1'

Laboratory:

Chloride

Midland

Analysis: TPH DRO - NEW QC Batch: 106285 Prep Batch: 90025

Analytical Method: S 8015 D Date Analyzed: 2013-10-28 Sample Preparation: 2013-10-25

Prep Method: N/A KC Analyzed By: Prepared By: KC

RL

Parameter Flag Result Units Dilution RLDR.O 308 50.0 mg/Kg

Report Date: November 5, 2013

Parameter

DRO

Flag

Result

< 50.0

Units

mg/Kg

RL

50.0

Dilution

Work Order: 13102423

Page Number: 5 of 31 Eddy Co, NM COG/Loving St #2

TBD			COG/Loving St #2				Eddy Co, NM		
Surrogate	Flag	Result	Units	Dilu	tion	Spike Amount	Percent Recovery		covery imits
n-Tricosane		124	mg/Kg	1		100	124	70	- 130
Sample: 34	.4640 - AH-1 0	-1'							
Laboratory:	Midland								
Analysis:	TPH GRO		Analytical	Method:	S 8015 D		Prep Meth	nod: S	\$ 5035
QC Batch:	106333		Date Anal	yzed:	2013-10-26		Analyzed	By: A	AK
Prep Batch:	89999		Sample Pr	eparation:	2013-10-25		Prepared 1	By: A	AK
			RL						
Parameter	Fl	ag	Result		Units		Dilution		RL
GRO			242		mg/Kg		5		4.00
Cumanaka		$\operatorname{Flag}$	Result	Units	Dilutior	Spike Amount	Percent		covery imits
Surrogate Trifluorotolu	one (TET)	riag	2.31	mg/Kg	5	2.00	Recovery 116		- 130
	robenzene (4-BF)	D/	9.89	mg/Kg mg/Kg	5	2.00	494		- 130
Sample: 34	.4641 - <b>AH</b> -1 1	-1.5'							
Laboratory: Analysis:	Midland Chloride (Titra	ation)		tical Metho		00-Cl B	Prep Me		N/A
QC Batch:	106359			Analyzed:	2013-1		Analyze		AR.
Prep Batch:	90061		Sampl	e Preparati	on: 2013-1	U-31	Prepare	a By:	AR
			R.L						
Parameter	Fla	ag	Result		Units		Dilution		RL
Chloride		· 10	<20.0		mg/Kg		5		4.00
Sample: 34 Laboratory: Analysis: QC Batch: Prep Batch:	<b>4641 - AH-1 1</b> Midland  TPH DRO - N 106322 90062		Date	rtical Metho Analyzed: le Preparat	2013-	10-29	Prep Me Analyze Preparec	d By:	N/A KC KC
			RL						
<b>D</b>	****		** '			_			

Report Date: November 5, 2013

Parameter

 $\overline{\text{Chloride}}$ 

Flag

Result

235

Units

mg/Kg

Dilution

5

R.L

4.00

Work Order: 13102423 TBD COG/Loving St #2

					Spike	<u></u>	Percent	Roo	overy
Surrogate	Flag	Result	Units	Dilution	-		Recovery		nits
n-Tricosane	1 146	89.9	mg/Kg	1	100		90		192.6
					·		· · · · · · · · · · · · · · · · · · ·	<del></del>	
Sample: 34	4641 - AH-1	1-1.5'							
Laboratory:	Midland								_
Analysis:	TPH GRO		Analytical		8015 D		Prep Met		S 5035
QC Batch:	106377 90076		Date Anal Sample Pr		013-10-31 013-10-30		Analyzed Prepared	-	AK AK
Prep Batch:	90076		Sample Pr	eparation: 2	013-10-30		Frepared	Бу: .	AK
			RL						
Parameter	F	lag	Result		Units		Dilution		RL
GRO			5.85		mg/Kg		1		4.00
						Spike	Percent	Re	covery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	L	imits
Trifluorotolu	, ,		2.46	mg/Kg	1	2.00	123		- 130
4-Bromofluor	robenzene (4-BF	FB)	2.24	mg/Kg	11	2.00	112	70	- 130
Sample: 34 Laboratory: Analysis: QC Batch: Prep Batch:	<b>A642 - AH-1</b> : Midland Chloride (Titr 106359 90061		Date A	sical Method: Analyzed: e Preparation	SM 4500-Cl 2013-10-30 : 2013-10-31	В	Prep M Analyze Prepare	ed By:	N/A AR AR
			RL						
Parameter	F	lag	Result		Units	······································	Dilution		RL
Chloride			<20.0		mg/Kg		5		4.00
Sample: 34	4643 - AH-1 3	3-3.5'							
Laboratory:	Midland								
Analysis:	Chloride (Titr	ration)	Analyt	ical Method:	SM 4500-Cl	В	Prep M		N/A
QC Batch:	106359			Analyzed:	2013-10-30		$\overline{ ext{Analyze}}$		AR
Prep Batch:	90061		Sample	e Preparation:	2013-10-31		Prepare	ed By:	AR
			RL						
n .	-	•	5 1		**				r

Page Number: 6 of 31 Eddy Co, NM

Report Date: November 5, 2013 Work Order: 13102423 Page Number: 7 of 31 TBD COG/Loving St #2 Eddy Co, NM

#### Sample: 344644 - AH-2 0-1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 106254
Prep Batch: 89979

Analytical Method: S 8021B Date Analyzed: 2013-10-26 Sample Preparation: 2013-10-25 Prep Method: S 5035 Analyzed By: AK Prepared By: AK

		R.L			
Parameter	Flag	Result	Units	Dilution	R.L
Benzene		< 0.0200	mg/Kg	1	0.0200
Toluene		< 0.0200	${ m mg/Kg}$	1	0.0200
Ethylbenzene		< 0.0200	m mg/Kg	1	0.0200
Xylene		0.0239	mg/Kg	1	0.0200

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.09	mg/Kg	1	2.00	104	70 - 130
4-Bromofluorobenzene (4-BFB)		2.08	${ m mg/Kg}$	1	2.00	104	70 - 130

#### Sample: 344644 - AH-2 0-1'

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 106359 Prep Batch: 90061 Analytical Method: SM 4500-Cl B
Date Analyzed: 2013-10-30
Sample Preparation: 2013-10-31

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

		RL			
Parameter	Flag	Result	Units	Dilution	R.L
Chloride		<20.0	m mg/Kg	5	4.00

#### Sample: 344644 - AH-2 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW QC Batch: 106285 Prep Batch: 90025 Analytical Method: S 8015 D
Date Analyzed: 2013-10-28
Sample Preparation: 2013-10-25

Prep Method: N/A
Analyzed By: KC
Prepared By: KC

		RL			
Parameter	Flag	Result	$\mathbf{U}_{\mathbf{nits}}$	Dilution	RL
DRO		98.8	mg/Kg	1	50.0

					$\operatorname{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
n-Tricosane		116	mg/Kg	1	100	116	70 - 130

Report Date: November 5, 2013 Work Order: 13102423 Page Number: 8 of 31 TBD COG/Loving St #2 Eddy Co, NM

