PJXK16pp433258 4p63

HOBBS OCD

District 1
1625 N. French Dr., Hobbs, NM 88240
District 11
1301 W. Grand Avenue, Artesia, NM 88210
District 111
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

08/22/2012

Attach Additional Sheets If Necessary

Phone:

432-212-2399

State of New Mexico Energy Minerals and Natural Resources

APR 2 3 2013

Form C-141 Revised October 10, 2003

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

RECEIVED

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

			Rele	ease Notific	ation	and Co	rrective A	ction	
						OPERA'	OR	⊠ Initi	al Report Final Report
Name of Co	mpany	COG OP				Contact	Pa	at Ellis	
Address				dland, TX 7970	1	Telephone N	No. 432-	230-0077	
Facility Nar	ne P	rohibition Fe	deral Un	it #2 SWD	1	Facility Typ	e S	SWD	
Surface Ow	ner Fede	ral		Mineral C	wner			Lease 1	No. (API#) 30-025-31716
				LOCA	TION	OF REI	LEASE		
Unit Letter K	Section 11	Township 22S	Range 32E	Feet from the	North/	South Line	Feet from the	East/West Line	County Lea
				Latitude 32 2		Longitu OF REL	ide 103 38.826		
Type of Rele						Name and Address of the Owner, where the Party of the Owner, where the Owner, which the Owner, where the Owner, which the Own	Release 20bbls		Recovered 19bbls
		uced water tar	nk		-	08/14/2012			Hour of Discovery 12 3:00 p.m.
Was Immedia	ite Notice (Yes 🗵	No 🖾 Not Re	equired	If YES, To	Whom?		
By Whom?						Date and H			
Was a Water	course Read		Yes 🗵	No		If YES, Vo	lume Impacting t	he Watercourse.	
If a Watercou	rse was Im	pacted, Descri	be Fully.	•				***************************************	
		em and Remedent			zer coul	d handle whi	ch ultimately caus	sed the release of f	luid.
Initially 20bb dike walls of	Is were rele the facility. amination f	All free fluid	water tan	k and we were ab	he tank	has been clea	ned. Tetra Tech	will sample the spi	luid was contained inside the ill site area to delineate any ior to any significant
regulations al public health should their of or the environ	or the environment. In a	are required to ronment. The ave failed to a	acceptance acceptance dequately CD accep	d/or file certain re e of a C-141 repo investigate and re	elease no ert by the emediate	otifications are NMOCD me contamination	nd perform correct arked as "Final Roon that pose a three	tive actions for rel eport" does not rel eat to ground wate	suant to NMOCD rules and eases which may endanger ieve the operator of liability r, surface water, human health ompliance with any other
Signature;	/	Tu						SERVATION	DIVISION
Printed Name	: /	Josh	Russo	_	- 1	Approved by	District Supervise	or:	
Title:		HSE Co	ordinator		1	Approval Dat	e:	Expiration	Date:
E-mail Addre	ss:	jrusso@conc	horesourc	es.com		Conditions of	Approval:		Attached

HOBBS OCD

State of New Mexico
Energy Minerals and Natural Resources APR 2 3 2013

RECEIVED

PJXK1600433258 4063

Form C-141 Revised October 10, 2003

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

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

Santa Fe, NM 87505 Release Notification and Corrective Action

Oil Conservation Division

1220 South St. Francis Dr.

						OPERAT	FOR	☐ Init	ial Report Final Repor
Name of Co	mpany C	OG Operat	ing LLC	3		Contact Par			
				d, Texas 79701		Telephone N	No. (432) 230-0	077	
		ition Feder]	Facility Typ	e SWD		
Surface Ow	ner: Feder	al		Mineral C	wner			Lease	No. (API#) 30-025-31716
				LOCA	TION	OF REI	LEASE		
Unit Letter K	Section 11	Township 22S	Range 32E	Feet from the 1980		South Line South	Feet from the 2080	East/West Line West	County Lea
			L	Latitude N 32.4		Longitud OF REL		9 °	
Type of Rele						Volume of	Release 20 bbls		Recovered 19 bbls
Source of Re	lease: produ	uced water tar	ık			Committee of the Commit	our of Occurrence		Hour of Discovery
							8/14/2012	08/14/20	012 10:00a.m.
Was Immedi	ate Notice C		Yes 🗵	No Not Re	equired	If YES, To	Whom?		
By Whom?						Date and H	our		
Was a Water	course Reac	hed?				If YES, Vo	lume Impacting t	he Watercourse.	
			Yes 🛚	No					
The produced	d water was	and Cleanup A	acility fas	ter than the equali					fluids.
I hereby certifications a public health should their corthe environments.	ify that the is all operators or the environment. In a	nformation gi are required to conment. The ave failed to a	ven above o report ar acceptance adequately OCD accep	e is true and compind/or file certain rece of a C-141 reporting and receptions and receptions are supported in the certain rec	lete to the elease no ort by the	e best of my otifications ar NMOCD me contamination	knowledge and und perform corrector arked as "Final Roon that pose a three arked as "All Roon that pose a three arked as "Final Roon that pose arked as "Final Roon that pose arked as "Final Roon that pose a three arked as "Final Roon that pose arked as "Final Roon that pose a three arked as "Final Roon that pose arked as "Final Roon that pose a three arked as "Final Roon that pose arked as	rt and submitted in nderstand that puritive actions for re eport" does not re eat to ground water	t to NMOCD for review. rsuant to NMOCD rules and leases which may endanger lieve the operator of liability er, surface water, human health compliance with any other
Signature:	M	7	7					SERVATION	DIVISION
Printed Name	e: Ike Tavar	ez (agent for	COG)		/	Approved by	District Superviso	or:	- X
Title: Project	Manager				1	Approval Dat	e:	Expiration	Date:
E-mail Addre	ess: ike.tava	rez@tetratech		2) 682-4559		Conditions of	Approval:		Attached

SITE INFORMATION Report Type: Closure Report **General Site Information:** Site: **Prohibition Federal Unit #2 SWD** Company: **COG Operating LLC** T22S R32E Section, Township and Range Unit K Sec 11 API-30-025-31716 Lease Number: County: Lea County GPS: 32.822267° N 104.069467° W Surface Owner: Federal Mineral Owner: East of Loving at the intersection of Hwy 31 and Hwy 128 (Jal Hwy), travel east on Hwy 128 for Directions: 17.8 miles, turn left onto Red Rd and travel for 7.32 miles, turn right (Mills Ranch Rd) and travel for 7.1 miles, turn left and travel 1.2 miles to site. Release Data: Date Released: 8/14/2012 Type Release: **Produced Water** Source of Contamination: Produced Water Tank Fluid Released: 20 bbls Fluids Recovered: 19 bbls Official Communication: Name: Ike Tavarez Pat Ellis Company: COG Operating, LLC Tetra Tech Address: 550 W. Texas Ave. Ste. 1300 1910 N. Big Spring P.O. Box City: Midland Texas, 79701 Midland, Texas Phone number: (432) 686-3023 (432) 682-4559 Fax: (432) 684-7137 Email: pellis@conchoresources.com ike.tavarez@tetratech.com **Ranking Criteria** Depth to Groundwater: Site Data Ranking Score <50 ft 20 50-99 ft 10 >100 ft. 0 0 WellHead Protection: Ranking Score Site Data Water Source <1,000 ft., Private <200 ft. 20 Water Source >1,000 ft., Private >200 ft. 0 Surface Body of Water: Ranking Score Site Data <200 ft. 20 200 ft - 1,000 ft. 10 >1,000 ft. HOBBS OCD Total Ranking Score: APR 2 3 2013 Acceptable Soil RRAL (mg/kg) Total BTEX Benzene **TPH** RECEIVED 10 50 5,000



April 17, 2013

HOBBS OCD

APR 2 3 2013

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

RECEIVED

Re:

Closure Report for the COG Operating LLC., Prohibition Federal Unit #2 SWD, Unit K, Section 11, Township 22 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Prohibition Federal Unit #2 SWD, Unit K, Section 11, Township 22 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.40408°, W 103.64719°. 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 August 14, 2012, and released approximately twenty (20) barrels of produced water from the water tank with nineteen (19) barrels of standing fluids recovered. The spill was completely contained inside the firewalls of the tank battery and measured approximately 20' x 85'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 11. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 350' below surface. The USGS and the New Mexico State Engineers have wells listed in Section 14 at depths to groundwater of 382' and 350', respectively. The average depth to groundwater map 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 5,000 mg/kg.

Soil Assessment and Analytical Results

On September 6, 2012, Tetra Tech personnel inspected and sampled the spill area. Four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, the area of AH-4 showed elevated concentrations above the RRAL for TPH and BTEX at a depth of 0 to 1.0'. The TPH concentration declined below the RRAL at 1.5' below surface, but the total BTEX concentration of 76.7 mg/kg was not vertically defined. Auger holes (AH-1, AH-2 and AH-3) showed elevated chloride concentrations and AH-1 and AH-2 were not vertically defined, with bottom hole samples of 9,550 mg/kg (2-2.5') and 6,360 mg/kg (1-1.5'), respectively. Auger hole (AH-3) did show a significant decline with depth to 617 mg/kg at 2-2.5' below surface.

Closure Activities

Prior to excavating the impacted areas, two (2) backhoe trenches were installed in the areas of AH-1 and AH-2 to attempt to vertically define the chloride impact. The sampling results are shown in Table 1. Referring to Table 1, the area of AH-2 did not show a significant chloride impact to the area. However, the area of AH-1 showed elevated chlorides down to 8.0' below surface. Deeper samples were not collected due to the backhoe limitation.

Based on the field data, the impacted areas were excavated to depth of 1.5' to 3.0' below surface. Deeper excavation could not be achieved due to equipment and safety concerns. As such, Tetra Tech excavated the soils to the maximum extent practicable and any remaining soils were deferred until abandonment of the facility.



The excavation areas and depths are highlighted in Table 1 and shown on Figure 4. Once excavated, a confirmation sample was collected from the area of AH-4 for BTEX analysis and showed concentrations below the RRAL. In addition, the area of AH-1 was excavated to a depth of 3.0' below surface and placed clay material in the excavation bottom to cap the remaining impact. Prior to backfilling the excavation, the BLM and NMOCD were contacted and met onsite to discuss the remedial activities. Both agencies approved the backfilling with no further sampling or drilling.

Approximately 20 cubic yards were transported offsite for proper disposal. Once final excavation depths were achieved and approved, the site will be backfilled with clean material and brought to grade.