#### Sample: 344644 - AH-2 0-1'

Laboratory: Midland

Analysis: TPH GRO QC Batch: 106255 Prep Batch: 89979

Analytical Method: S 8015 D Date Analyzed: 2013-10-26 Sample Preparation: 2013-10-25 Prep Method: S 5035 Analyzed By: AK Prepared By: AK

RL Plag Result

ParameterFlagResultUnitsDilutionRLGRO6.60mg/Kg14.00

					$\operatorname{Spike}$	$\operatorname{Percent}$	Recovery
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		2.38	mg/Kg	1	2.00	119	70 - 130
4-Bromofluorobenzene (4-BFB)		3.24	${ m mg/Kg}$	1	2.00	162	70 - 130

#### Sample: 344645 - AH-2 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 106359 Prep Batch: 90061 Analytical Method: SM 4500-Cl B
Date Analyzed: 2013-10-30
Sample Preparation: 2013-10-31

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

#### Sample: 344645 - AH-2 1-1.5'

Laboratory: Midland

Analysis: TPH DRO - NEW QC Batch: 106322 Prep Batch: 90062 Analytical Method: S 8015 D
Date Analyzed: 2013-10-29
Sample Preparation: 2013-10-28

Prep Method: N/A Analyzed By: KC Prepared By: KC

 RL

 Parameter
 Flag
 Result
 Units
 Dilution
 RL

 DRO
 2660
 mg/Kg
 1
 50.0

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	$\mathbf{A}\mathbf{mount}$	Recovery	Limits
n-Tricosane		306	${ m mg/Kg}$	1	100	306	76.3 - 192.6

Report Date: November 5, 2013 Work Order: 13102423 Page Number: 9 of 31 TBD COG/Loving St #2 Eddy Co, NM

Sample: 344645 - AH-2 1-1.5'

Laboratory: Midland

Analysis: TPH GRO QC Batch: 106377 Prep Batch: 90076 Analytical Method: S 8015 D
Date Analyzed: 2013-10-31
Sample Preparation: 2013-10-30

Prep Method: S 5035 Analyzed By: AK
Prepared By: AK

					$\operatorname{Spike}$	$\operatorname{Percent}$	Recovery
Surrogate	Flag	Result	Units	Dilution	${ m Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		2.28	$_{ m mg/Kg}$	1	2.00	114	70 - 130
4-Bromofluorobenzene (4-BFB)		2.31	${ m mg/Kg}$	1	2.00	116	70 - 130

Sample: 344646 - AH-2 2-2.5'

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 106359 Prep Batch: 90061 Analytical Method: SM 4500-Cl B Date Analyzed: 2013-10-30 Sample Preparation: 2013-10-31

Prep Method: N/A Analyzed By: AR Prepared By: AR

N/A

KC

KC

Sample: 344646 - AH-2 2-2.5'

Laboratory: Midland

Prep Batch:

Analysis: TPH DRO - NEW QC Batch: 106384

106384 Date Analyzed: 90106 Sample Prepara

Analytical Method: S 8015 D Prep Method: Date Analyzed: 2013-10-31 Analyzed By: Sample Preparation: 2013-10-30 Prepared By:

					Spike	Percent	Recovery
Surrogate	$\operatorname{Flag}$	Result	Units	Dilution	$\mathbf{A}\mathbf{mount}$	Recovery	Limits
n-Tricosane		95.8	mg/Kg	1	100	96	70 - 130



TBD

Work Order: 13102423 COG/Loving St #2

Page Number: 10 of 31

Eddy Co, NM

Sample: 344646 - AH-2 2-2.5'

Laboratory:

Midland

Analysis: TPH GRO QC Batch: 106377 Prep Batch: 90076

Analytical Method: Date Analyzed:

Sample Preparation:

S 8015 D 2013-10-31

2013-10-30

Prep Method: S 5035

Analyzed By: AK Prepared By: AK

RL

Parameter Flag Result Units Dilution RL4.00 < 4.00 mg/Kg GRO

					$\operatorname{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		2.50	mg/Kg	1	2.00	125	70 - 130
4-Bromofluorobenzene (4-BFB)		2.50	${ m mg/Kg}$	1	2.00	125	70 - 130

Sample: 344647 - AH-2 3-3.5'

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 106359

Analytical Method:

SM 4500-Cl B 2013-10-30

Prep Method: N/A Analyzed By: AR.

Prep Batch: 90061

Date Analyzed: Sample Preparation:

2013-10-31

Prepared By: AR.

Parameter	Flag	Result	Units	Dilution	RL
Chloride		30.0	${ m mg/Kg}$	5	4.00

Sample: 344648 - AH-3 0-1'

Laboratory:

Midland

BTEX Analysis: QC Batch: 106332 Prep Batch: 89999

Analytical Method: Date Analyzed:

Sample Preparation:

RL

S 8021B 2013-10-26 2013-10-25 Prep Method: S 5035 AKAnalyzed By: Prepared By: AK

RL

Parameter	$\operatorname{Flag}$	Result	Units	Dilution	RL
Benzene		< 0.0200	mg/Kg	1	0.0200
Toluene		< 0.0200	m mg/Kg	1	0.0200
Ethylbenzene		< 0.0200	mg/Kg	1	0.0200
Xylene		< 0.0200	m mg/Kg	1	0.0200

					$\operatorname{Spike}$	$\operatorname{Percent}$	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.86	mg/Kg	1	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)		2.19	${ m mg/Kg}$	1	2.00	110	70 - 130

TBD

Work Order: 13102423 COG/Loving St #2

Page Number: 11 of 31 Eddy Co, NM

Sample: 344648 - AH-3 0-1'

Laboratory:

Midland

Analysis: Chloride (Titration)

QC Batch: 106359 Prep Batch: 90061

Analytical Method:

Date Analyzed: 2013-10-30 Sample Preparation: 2013-10-31

SM 4500-Cl B

Prep Method: N/A Analyzed By: AR Prepared By: AR.

RLParameter Result Units Dilution RLFlag Chloride <20.0 mg/Kg 5 4.00

Sample: 344648 - AH-3 0-1'

Laboratory:

Midland

Analysis: TPH DRO - NEW OC Batch: 106322 Prep Batch: 90062

Analytical Method: Date Analyzed:

S 8015 D 2013-10-29 Sample Preparation: 2013-10-28 Prep Method: N/A Analyzed By:

KC Prepared By: KC

RL

Units Dilution RLParameter Flag Result 50.0 DRO 528 mg/Kg

					$\operatorname{Spike}$	Percent	Recovery
Surrogate	$\operatorname{Flag}$	Result	Units	Dilution	$\mathbf{A}\mathbf{mount}$	Recovery	Limits
n-Tricosane		168	mg/Kg	1	100	168	76.3 - 192.6

Sample: 344648 - AH-3 0-1'

Laboratory:

Midland

Analysis: TPH GRO QC Batch: 106333 Prep Batch: 89999

Analytical Method: Date Analyzed:

S 8015 D 2013-10-26 Sample Preparation: 2013-10-25

Prep Method: S 5035 Analyzed By: AK

Prepared By: ΑK

RLParameter RLFlag Result Units Dilution GRO 4.74mg/Kg 4.00

					$\operatorname{Spike}$	$\operatorname{Percent}$	Recovery
Surrogate	$\operatorname{Flag}$	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		2.03	mg/Kg	1	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)		1.68	${ m mg/Kg}$	1	2.00	84	70 - 130