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

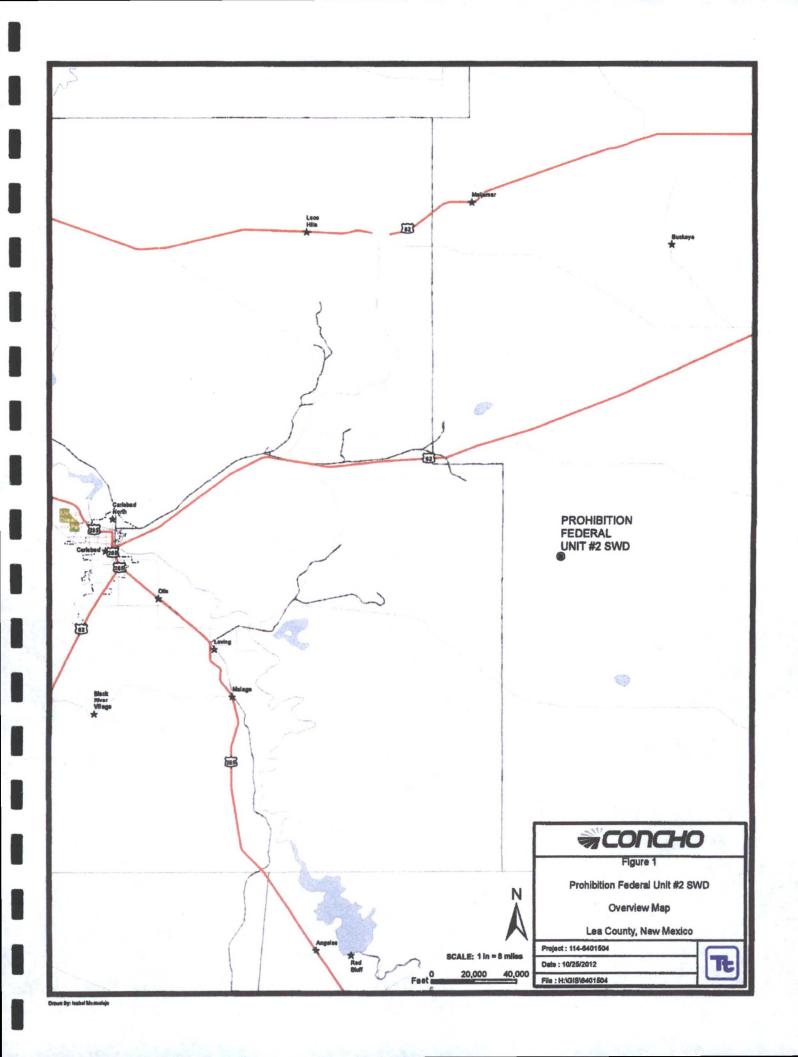
Respectfully submitted,

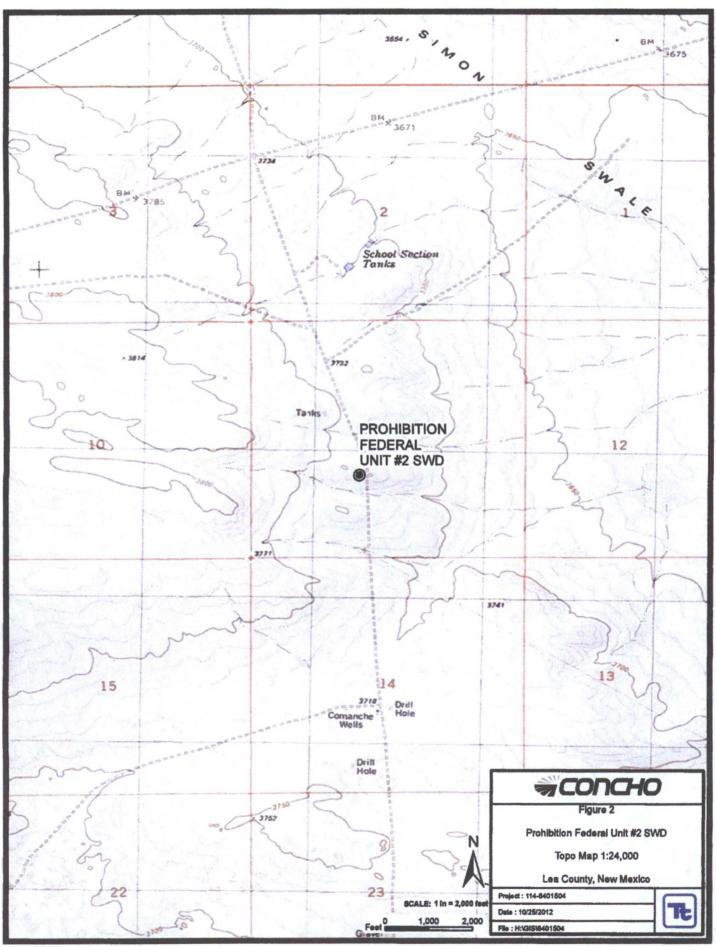
TETRA TECH

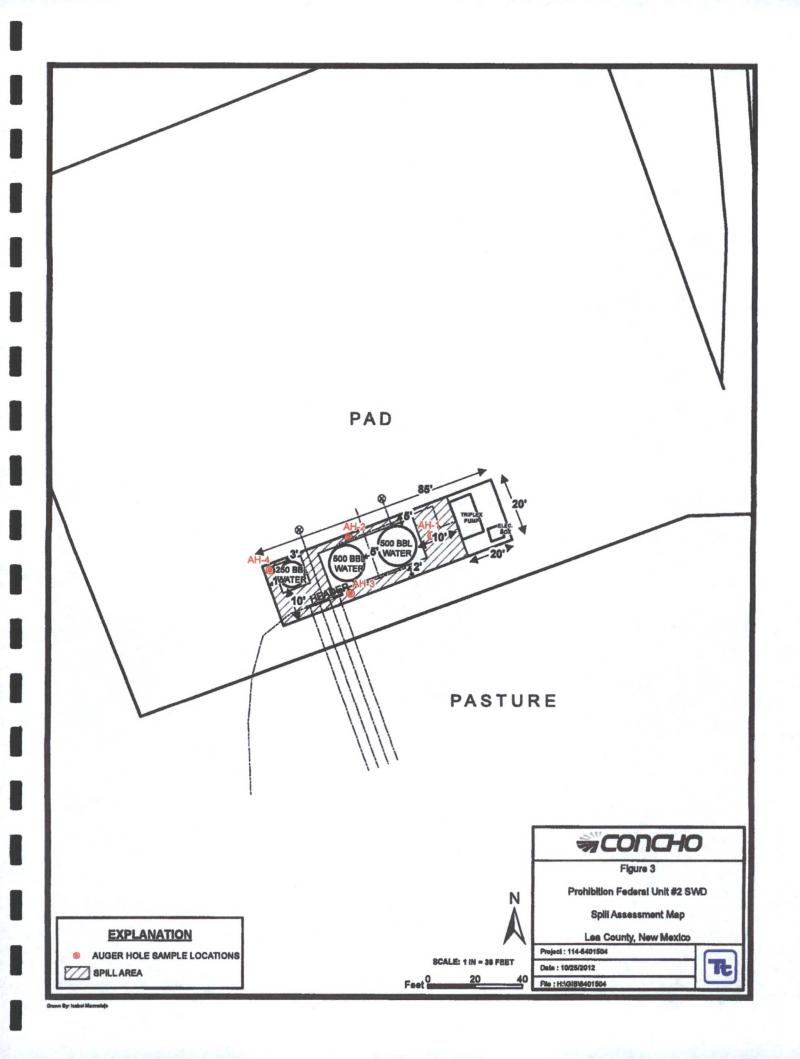
Ike Tavarez, PG

Senior Project Manager

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









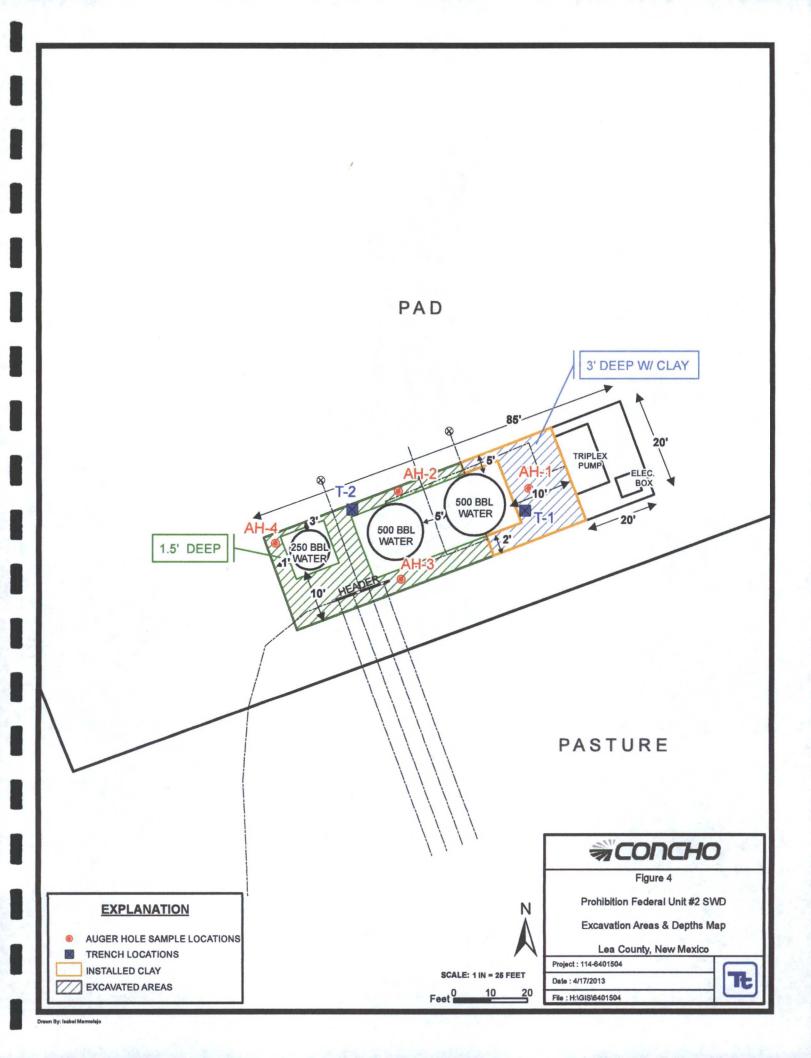


Table 1
COG Operating LLC.
Prohibition Federal #2 Salt Water Disposal
Lea County, New Mexico

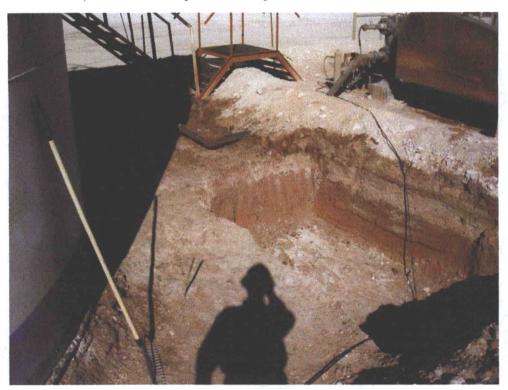
												The Real Property lies and the least lies and the lies and the least lies and the lies and the least lies and the lies and t	Statement of the last of the l
9		Sample	Soil	Soil Status		TPH (mg/kg)	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