TBD

Work Order: 13102423

Page Number: 12 of 31

COG/Loving St #2 Eddy Co, NM

Sample: 344649 - AH-3 1-1.5'

Laboratory: Midland

Chloride (Titration) Analysis:

QC Batch: 106359 Prep Batch: 90061

Analytical Method: SM 4500-Cl B Date Analyzed:

2013-10-30 Sample Preparation: 2013-10-31

Prep Method: N/A Analyzed By: ARPrepared By: AR

RL

Units Dilution RLParameter Result Flag Chloride < 20.0 mg/Kg 4.00

Sample: 344649 - AH-3 1-1.5'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 106384 Prep Batch: 90106

Analytical Method: Date Analyzed:

S 8015 D 2013-10-31 Prep Method: N/A Analyzed By: KC

Sample Preparation: 2013-10-30 Prepared By: KC

RL

Parameter Flag Result Units Dilution RLDRO < 50.0 mg/Kg 50.0 1

					Spike	Percent	Recovery
Surrogate	$\operatorname{Flag}$	Result	Units	Dilution	$\mathbf{A}\mathbf{m}\mathbf{o}\mathbf{u}\mathbf{n}\mathbf{t}$	Recovery	Limits
n-Tricosane		93.0	${ m mg/Kg}$	1	100	93	70 - 130

Sample: 344649 - AH-3 1-1.5'

Laboratory: Midland

Analysis: TPH GRO QC Batch: 106377 Prep Batch: 90076

Analytical Method: Date Analyzed:

S 8015 D 2013-10-31 Sample Preparation: 2013-10-30 Prep Method: S 5035 Analyzed By: AK

ΑK

Prepared By:

RLParameter Flag Result Units Dilution RLGRO < 4.00 mg/Kg 4.001

					$\operatorname{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.27	mg/Kg	1	2.00	114	70 - 130
4-Bromofluorobenzene (4-BFB)		2.33	mg/Kg	1	2.00	116	70 - 130

TBD

Work Order: 13102423

Page Number: 13 of 31 COG/Loving St #2 Eddy Co, NM

Sample: 344650 - AH-3 2-2.5'

Laboratory: Analysis:

Midland

Chloride (Titration)

OC Batch: Prep Batch:

106364 90061

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B

2013-10-30

2013-10-31

Prep Method: N/A Analyzed By: AR. Prepared By: AR.

Parameter Flag Chloride

Units mg/Kg Dilution

5

RL

4.00

Sample: 344651 - AH-3 3-3.5'

Laboratory:

Midland

Analysis: QC Batch: 106364

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B 2013-10-30

Prep Method: N/A Analyzed By:

Prep Batch:

90061

Sample Preparation:

2013-10-31

AR. Prepared By: AR.

RL

RL

Result

<20.0

Parameter Units Dilution RLFlag Result Chloride mg/Kg 5 4.00 < 20.0

Method Blank (1)

QC Batch: 106254

QC Batch: 106254 Prep Batch: 89979

Date Analyzed: 2013-10-26 QC Preparation: 2013-10-25

Analyzed By: AK Prepared By: AK

MDL

Parameter Flag Result Units RLBenzene < 0.00810 mg/Kg 0.02 Toluene < 0.00750 0.02mg/Kg Ethylbenzene 0.02 < 0.00730 mg/Kg Xylene 0.02< 0.00700 mg/Kg

					$\operatorname{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		2.26	mg/Kg	1	2.00	113	70 - 130
4-Bromofluorobenzene (4-BFB)		2.11	${ m mg/Kg}$	1	2.00	106	70 - 130

Method Blank (1)

QC Batch: 106255

QC Batch: 106255 Prep Batch: 89979

Date Analyzed: 2013-10-26 QC Preparation: 2013-10-25

Analyzed By: AKPrepared By: AK Report Date: November 5, 2013 TBD

Method Blank (1)

QC Batch: 106332

Work Order: 13102423 COG/Loving St #2 Page Number: 14 of 31 Eddy Co, NM

				MDL					
Parameter		Flag		Result		Units	S		RL
GRO				< 2.32		mg/K	g		4
Surrogate		Flag	Result	Units	Dilution	Spike Amount	Percent Recovery		overy mits
Trifluorotolue	` ,		2.39	mg/Kg	1	2.00	120		- 130
4-Bromofluoro	benzene (4	-BFB)	2.52	mg/Kg	11	2.00	126	70	- 130
•	nk (1) 106285 90025	QC Batch: 106285	Date Ana QC Prepa		13-10-28 13-10-25			ed By:	KC KC
Parameter DRO		Flag		MDL Result 7.98		Units mg/K			R.L 50
<u> </u>				- 1.50	***	1118/11	8	•	
Surrogate	Flag	Result	Units	Dilutio	Spi n Amo		Percent .ecovery	Reco Lim	
n-Tricosane		106	mg/Kg	1	10	0	106	88.3 -	126.1
•	nk (1) 106322 90062	QC Batch: 106322	Date Ana QC Prepa	•	13-10-29 13-10-28			zed By: red By:	KC KC
Parameter		Flag		MDL Result		Units			RL
DRO				15.0		mg/K	g		50
Surrogate	Flag	Result	Units	Dilutio	Spi n Amo		Percent ecovery	Reco Lin	nits
n-Tricosane		103	mg/Kg	1	10	^	103	64.1 -	

QC Batch: Prep Batch:		Date Analyzed: QC Preparation:	2013-10-26 2013-10-25		Analyzed By: Prepared By:	
		ì	MDL			
Parameter	Flag	R	esult	Units		RL
Benzene	 	< 0.0	00810	mg/Kg		0.02
						_,

 $continued \dots$ 

Report Date: November TBD	5, 2013		rk Order: DG/Lovin			Page Num I	nber: 15 Eddy Co	
method blank continued	• • •							
Parameter	$\operatorname{Flag}$		MDI Resul		Units			RL
Toluene	Flag		<0.0075		mg/Kg		-1140-414	$\frac{\text{RL}}{0.02}$
Ethylbenzene			< 0.0073		mg/Kg			0.02
Xylene	<u> </u>		< 0.0070		mg/Kg			0.02
	T.I.	D 1	TT	12.1	Spike	Percent		overy
Surrogate Trifluorotoluene (TFT)	Flag	Result 2.08	Units mg/Kg	Dilution	Amount 2.00	Recovery 104		mits - 130
4-Bromofluorobenzene (4	4-BFB)		mg/Kg	1 1	2.00	98		- 130
Method Blank (1)  QC Batch: 106333  Prep Batch: 89999	QC Batch: 106333	Date Analy QC Prepara		13-10-26 13-10-25		Analyze Prepare		AK AK
			MDL					
Parameter	$\operatorname{Flag}$		Result		Units			RL
GRO			< 2.32		mg/Kg			4
~					Spike	Percent		overy
Surrogate (TET)	Flag	Result	Units	Dilution	Amount	Recovery		mits
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4	4-BFB)		mg/Kg mg/Kg	1 1	2.00 2.00	118 119		- 130 - 130
Method Blank (1)  QC Batch: 106359  Prep Batch: 90061	QC Batch: 106359	Date Analy QC Prepara		13-10-30 13-10-29		Analyz Prepare		
			MDL					
Parameter	Flag		Result		Units			RL
Chloride			< 3.85		mg/Kg			4
Method Blank (1)	QC Batch: 106364							
QC Batch: 106364 Prep Batch: 90061		Date Analy QC Prepara		13-10-30 13-10-29		Analyz Prepare		AR AR
Parameter	Flag		MDL Result		Units			RL
Chloride			< 3.85		mg/Kg			4