Sample ID	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	9/6/2012	0-1		×	1,010	<50.0	1,010	<1.00	6.70	3.57	16.4	26.7	19,100
	=	1-1.5		×	-					•			10,900
	Ξ	2-2.5		×			•		•		•	•	9,550
Trench-1	12/11/2012	2			•	•		•	•	-		•	4.380
excavated 3' deep	=	4	×			1			,	-			2,140
	=	9	×					,				,	2,500
	=	∞	×				-					,	2,400
AH-2	9/6/2012	0-1		×	1,050	<50.0	1,050	<1.00	4.20	4.22	15.6	24.0	18,000
	=	1-1.5		×			-			-	•		6,360
Trench-2	12/11/2012	-	×	- 4				,					825
	=	က	×		١,	1	1	·		1		-	305
	=	2	×		,	1		,	1		1	1	175
AH-3	9/6/2012	0-1		×	22.9	<50.0	22.9	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	4,340
	=	1-1.5		×	•	•		1	•		•	•	1,560
	Ξ	2-2.5	×			,	-				,		617
AH-4	9/6/2012	0-1		×	3,530	2,280	5,810	3.91	44.2	24.0	83.2	155	<20.0
	=	1-1.5		×	360	60.7	421	5.08	24.9	12.4	34.3	76.7	74.1
CS-1 Composite	12/11/2012	1.5 bottom	×					<0.0400	4.93	<0.400	11.8	16.7	