TBD

Work Order: 13102423 COG/Loving St #2 Page Number: 16 of 31

Eddy Co, NM

Method Blank (1)

QC Batch: 106377

QC Batch: 106377 Prep Batch: 90076 Date Analyzed: 2013-10-31 QC Preparation: 2013-10-30

Analyzed By: AK Prepared By: AK

MDL

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.38	mg/Kg	1	2.00	119	70 - 130
4-Bromofluorobenzene (4-BFB)		2.26	mg/Kg	1	2.00	113	70 - 130

Method Blank (1)

QC Batch: 106384

QC Batch: 106384 Prep Batch: 90106 Date Analyzed: 2013-10-31 QC Preparation: 2013-10-30

Analyzed By: KC Prepared By: KC

MDL

 $\begin{array}{c|ccccc} Parameter & Flag & Result & Units & RL \\ \hline DRO & 8.80 & mg/Kg & 50 \end{array}$ 

					Spike	Percent	Recovery
Surrogate	$\operatorname{Flag}$	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		121	mg/Kg	1	100	121	88.3 - 126.1

### Laboratory Control Spike (LCS-1)

QC Batch: 106254 Prep Batch: 89979 Date Analyzed: 2013-10-26 QC Preparation: 2013-10-25 Analyzed By: AK Prepared By: AK

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$
Benzene	2.03	mg/Kg	1	2.00	< 0.00810	102	70 - 130
Toluene	2.07	${ m mg/Kg}$	1	2.00	< 0.00750	104	70 - 130
Ethylbenzene	2.12	mg/Kg	1	2.00	< 0.00730	106	70 - 130
Xylene	6.47	mg/Kg	1	6.00	< 0.00700	108	70 - 130

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	2.13	mg/Kg	1	2.00	< 0.00810	106	70 - 130	5	20
Toluene	2.12	${ m mg/Kg}$	1	2.00	< 0.00750	106	70 - 130	2	20

TBD COG/Loving St #2

Page Number: 17 of 31

ving St #2 Eddy Co, NM

control spikes continued . . .

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD -	Limit
Ethylbenzene	2.20	mg/Kg	1	2.00	< 0.00730	110	70 - 130	4	20
Xylene	6.62	${ m mg/Kg}$	1	6.00	< 0.00700	110	70 - 130	2	20

Work Order: 13102423

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)	2.18	2.28	mg/Kg	1	2.00	109	114	70 - 130
4-Bromofluorobenzene (4-BFB)	2.21	2.07	${ m mg/Kg}$	1	2.00	110	104	70 - 130

#### Laboratory Control Spike (LCS-1)

QC Batch: 106255 Prep Batch: 89979 Date Analyzed: 2013-10-26 QC Preparation: 2013-10-25 Analyzed By: AK Prepared By: AK

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO	17 7	mø/Kø	1	20.0	< 2.32	88	70 - 130

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.	$_{ m Limit}$	RPD	$\operatorname{Limit}$
GRO	17.0	mg/Kg	1	20.0	< 2.32	85	70 - 130	4	20

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

	LCS	LCSD			Spike	LCS	LCSD	$\operatorname{Rec}$ .
Surrogate	Result	Result	$\mathbf{U}\mathbf{nits}$	Dil.	Amount	Rec.	Rec.	$\operatorname{Limit}$
Trifluorotoluene (TFT)	2.42	2.36	mg/Kg	1	2.00	121	118	70 - 130
4-Bromofluorobenzene (4-BFB)	2.50	2.42	${ m mg/Kg}$	1	2.00	125	121	70 - 130

### Laboratory Control Spike (LCS-1)

QC Batch: 106285 Prep Batch: 90025 Date Analyzed: 2013-10-28 QC Preparation: 2013-10-25 Analyzed By: KC Prepared By: KC

	LCS			$_{ m Spike}$	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO	215	mg/Kg	1	250	7.98	83	79.4 - 120.1

Report Date: November 5, 2013 TBD

Work Order: 13102423 COG/Loving St #2 Page Number: 18 of 31 Eddy Co, NM

control	spikes	continued			,
---------	--------	-----------	--	--	---

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	233	mg/Kg	1	250	7.98	90	79.4 - 120.1	8	20

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

	LCS	LCSD			$_{ m Spike}$	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	100	98.4	mg/Kg	1	100	100	98	92.9 - 137.7

### Laboratory Control Spike (LCS-1)

QC Batch: 106322 Prep Batch: 90062 Date Analyzed: 2013-10-29 QC Preparation: 2013-10-28 Analyzed By: KC Prepared By: KC

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	$\mathbf{A}\mathbf{mount}$	Result	Rec.	$\operatorname{Limit}$
DRO	297	mg/Kg	1	250	15	113	53.8 - 129

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.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	RPD	Limit
DRO	315	mg/Kg	1	250	15	126	53.8 - 129	6	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.	$\mathbf{A}\mathbf{mount}$	Rec.	Rec.	$\mathbf{Limit}$
n-Tricosane	115	118	mg/Kg	1	100	115	118	61.3 - 170.4

### Laboratory Control Spike (LCS-1)

QC Batch: 106332 Prep Batch: 89999 Date Analyzed: 2013-10-26 QC Preparation: 2013-10-25

Analyzed By: AK Prepared By: AK

Danam	LCS	TI:4	D:I	Spike	Matrix	n	Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene	2.19	mg/Kg	1	2.00	< 0.00810	110	70 - 130
Toluene	2.20	mg/Kg	1	2.00	< 0.00750	110	70 - 130
Ethylbenzene	2.31	mg/Kg	1	2.00	< 0.00730	116	70 - 130
Xylene	6.94	mg/Kg	1	6.00	< 0.00700	116	70 - 130

TBD

Work Order: 13102423 COG/Loving St #2

Page Number: 19 of 31 Eddy Co, NM

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.12	mg/Kg	1	2.00	< 0.00810	106	70 - 130	3	20
Toluene	2.13	mg/Kg	1	2.00	< 0.00750	106	70 - 130	3	20
Ethylbenzene	2.21	mg/Kg	1	2.00	< 0.00730	110	70 - 130	4	20
Xylene	6.67	${ m mg/Kg}$	1	6.00	< 0.00700	111	70 - 130	4	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	$\operatorname{Units}$	Dil.	$\mathbf{A}\mathbf{mount}$	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.31	2.24	mg/Kg	1	2.00	116	112	70 - 130
4-Bromofluorobenzene (4-BFB)	2.35	2.19	${ m mg/Kg}$	1	2.00	118	110	70 - 130

### Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 89999

106333

Date Analyzed:

2013-10-26 QC Preparation: 2013-10-25 Analyzed By: AK Prepared By: AK

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	$\mathbf{A}\mathbf{m}\mathbf{o}\mathbf{u}\mathbf{n}\mathbf{t}$	Result	Rec.	$_{ m Limit}$
GRO	16.3	mg/Kg	1	20.0	< 2.32	82	70 - 130

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

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	$\operatorname{Limit}$
GRO	17.2	mg/Kg	1	20.0	< 2.32	86	70 - 130	5	20

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

Surrogate	$rac{ ext{LCS}}{ ext{Result}}$	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	${ m Rec.} \ { m Limit}$
Trifluorotoluene (TFT)	2.25	2.32	mg/Kg	1	2.00	112	116	70 - 130
4-Bromofluorobenzene (4-BFB)	2.61	2.44	${ m mg/Kg}$	1	2.00	130	122	70 - 130

### Laboratory Control Spike (LCS-1)

QC Batch:

106359

Prep Batch: 90061

Date Analyzed:

2013-10-30

QC Preparation: 2013-10-29

Analyzed By: AR

Prepared By: AR

	LCS			$\operatorname{Spike}$	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	$\mathbf{Limit}$
Chloride	2360	mg/Kg	1	2500	< 3.85	94	89.7 - 115.9

Work Order: 13102423 TBD COG/Loving St #2

Page Number: 20 of 31 Eddy Co, NM

	LCSD			Spike	Matrix		Rec.		R.PD
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	$\operatorname{Limit}$	R.P.D	$\operatorname{Limit}$
Chloride	2470	mg/Kg	1	2500	< 3.85	99	89.7 - 115.9	5	20

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

#### Laboratory Control Spike (LCS-1)

QC Batch: 106364

Date Analyzed:

2013-10-30

Analyzed By: AR

Prepared By: AR.

Prep Batch: 90061

QC Preparation: 2013-10-29

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$
Chloride	2690	mg/Kg	1	2500	< 3.85	108	89.7 - 115.9

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.	$\mathbf{A}\mathbf{mount}$	Result	Rec.	$\mathbf{Limit}$	R.P.D	$_{ m Limit}$
Chloride	2520	mg/Kg	1	2500	< 3.85	101	89.7 - 115.9	6	20

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

#### Laboratory Control Spike (LCS-1)

QC Batch:

106377

Date Analyzed:

2013-10-31

Analyzed By: AK

Prep Batch: 90076

QC Preparation: 2013-10-30

Prepared By: AK

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	$_{ m Limit}$
GRO	15.3	${ m mg/Kg}$	1	20.0	< 2.32	76	70 - 130

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

	LCSD			$\operatorname{Spike}$	Matrix		Rec.		R.PD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	$_{ m Limit}$
GRO	15.4	mg/Kg	1	20.0	< 2.32	77	70 - 130	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.	${f Amount}$	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.30	2.21	mg/Kg	1	2.00	115	110	70 - 130
4-Bromofluorobenzene (4-BFB)	2.42	2.34	${ m mg/Kg}$	1	2.00	121	117	70 - 130

### Laboratory Control Spike (LCS-1)

QC Batch:

Prep Batch: 90106

106384

Date Analyzed:

2013-10-31

Analyzed By: KC Prepared By: KC

QC Preparation: 2013-10-30

TBD

Work Order: 13102423 COG/Loving St #2

Page Number: 21 of 31 Eddy Co, NM

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	$\mathbf{A}\mathbf{mount}$	Result	Rec.	Limit
DRO	213	mg/Kg	1	250	8.8	82	79.4 - 120.1

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.	$_{ m Limit}$	RPD	Limit
DRO	245	mg/Kg	1	250	8.8	94	79.4 - 120.1	14	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	$U_{ m nits}$	Dil.	Amount	Rec.	Rec.	$\mathbf{Limit}$
n-Tricosane	104	104	mg/Kg	1	100	104	104	92.9 - 137.7

Matrix Spike (MS-1) Spiked Sample: 344503

QC Batch: 106254 Prep Batch: 89979

Date Analyzed: 2013-10-26 QC Preparation: 2013-10-25

Analyzed By: AK Prepared By: AK

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	$\mathbf{Limit}$
Benzene	2.09	mg/Kg	1	2.00	< 0.00810	104	70 - 130
Toluene	2.09	mg/Kg	1	2.00	< 0.00750	104	70 - 130
Ethylbenzene	2.14	$_{ m mg/Kg}$	1	2.00	< 0.00730	107	70 - 130
Xylene	6.45	mg/Kg	1	6.00	< 0.00700	108	70 - 130

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.	${ m Amount}$	Result	Rec.	${f Limit}$	RPD	Limit
Benzene	2.04	mg/Kg	1	2.00	< 0.00810	102	70 - 130	2	20
Toluene	2.04	$\mathrm{mg}/\mathrm{Kg}$	1	2.00	< 0.00750	102	70 - 130	2	20
Ethylbenzene	2.14	mg/Kg	1	2.00	< 0.00730	107	70 - 130	0	20
Xylene	6.44	$\mathrm{mg}/\mathrm{Kg}$	1	6.00	< 0.00700	107	70 - 130	0	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	$\operatorname{Units}$	Dil.	$\mathbf{Amount}$	Rec.	R.ec.	$\operatorname{Limit}$
Trifluorotoluene (TFT)	2.19	2.12	mg/Kg	1	2	110	106	70 - 130
4-Bromofluorobenzene (4-BFB)	2.07	2.09	$_{ m mg/Kg}$	1	2	$104^{\circ}$	104	70 - 130

Matrix Spike (MS-1) Spiked Sample: 344503

QC Batch: 106255 Prep Batch: 89979

Date Analyzed: 2013-10-26 QC Preparation: 2013-10-25

Analyzed By: AK Prepared By: AK

TBD

Work Order: 13102423 COG/Loving St #2

Page Number: 22 of 31 Eddy Co, NM

Param	MS Result	Units	Dil.	$rac{ ext{Spike}}{ ext{Amount}}$	Matrix Result	Rec.	Rec. Limit
GRO	17.2	mg/Kg	1	20.0	< 2.32	86	70 - 130
Percent recovery is based	on the spike result. RPD	is based on	the spike a	nd spike dupl	icate result.		
	MSD		Spike	Matrix	Re	ec.	RPD

	MSD			$_{ m Spike}$	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	17.0	mg/Kg	1	20.0	< 2.32	85	70 - 130	1	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)	2.42	2.33	mg/Kg	1	2	121	116	70 - 130
4-Bromofluorobenzene (4-BFB)	2.51	2.43	${ m mg/Kg}$	1	2	126	122	70 - 130

Spiked Sample: 344644 Matrix Spike (MS-1)

QC Batch: 106285 Date Analyzed:

Analyzed By: KC 2013-10-28

Prep Batch: 90025

QC Preparation: 2013-10-25 Prepared By: KC

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO	280	mg/Kg	1	250	98.8	72	64.8 - 149.9

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.	$_{ m Limit}$	RPD	$\operatorname{Limit}$
DRO	272	mg/Kg	1	250	98.8	69	64.8 - 149.9	3	20