(-) Not Analyzed

Clay Cap

TETRATECH

COG Operating LLC Prohibition Federal Unit #2 SWD Eddy County, New Mexico



Area of AH-1 excavation



Area of AH-1 clay cap

TETRA TECH

COG Operating LLC Prohibition Federal Unit #2 SWD Eddy County, New Mexico



Area of AH-2 excavation



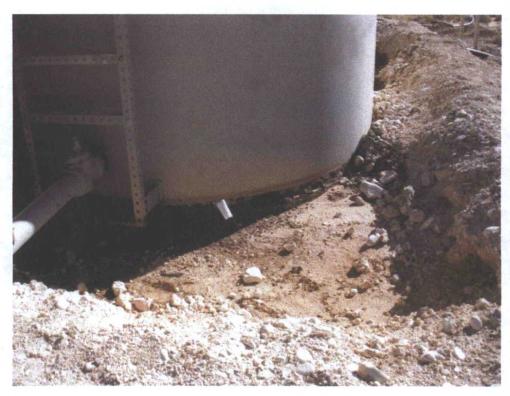
Area of AH-3 excavation

TETRATECH

COG Operating LLC Prohibition Federal Unit #2 SWD Eddy County, New Mexico



Excavation area SW of facility, near header



Area of AH-4 excavation

Water Well Data Average Depth to Groundwater (ft) COG - Prohibition Federal Unit #2 SWD Lea County, New Mexico

	21 9	South	3	1 East			21	South		2 East			21	South	;	33 East	
	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2 79	1
	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	111	12
8	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15	14	13
9	20	630 21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
0	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25
1	32	33 SITE	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36
Name of Street	22.5	South	3	1 East			22	South	-	2 East			22	South	-	33 East	
	5	4]3	2	1	6	5	4	3	2	1	6	5	4	3	2	1
	8	9	10	11	12	7	8	9	10	11 SITE	12	7	8	9	10	11	12
8	17	16 448	15	14	13	18	17	16	15	14 382	13	18	17	16	15	14	13
9	20	21	22	23	24	19 (S) 280	20	21	22	23	24	19	20	21	22	23	24
30	29 413	28 444	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25
31	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36
olada marriadora	23 5	South	3	1 East		-	23	South	3	2 East			23	South	3	33 East	
35	5 354	168	3	2	1	6	5	4	3	2	1	6	5	. 4	3	2	1
140	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
8	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15	14	13
19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
30	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25
	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36



USGS Home Contact USGS Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:
Groundwater

Geographic Area:

United States

GO

News - updated September 2012

Groundwater levels for the Nation

Search Results -- 1 sites found

Search Criteria

Agency code = usgs site_no list =

322314103384301

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 322314103384301 22S.32E.14.32322

Available data for this site

Groundwater: Field measurements

GO

Lea County, New Mexico
Hydrologic Unit Code -Latitude 32°23'23", Longitude 103°38'53" NAD27
Land-surface elevation 3,717.00 feet above NGVD29
The depth of the well is 435 feet below land surface.
This well is completed in the Santa Rosa Sandstone
(231SNRS) local aquifer.

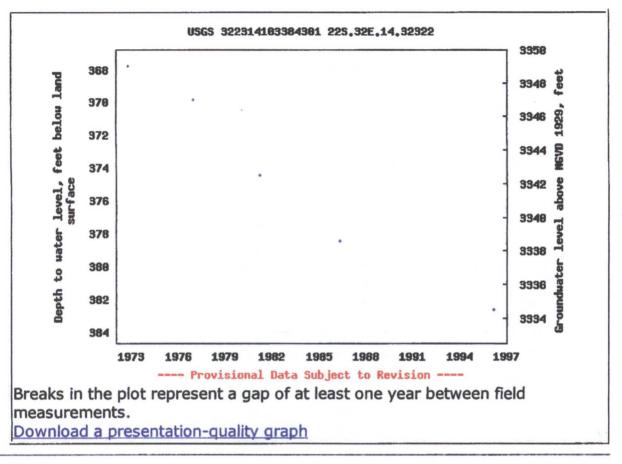
Output formats

Table of data

Tab-separated data

Graph of data

Reselect period



Questions about sites/data?
Feedback on this web site
Automated retrievals
Help

Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility

Plug-Ins

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Privacy

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U.S. Department of the Interior | U.S. Geological Survey

Title: Groundwater for USA: Water Levels

URL: http://nwis.waterdata.usgs.gov/nwis/gwlevels?

USA.gov



Page Contact Information: USGS Water Data Support Team

Page Last Modified: 2012-10-24 11:05:49 EDT

0.33 0.31 nadww01



New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right

(R=POD has been replaced, O=orphaned,

C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number

Code Subbasin County 64 16 4 Sec Tws Rng

Depth Depth Water Y Well WaterColumn

C 02096

ED 2 3 14 22S 32E

627204 3584464*

435 360

C 2 2 3 14 22S 32E

627303 3584563* 540

340 200

C 02821

Average Depth to Water: 360 feet

Minimum Depth: 340 feet

Maximum Depth: 360 feet

Record Count: 2

PLSS Search:

Section(s): 14

Township: 22S

Range: 32E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability for any particular purpose of the data.

WATER COLUMN/ AVERAGE **DEPTH TO WATER**

Report Date: September 26, 2012 Work Order: 12091203 Page Number: 1 of 3

Summary Report

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX 79705

Report Date: September 26, 2012

Work Order: 12091203

Project Location: NM

Project Name: COG/Prohibition Fed. #2 SWD

Project Number: 114-6401504

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
308953	AH-1 0-1'	soil	2012-09-06	00:00	2012-09-11
308954	AH-1 1-1.5'	soil	2012-09-06	00:00	2012-09-11
308955	AH-1 2-2.5'	soil	2012-09-06	00:00	2012-09-11
308956	AH-2 0-1'	soil	2012-09-06	00:00	2012-09-11
308957	AH-2 1-1.5'	soil	2012-09-06	00:00	2012-09-11
308958	AH-3 0-1'	soil	2012-09-06	00:00	2012-09-11
308959	AH-3 1-1.5'	soil	2012-09-06	00:00	2012-09-11
308960	AH-3 2-2.5'	soil	2012-09-06	00:00	2012-09-11
308961	AH-4 0-1'	soil	2012-09-06	00:00	2012-09-11
308962	AH-4 1-1.5'	soil	2012-09-06	00:00	2012-09-11

		B	TEX		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)
308953 - AH-1 0-1'	<1.00 Qs	6.70 Qs	3.57 Qs	16.4 Qs	< 50.0	1010
308956 - AH-2 0-1'	$< 1.00 _{ m Qs}$	4.20 Qs	4.22 Qs	15.6 Qs	< 50.0	1050
308958 - AH-3 0-1'	$< 0.0200 _{\mathrm{Qs}}$	$< 0.0200 _{\mathrm{Qs}}$	$< 0.0200 _{\mathrm{Qs}}$	<0.0200 Qs	< 50.0	22.9
308961 - AH-4 0-1'	$3.91 _{\mathrm{Qs}}$	44.2 Qs	24.0 Qs	83.2 Qs	2280	3530
308962 - AH-4 1-1.5'	5.08 H	24.9	12.4	34.3	60.7	360 н

Sample: 308953 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		19100	mg/Kg	4

Sample: 308954 - AH-1 1-1.5'

	mber 26, 2012	Work Order: 12091203	Page	Number: 2 of 3
Param	Flag	Result	Units	RL
Chloride		10900	mg/Kg	4
Sample: 308955 -	· AH-1 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		9550	mg/Kg	4
Sample: 308956 -	· AH-2 0-1'			
Param	Flag	Result	Units	RL
Chloride		18000	mg/Kg	4
Sample: 308957 -	· AH-2 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		6360	mg/Kg	4
Param	• AH-3 0-1' Flag	Result	Units	
Sample: 308958 - Param Chloride		Result 4340	Units mg/Kg	RL 4
Param	Flag			
Param Chloride Sample: 308959 -	Flag	4340 Result	mg/Kg Units	4 RL
Param Chloride Sample: 308959 -	Flag - AH-3 1-1.5'	4340	mg/Kg	4 RL
Param Chloride Sample: 308959 - Param Chloride	Flag - AH-3 1-1.5' Flag	4340 Result	mg/Kg Units	4 RL
Param Chloride Sample: 308959 - Param Chloride Sample: 308960 - Param	Flag - AH-3 1-1.5' Flag	Result 1560 Result	mg/Kg Units mg/Kg Units	RL 4
Param Chloride Sample: 308959 - Param Chloride Sample: 308960 - Param	Flag AH-3 1-1.5' Flag AH-3 2-2.5'	4340 Result 1560	mg/Kg Units mg/Kg	RL 4
Param Chloride Sample: 308959 - Param Chloride Sample: 308960 - Param Chloride	Flag - AH-3 1-1.5' Flag - AH-3 2-2.5' Flag	Result 1560 Result	mg/Kg Units mg/Kg Units	RL 4
Param Chloride	Flag - AH-3 1-1.5' Flag - AH-3 2-2.5' Flag	Result 1560 Result	mg/Kg Units mg/Kg Units	RL 4

Work Order: 12091203

Page Number: 3 of 3

Sample: 308962 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		74.1	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1

Texas 79922 El Paso. Midland. Texas 79703 Texas 75006 Carroliton.

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(BioAquatic) 2501 Mayes Rd., Suite 100 972-242-7750 E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

DBE NELAP DoD LELAP HUB NCTRCA Kansas Oklahoma ISO 17025

Analytical and Quality Control Report (Corrected Report)

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX, 79705

Report Date: September 26, 2012

Work Order:

Project Location: NM

Project Name:

COG/Prohibition Fed. #2 SWD

Project Number: 114-6401504

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
308953	AH-1 0-1'	soil	2012-09-06	00:00	2012-09-11
308954	AH-1 1-1.5'	soil	2012-09-06	00:00	2012-09-11
308955	AH-1 2-2.5'	soil	2012-09-06	00:00	2012-09-11
308956	AH-2 0-1'	soil	2012-09-06	00:00	2012-09-11
308957	AH-2 1-1.5'	soil	2012-09-06	00:00	2012-09-11
308958	AH-3 0-1'	soil	2012-09-06	00:00	2012-09-11
308959	AH-3 1-1.5'	soil	2012-09-06	00:00	2012-09-11
308960	AH-3 2-2.5'	soil	2012-09-06	00:00	2012-09-11
308961	AH-4 0-1'	soil	2012-09-06	00:00	2012-09-11
308962	AH-4 1-1.5'	soil	2012-09-06	00:00	2012-09-11

Report Corrections (Work Order 12091203)

 \bullet Re-issued report due to a sample comment added on sample 308962 for GRO and BTEX. 9-26-12

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 30 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

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Case Narrative

Samples for project COG/Prohibition Fed. #2 SWD were received by TraceAnalysis, Inc. on 2012-09-11 and assigned to work order 12091203. Samples for work order 12091203 were received intact at a temperature of 2.1 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	80534	2012-09-20 at 16:45	95043	2012-09-20 at 16:45
BTEX	S 8021B	80605	2012-09-18 at 09:18	95117	2012-09-24 at 09:18
Chloride (Titration)	SM 4500-Cl B	80432	2012-09-17 at 11:26	94941	2012-09-18 at 18:11
TPH DRO - NEW	S 8015 D	80415	2012-09-17 at 08:00	94898	2012-09-18 at 08:30
TPH DRO - NEW	S 8015 D	80512	2012-09-18 at 08:00	95015	2012-09-20 at 15:10
TPH DRO - NEW	S 8015 D	80556	2012-09-18 at 08:00	95065	2012-09-24 at 08:36
TPH GRO	S 8015 D	80534	2012-09-20 at 16:45	95048	2012-09-20 at 16:45
TPH GRO	S 8015 D	80605	2012-09-18 at 09:18	95118	2012-09-18 at 09:18

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 12091203 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.