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

	MS	MSD			$\operatorname{Spike}$	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	$\mathbf{Limit}$
n-Tricosane	116	113	mg/Kg	1	100	116	113	85.4 - 147.7

Matrix Spike (MS-1) Spiked Sample: 344877

QC Batch: 106322 Prep Batch: 90062

Date Analyzed: 2013-10-29 QC Preparation: 2013-10-28 Analyzed By: KC Prepared By: KC

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	$\mathbf{A}\mathbf{mount}$	Result	Rec.	Limit
DRO	301	mg/Kg	1	250	14	115	29 - 168.5

TBD

Work Order: 13102423 COG/Loving St #2

Page Number: 23 of 31

Eddy Co, NM

	MSD			Spike	Matrix		Rec.		R.PD
Param	Result	Units	Dil.	Amount	Result	Rec.	$\mathbf{Limit}$	RPD	Limit
DRO	292	mg/Kg	1	250	14	111	29 - 168.5	3	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
n-Tricosane	106	104	mg/Kg	1	100	106	104	59.5 - 168.9

Matrix Spike (MS-1) Spiked Sample: 344652

QC Batch: Prep Batch:

106332 89999

Date Analyzed: 2013-10-26

QC Preparation: 2013-10-25

Analyzed By: AK

Prepared By: AK

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$
Benzene	1.83	mg/Kg	1	2.00	< 0.00810	92	70 - 130
Toluene	1.86	${ m mg/Kg}$	1	2.00	< 0.00750	93	70 - 130
Ethylbenzene	1.93	$_{ m mg/Kg}$	1	2.00	< 0.00730	96	70 - 130
Xylene	5.80	mg/Kg	1	6.00	< 0.00700	97	70 - 130

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
Benzene	1.94	mg/Kg	1	2.00	< 0.00810	97	70 - 130	6	20
Toluene	1.97	${ m mg/Kg}$	1	2.00	< 0.00750	98	70 - 130	6	20
Ethylbenzene	2.04	${ m mg/Kg}$	1	2.00	< 0.00730	102	70 - 130	6	20
Xylene	6.15	${ m mg/Kg}$	1	6.00	< 0.00700	102	70 - 130	6	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.	$\mathbf{A}\mathbf{mount}$	Rec.	Rec.	$\operatorname{Limit}$
Trifluorotoluene (TFT)	1.95	2.07	mg/Kg	1	2	98	104	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	2.02	mg/Kg	1	2	97	101	70 - 130

Matrix Spike (MS-1) Spiked Sample: 344652

QC Batch: 106333 Prep Batch: 89999

Date Analyzed: 2013-10-26 QC Preparation: 2013-10-25

Analyzed By: AK Prepared By: AK

	MS			Spike	Matrix		$\operatorname{Rec}$ .
Param	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$
GRO	29.0	mg/Kg	1	20.0	< 2.32	145	70 - 130

Work Order: 13102423 TBD COG/Loving St #2

MSD RPD Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit **GRO** 20.0 < 2.32 70 - 130 58 20 16.0mg/Kg 80

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.	$\mathbf{A}\mathbf{mount}$	Rec.	Rec.	$_{ m Limit}$
Trifluorotoluene (TFT)	2.81	2.24	mg/Kg	1	2	140	112	70 - 130
4-Bromofluorobenzene (4-BFB)	3.06	2.50	${ m mg/Kg}$	1	2	153	125	70 - 130

Matrix Spike (MS-1) Spiked Sample: 344649

QC Batch: 106359 Date Analyzed:

2013-10-30

Analyzed By: AR.

Prep Batch: 90061

QC Preparation: 2013-10-29

Prepared By: AR.

Page Number: 24 of 31

Eddy Co, NM

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$
Chloride	2440	mg/Kg	5	2500	<19.2	98	78.9 - 121

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

	MSD			Spike	Matrix		Rec.		R.PD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	R.PD	$\operatorname{Limit}$
Chloride	2600	mg/Kg	5	2500	<19.2	104	78.9 - 121	6	20

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

Matrix Spike (MS-1) Spiked Sample: 344659

QC Batch: 106364 Prep Batch: 90061

Date Analyzed: 2013-10-30 QC Preparation: 2013-10-29

Analyzed By: AR Prepared By: AR.

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	6000	mg/Kg	10	2500	3300	108	78.9 - 121

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.	$\mathbf{A}\mathbf{mount}$	Result	Rec.	Limit	RPD	$\operatorname{Limit}$
Chloride	5740	mg/Kg	10	2500	3300	98	78.9 - 121	4	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: 344673

QC Batch: 106377 Date Analyzed: Analyzed By: AK 2013-10-31 Prep Batch: 90076 QC Preparation: 2013-10-30 Prepared By: AK

TBD

Work Order: 13102423 COG/Loving St #2

Eddy Co, NM

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit
GRO	3000	mg/Kg	50	20.0	2500	2500	70 - 130

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	2900	mg/Kg	50	20.0	2500	2000	70 - 130	3	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	R.esult	Result	Units	Dil.	${f Amount}$	Rec.	Rec.	$_{ m Limit}$
Trifluorotoluene (TFT)	1.75	1.56	mg/Kg	50	2	88	78	70 - 130
4-Bromofluorobenzene (4-BFB)	89.4	89.4	mg/Kg	50	2	4470	4470	70 - 130

Matrix Spike (MS-1) Spiked Sample: 344661

QC Batch: 106384 Prep Batch: 90106

Date Analyzed: 2013-10-31 QC Preparation: 2013-10-30 Analyzed By: KC Prepared By: KC

Page Number: 25 of 31

	MS			$\operatorname{Spike}$	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$
DRO	201	mg/Kg	1	250	10.6	76	64.8 - 149.9

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	R.PD	Limit
DRO	203	mg/Kg	1	250	10.6	77	64.8 - 149.9	1	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.	$\operatorname{Limit}$
n-Tricosane	93.6	95.7	mg/Kg	1	100	94	96	85.4 - 147.7

### Standard (CCV-1)

QC Batch: 106254

Date Analyzed: 2013-10-26

Analyzed By: AK

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/kg	0.100	0.111	111	80 - 120	2013-10-26
Toluene		mg/kg	0.100	0.109	109	80 - 120	2013-10-26
Ethylbenzene		mg/kg	0.100	0.108	108	80 - 120	2013-10-26
Xylene		mg/kg	0.300	0.326	109	80 - 120	2013-10-26

TBD

Work Order: 13102423 COG/Loving St #2 Page Number: 26 of 31 Eddy Co, NM

Standard (CCV-2)

QC Batch: 106254

Date Analyzed: 2013-10-26

Analyzed By: AK

			$\mathrm{CCVs}$	CCVs	CCVs	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	$\operatorname{Flag}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/kg	0.100	0.114	114	80 - 120	2013-10-26
Toluene		$\mathrm{mg/kg}$	0.100	0.112	112	80 - 120	2013-10-26
Ethylbenzene		mg/kg	0.100	0.110	110	80 - 120	2013-10-26
Xylene		mg/kg	0.300	0.331	110	80 - 120	2013-10-26

Standard (CCV-3)