114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 6 of 30

Analytical Report

Sample: 308953 - AH-1 0-1'

Laboratory: Midland

Analysis:

BTEX

95043

Analytical Method: Date Analyzed:

S 8021B

Prep Method: S 5035 2012-09-20

Analyzed By: YG Prepared By: YG

QC Batch: Prep Batch: 80534

Sample Preparation:

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	Qs	1	<1.00	mg/Kg	50	0.0200
Toluene	Qs	1	6.70	mg/Kg	50	0.0200
Ethylbenzene	Qs	1	3.57	mg/Kg	50	0.0200
Xvlene	Os	1	16.4	mg/Kg	50	0.0200

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			0.100	mg/Kg	1	0.100	100	70 - 130
4-Bromofluorobenzene (4-BFB)			0.100	mg/Kg	1	0.100	100	70 - 130

Sample: 308953 - AH-1 0-1'

Laboratory:

Midland

Analysis: Chloride (Titration) 94941

QC Batch: Prep Batch: 80432 Analytical Method:

SM 4500-Cl B 2012-09-18 Date Analyzed: 2012-09-17 Sample Preparation:

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

RL Flag Cert Result Units Dilution RLParameter Chloride 19100 mg/Kg 10 4.00

Sample: 308953 - AH-1 0-1'

Laboratory:

Prep Batch:

Midland

80512

Analysis: TPH DRO - NEW QC Batch: 95015

Analytical Method: Date Analyzed: Sample Preparation:

S 8015 D 2012-09-20 2012-09-18 Prep Method: N/A Analyzed By: CW Prepared By: CW

RLUnits Dilution RL Parameter Flag Cert Result < 50.0 50.0 DRO mg/Kg 1 U

114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 7 of 30

NM

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			121	mg/Kg	1	100	121	70 - 130

Sample: 308953 - AH-1 0-1'

Laboratory: Analysis: QC Batch:

Prep Batch:

Midland TPH GRO

95048 80534

Analytical Method: Date Analyzed:

Sample Preparation:

S 8015 D

2012-09-20

Prep Method: S 5035

Analyzed By: YG Prepared By: YG

RL

Parameter Flag Cert Result Units Dilution RLGRO 1010 mg/Kg 50 4.00 1

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0942	mg/Kg	50	0.100	94	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0858	mg/Kg	50	0.100	86	70 - 130

Sample: 308954 - AH-1 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 94941 Prep Batch: 80432 Analytical Method: SM 4500-Cl B Date Analyzed: 2012-09-18

Sample Preparation: 2012-09-17 Prep Method: N/A Analyzed By: AR Prepared By: AR

Cert

RL Parameter Flag Result Units Dilution RLChloride 10900 10 4.00 mg/Kg

Sample: 308955 - AH-1 2-2.5'

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 94941 Prep Batch: 80432

Analytical Method: SM 4500-Cl B Date Analyzed: 2012-09-18 Sample Preparation: 2012-09-17

Prep Method: N/AAnalyzed By: AR. Prepared By: AR.

continued ...

114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 8 of 30

NM

sample 308955 continued ...

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			9550	mg/Kg	10	4.00

Sample: 308956 - AH-2 0-1'

80534

Laboratory:

Prep Batch:

Midland

Analysis: BTEX QC Batch: 95043

Analytical Method: Date Analyzed:

Sample Preparation:

S 8021B 2012-09-20 Prep Method: S 5035 Analyzed By: YGPrepared By:

YG

RLParameter Flag Cert Result Units Dilution RLBenzene mg/Kg < 1.00 50 0.0200 Qs 1 Toluene 4.20 mg/Kg 50 0.0200 Qs 1 Ethylbenzene 4.22 mg/Kg 50 0.0200 Qs 1 Xylene 15.6 mg/Kg50 0.0200Qs

					Spike	Percent	Recovery
Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
		0.100	mg/Kg	1	0.100	100	70 - 130
		0.109	mg/Kg	1	0.100	109	70 - 130
	Flag	Flag Cert	0.100	0.100 mg/Kg	0.100 mg/Kg 1	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Flag Cert Result Units Dilution Amount Recovery 0.100 mg/Kg 1 0.100 100

Sample: 308956 - AH-2 0-1'

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 94941 Prep Batch: 80432

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2012-09-18

2012-09-17

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

RLParameter Flag Cert Result Units Dilution RL Chloride 18000 mg/Kg 10 4.00

Report Date: September 26, 2012 Work Order: 12091203 Page Number: 9 of 30 COG/Prohibition Fed. #2 SWD 114-6401504 NMSample: 308956 - AH-2 0-1' Laboratory: Midland TPH DRO - NEW Analytical Method: Analysis: S 8015 D Prep Method: N/A QC Batch: 95015 Date Analyzed: 2012-09-20 Analyzed By: CW 80512 Sample Preparation: Prep Batch: 2012-09-18 Prepared By: CW RL Parameter Flag Cert Result Units Dilution RL DRO < 50.0 mg/Kg 50.0 U Spike Percent Recovery Flag Result Units Dilution Surrogate Cert Amount Recovery Limits 118 mg/Kg 100 70 - 130 n-Tricosane 118 1