QC Batch: 106254

Date Analyzed: 2013-10-26

Analyzed By: AK

			$\mathrm{CCVs}$	CCVs	CCVs	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	$\operatorname{Date}$
Param	$\operatorname{Flag}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/kg	0.100	0.109	109	80 - 120	2013-10-26
Toluene		mg/kg	0.100	0.108	108	80 - 120	2013-10-26
Ethylbenzene		mg/kg	0.100	0.105	105	80 - 120	2013-10-26
Xylene		mg/kg	0.300	0.313	104	80 - 120	2013-10-26

Standard (CCV-1)

QC Batch: 106255

Date Analyzed: 2013-10-26

Analyzed By: AK

			CCVs	CCVs	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.14	114	80 - 120	2013-10-26

Standard (CCV-2)

QC Batch: 106255

Date Analyzed: 2013-10-26

Analyzed By: AK

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	${f Analyzed}$
GRO		mg/Kg	1.00	0.929	93	80 - 120	2013-10-26

Standard (CCV-3)

QC Batch: 106255 Date Analyzed: 2013-10-26 Analyzed By: AK

Work Order: 13102423 Page Number: 27 of 31 Report Date: November 5, 2013 Eddy Co, NM COG/Loving St #2 TBD CCVs **CCVs** CCVs Percent True Found Percent Recovery Date Conc. Recovery Limits Analyzed Param Flag Units Conc. 2013-10-26 102 80 - 120 GRO mg/Kg 1.00 1.02 Standard (CCV-1) Date Analyzed: 2013-10-28 Analyzed By: KC QC Batch: 106285 **CCVs CCVs CCVs** Percent True Found Percent Recovery Date Conc. Analyzed Conc. Recovery Limits Param Flag Units 2013-10-28 250 206 82 80 - 120  $\overline{DRO}$ mg/Kg Standard (CCV-2) Date Analyzed: 2013-10-28 QC Batch: 106285 Analyzed By: KC  $\operatorname{CCVs}$ **CCVs CCVs** Percent Date True Found Percent Recovery Param Flag Units Conc. Conc. Recovery Limits Analyzed 250 233 93 80 - 120 2013-10-28 DRO mg/Kg Standard (CCV-3) Date Analyzed: 2013-10-28 Analyzed By: KC QC Batch: 106285 CCVs **CCVs** CCVsPercent Found Recovery Date True Percent Units Limits Analyzed Param Flag Conc. Conc. Recovery 2013-10-28 DRO mg/Kg 250 206 82 80 - 120 Standard (CCV-1) Analyzed By: KC QC Batch: 106322 Date Analyzed: 2013-10-29 **CCVs CCVs CCVs** Percent True Found Percent Recovery Date Param Units Conc. Conc. Recovery Limits Analyzed Flag DRO mg/Kg 250 298 119 80 - 120 2013-10-29

Date Analyzed: 2013-10-29

Analyzed By: KC

Standard (CCV-2)

QC Batch: 106322

TBD COG/Loving St #2

Page Number: 28 of 31 Eddy Co, NM

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	276	110	80 - 120	2013-10-29

Work Order: 13102423

## Standard (CCV-3)

QC Batch: 106322

Date Analyzed: 2013-10-29

Analyzed By: KC

			CCVs	CCVs	$\mathrm{CCVs}$	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	282	113	80 - 120	2013-10-29

## Standard (CCV-1)

QC Batch: 106332

Date Analyzed: 2013-10-26

Analyzed By: AK

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/kg	0.100	0.109	109	80 - 120	2013-10-26
Toluene		${ m mg/kg}$	0.100	0.108	108	80 - 120	2013-10-26
Ethylbenzene		$\mathrm{mg/kg}$	0.100	0.105	105	80 - 120	2013-10-26
Xylene		mg/kg	0.300	0.313	104	80 - 120	2013-10-26

### Standard (CCV-2)

QC Batch: 106332

Date Analyzed: 2013-10-26

Analyzed By: AK

			CCVs True	CCVs Found	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/kg	0.100	0.111	111	80 - 120	2013-10-26
Toluene		mg/kg	0.100	0.108	108	80 - 120	2013-10-26
Ethylbenzene		mg/kg	0.100	0.105	105	80 - 120	2013-10-26
Xylene		${ m mg/kg}$	0.300	0.315	105	80 - 120	2013-10-26

## Standard (CCV-3)

QC Batch: 106332 Date Analyzed: 2013-10-26 Analyzed By: AK

Report Date: November 5, 2013 TBD

Work Order: 13102423 COG/Loving St #2

Page Number: 29 of 31 Eddy Co, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/kg	0.100	0.108	108	80 - 120	2013-10-26
Toluene		mg/kg	0.100	0.106	106	80 - 120	2013-10-26
Ethylbenzene		mg/kg	0.100	0.102	102	80 - 120	2013-10-26
Xylene		mg/kg	0.300	0.307	102	80 - 120	2013-10-26

# Standard (CCV-1)

QC Batch: 106333

Date Analyzed: 2013-10-26

Analyzed By: AK

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	$\operatorname{Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.03	103	80 - 120	2013-10-26

### Standard (CCV-2)

QC Batch: 106333

Date Analyzed: 2013-10-26

Analyzed By: AK

			CCVs	$\mathrm{CCVs}$	$\mathrm{CCVs}$	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.935	94	80 - 120	2013-10-26

### Standard (CCV-3)

QC Batch: 106333

Date Analyzed: 2013-10-26

Analyzed By: AK

			CCVs	$\mathrm{CCVs}$	CCVs	Percent	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.952	95	80 - 120	2013-10-26

## Standard (CCV-1)

QC Batch: 106359

Date Analyzed: 2013-10-30

Analyzed By: AR

			$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\mathrm{CCVs}$	$\operatorname{Percent}$	
			$\operatorname{True}$	Found	Percent	Recovery	Date
Param	$\operatorname{Flag}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2013-10-30

TBD COG/Loving St #2 Eddy Co, NM Standard (CCV-2) Analyzed By: AR QC Batch: 106359 Date Analyzed: 2013-10-30 **CCVs** CCVs**CCVs** Percent Percent Recovery Date True Found Units Param Flag Conc. Conc. Recovery Limits Analyzed Chloride mg/Kg 100 99.9 100 85 - 115 2013-10-30 Standard (CCV-1) QC Batch: 106364 Date Analyzed: 2013-10-30 Analyzed By: AR. **CCVs CCVs** CCVsPercent True Found Percent Recovery Date Param Flag Units Conc. Conc. Recovery Limits Analyzed Chloride mg/Kg 100 101 101 85 - 115 2013-10-30 Standard (CCV-2) QC Batch: 106364 Date Analyzed: 2013-10-30 Analyzed By: AR. CCVsCCVsCCVsPercent Date True Found Percent Recovery Param Flag Units Conc. Conc. Recovery Limits Analyzed Chloride 85 - 115 2013-10-30 mg/Kg 100 99.2 99 Standard (CCV-1) QC Batch: 106377 Date Analyzed: 2013-10-31 Analyzed By: AK CCVs CCVsCCVsPercent True Found Recovery Percent Date Param Flag Units Conc. Conc. Recovery Limits Analyzed

Work Order: 13102423

Report Date: November 5, 2013

GRO

Standard (CCV-2)

QC Batch: 106377

mg/Kg

1.00

Page Number: 30 of 31

80 - 120

2013-10-31

Analyzed By: AK

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		${ m mg/Kg}$	1.00	0.914	91	80 - 120	2013-10-31

Date Analyzed:

0.891

2013-10-31

89

Report Date: November 5, 2013 TBD

Work Order: 13102423 COG/Loving St #2 Page Number: 31 of 31 Eddy Co, NM

## Standard (CCV-3)

QC Batch: 106377

Date Analyzed: 2013-10-31

Analyzed By: AK

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.06	106	80 - 120	2013-10-31

# Standard (CCV-1)

QC Batch: 106384

Date Analyzed: 2013-10-31

Analyzed By: KC

			CCVs	$\operatorname{CCVs}$	$\operatorname{CCVs}$	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	241	96	80 - 120	2013-10-31

# Standard (CCV-2)

QC Batch: 106384

Date Analyzed: 2013-10-31

Analyzed By: KC

			CCVs	$\operatorname{CCVs}$	$\mathrm{CCVs}$	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	215	86	80 - 120	2013-10-31

1--34-

Analysis Request of Chain of Custoo	dy Record	PAGE: / OF: J									
7 maryolo Hoquottor Orlam or Guotot	ANALYSIS REQUEST (Circle or Specify Method No.)										
TETRATECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946		5 (Ext. to C35) 1 Cr Pb Hg Se 1 Vr Pd Hg Se DS									
CLIENT NAME: SITE MANAGER: TKE TAVANZ	PRESERVATIVE METHOD	MOD. TX1005 MOD. TX1005 Ag As Ba Cd Ag As Ba Cd S solatiles Jatiles 240/8260/624 Vol. 8270/625 Inf) Inf) Ss) Cations, pH, TE									
PROJECT NO.:  PROJECT NAME:  COG-Loving 51.#2  LAB I.D.  DATE TIME E S SAMPLE IDENTIFICATION	Y/N)	Is Ag A A Is Ag A A Is Ag A B 8240/8 B 8240/8 OB C C Air)									
LAB I.D. DATE TIME KILLY BANGO SAMPLE IDENTIFICATION  SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS FILTERED (Y/N) HCL HN03 ICE NONE ODDAY	(BTEX B021B)  TOPHY 8015 MOD_TX1005 PAH 8270 RCRA Metals Ag As Ba Cd TCLP Volatiles TCLP Semi Volatiles TCLP Semi Volatiles RCI GC.MS Vol. 8240/8260/624 GC.MS Vol. 8240/8260/624 GC.MS Semi. Vol. 8270/625 PCB's 8080/608 Pest. 808/608 Chloride Gamma Spec. Alpha Beta (Air) PLM (Asbestos) Major Anions/Cations, pH, TD									
344640 10/23 5 X AH 1 (0-1)	I Y	$X \mid X \mid$									
641 1 (1-1.5)											
642 (2-2.5)	1										
643 (3-3,5)	1	У									
644 AH 2 (0-1)	1	XX									
645 (1-1.5)	1										
646 (2-2,5)	1										
647 (3-3,5)	1										
648 AH3 (0-1)		$\chi  \chi $									
RELINQUISHED BY: (Signature)  Date: 10 - 2H - 13   December 18   Decembe	Date 24	SAMPLED BY: (Print & Initial) . Date:									
RELINQUISHED BY: (Signature)  Date: 10 - 24 - 1   DECENTO BY: (Signature)  Time: 14 36  RECEIVED BY: (Signature)  RECEIVED BY: (Signature)	Time: 19 35	SAMPLE SHIPPED BY: (Circle)  AIRBILL #:									
RELINQUISHED BY: (Signature)  Time:  RECEIVED BY: (Signature)	Time:	FEDEX BUS NAND DELIVERED UPS OTHER:  TETRA TECH CONTACT PERSON: Results by:									
RECEIVING LABORATORY: RECEIVED BY: (Signature)  ADDRESS: CITY: Mid-land STATE: ZIP: CONTACT: PHONE: DATE:	Time:	The Tavarez RUSH Charges Authorized: Yes No									
SAMPLE CONDITION WHEN RECEIVED:  REMARKS:  Run deeper scarples of Total Ben  Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to	Tere exceeds 10 mg/h	Fetains Pink copy - Accounting receives Gold copy.									
Midvand - all	Run deg	4 4 /// //									

Ar	Analysis Request of Chain of Custody Record													PA	\GE	:		<u> </u>	OF	: 6	<u> </u>									
									ANALYSIS REQUEST (Circle or Specify Method No.)													1								
						Midland, Te	Spring St.									(Ext. to C35)	Cr Pb Hg	∣≽										S		
CLIENT NAI				SITE MANAGER:  THE TAVACE  SEE METHOD  PRESERVATIVE METHOD						- 1	SDOTX	As Ba Cd	Ba			260/624	270/625						ns, pH, 11							
PROJECT N	Ю.:		PR	OJE	СТ <b>О</b> (	NAME:		CONTA	(Z							MGD.	s Ag A	s Ag A	es	/olatiles	8240/82	i. Vol. 8	809	۵	ن	Air)	(sol	s/Catio		
LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	G-Loving St. # Samp	し <sub>。</sub> ルハ LE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL HCL	HNO3	ICE	NONE		BTEX 8021B	PAH 8270	RCRA Metal	TCLP Metal	TCLP Volatiles	TCLP Semi Volatiles	GC.MS Vol.	GC.MS Semi. Vol. 8270/625	PCB's 8080/	Pest. 808/608 Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS		
650	10/23		5		X	AH 3 /2	1-2.5)						X		T									<b>/</b>	1			T		
65)	10/23		5	,	X	AH 3 (2	3-3,5)	1					X											X						
								,																					П	T
																													П	
																													П	
<u> </u>																														
_																														
•												$\lambda$																		
RELINQUISHED RELINQUISHED	BY: (Signature	e) -7 - e)				Date: 70-24-) ] Time: 1436  Date:	RECEIVED BY: (Signature)			Ti	ate:	9.	41 35	5		SA	MPL	ED B	Y: (Pi <b>20</b> IPPE	rint & P D BY:	Initial) <b>/Qy</b> (Circl	<u>C [,</u>	\$	AG	_	Tir	ite: ne:			
RELINQUISHED						Time:	RECEIVED BY: (Signature)	<u> </u>		D	me: ate:					-	HANC	X DEL	IVER	ED	BU: UP:	s s				OTHI	ER:			
RECEIVING LAB		OTATE.	Tre	:ce			RECEIVED BY: (Signature)				те:					-  ' <u>"</u>				NTAC'				2			RUSH	its by: I Char orized:	ges	
CITY:	TION WHEN F	STATE:									<u> </u>	K)									Ye	es	No	0						
	Please fi	ll out all	CODIE	es -	Le	aboratory retains Yellow	copy - Return Orginal copy to	Tetra To	ach	- F	mie	ct M	lana	ger r	etai	ns P	ink i	con	v -	Acc	OUD	tina	nec	oives	GG	id c	ODV.			