Sample: 308956 - AH-2 0-1'

Laboratory: Midland

Analysis: TPH GRO QC Batch: 95048 Prep Batch: 80534

Analytical Method: S 8015 D Date Analyzed:

2012-09-20 Analyzed By: YG Sample Preparation: Prepared By: YG

RL Parameter Flag Cert Result Units Dilution RL GRO 1050 mg/Kg 50 4.00 Spike Percent Recovery

Flag Units Dilution Amount Surrogate Cert Result Recovery Limits Trifluorotoluene (TFT) 0.0949 mg/Kg 50 0.100 95 70 - 130 4-Bromofluorobenzene (4-BFB) 0.0828 50 0.100 83 70 - 130 mg/Kg

Sample: 308957 - AH-2 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 94941

Prep Batch: 80432 Analytical Method: SM 4500-Cl B Date Analyzed: 2012-09-18 Sample Preparation: 2012-09-17

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

Prep Method: S 5035

RLFlag Cert Result Dilution RLParameter Units Chloride 6360 mg/Kg 10 4.00 Report Date: September 26, 2012 114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 10 of 30 NM

Sample: 308958 - AH-3 0-1'

Laboratory: Midland

Analysis: BTEX QC Batch: 95043 Prep Batch: 80534 Analytical Method: S 8021B Date Analyzed: 2012-09-20 Sample Preparation:

Prep Method: S 5035 R-09-20 Analyzed By: YG Prepared By: YG

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	Qs,U	1	< 0.0200	mg/Kg	1	0.0200
Toluene	$Q_{\mathcal{B}}, U$	1	< 0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qs,U	1	< 0.0200	mg/Kg	1	0.0200
Xylene	Qs,U	1	< 0.0200	mg/Kg	1	0.0200

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.99	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			2.29	mg/Kg	1	2.00	114	70 - 130

Sample: 308958 - AH-3 0-1'

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 94941 Prep Batch: 80432 Analytical Method: SM 4500-Cl B Date Analyzed: 2012-09-18 Sample Preparation: 2012-09-17

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

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			4340	mg/Kg	10	4.00

Sample: 308958 - AH-3 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW QC Batch: 94898 Prep Batch: 80415 $\begin{array}{lll} \mbox{Analytical Method:} & \mbox{S 8015 D} \\ \mbox{Date Analyzed:} & 2012-09-18 \\ \mbox{Sample Preparation:} & 2012-09-17 \end{array}$

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

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO		1	< 50.0	mg/Kg	1	50.0

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane			121	mg/Kg	1	100	121	70 - 130

114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 11 of 30

NM

Sample: 308958 - AH-3 0-1'

Laboratory: Analysis:

Midland TPH GRO

QC Batch: Prep Batch:

95048 80534

Analytical Method:

Sample Preparation:

Date Analyzed:

Cert

1

S 8015 D

2012-09-20

Prep Method: S 5035 Analyzed By:

YG Prepared By: YG

Flag Parameter GRO

RL Result 22.9

Units Dilution mg/Kg

RL4.00

Spike Percent Recovery Flag Units Dilution Cert Result Amount Recovery Limits Surrogate Trifluorotoluene (TFT) 70 - 130 0.0962 mg/Kg 1 0.100 96 4-Bromofluorobenzene (4-BFB) 0.115mg/Kg 1 0.100 115 70 - 130

Sample: 308959 - AH-3 1-1.5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B

Prep Method: N/A

QC Batch: 94941 Prep Batch: 80432 Sample Preparation:

2012-09-18

Analyzed By: AR Prepared By: AR

2012-09-17

RL Result Dilution Parameter Flag Cert Units RL 1560 4.00 Chloride mg/Kg

Sample: 308960 - AH-3 2-2.5'

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 94941

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

Prep Batch: 80432

Date Analyzed: Sample Preparation:

2012-09-18 2012-09-17 Analyzed By: AR Prepared By: AR

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

114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 12 of 30

Sample: 308961 - AH-4 0-1'

Laboratory: Analysis:

Midland

BTEX

Analytical Method:

S 8021B 2012-09-20 Prep Method: S 5035

QC Batch:

95043

Date Analyzed:

Analyzed By:

YG

Prep Batch: 80534

Sample Preparation:

Prepared By:

YG

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	Qs	1	3.91	mg/Kg	50	0.0200
Toluene	Qs	1	44.2	mg/Kg	50	0.0200
Ethylbenzene	Q_8	1	24.0	mg/Kg	50	0.0200
Xylene	Qs	1	83.2	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0990	mg/Kg	1	0.100	99	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0800	mg/Kg	1	0.100	80	70 - 130

Sample: 308961 - AH-4 0-1'

Laboratory:

Midland

Analysis: Chloride (Titration)

QC Batch: 94941 Prep Batch: 80432 Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-09-18

Prep Method: N/A Analyzed By: AR

Sample Preparation: 2012-09-17 Prepared By: AR

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

Sample: 308961 - AH-4 0-1'

Laboratory: Midland

Analysis: QC Batch:

TPH DRO - NEW

94898 Prep Batch: 80415 Analytical Method: Date Analyzed:

S 8015 D 2012-09-18 Sample Preparation: 2012-09-17 Prep Method: N/A Analyzed By: CW Prepared By:

CW

RL

Parameter Flag Cert Result Units Dilution RLDRO 2280 mg/Kg 5 50.0 1

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane			104	mg/Kg	5	100	104	70 - 130

114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 13 of 30

NM

Sample: 308961 - AH-4 0-1'

Laboratory: Analysis:

Midland

TPH GRO

Analytical Method:

S 8015 D

Prep Method: S 5035

RL

4.00

QC Batch: Prep Batch: 80534

95048

Date Analyzed: Sample Preparation: 2012-09-20

Analyzed By: YG Prepared By: YG

RL

Parameter Flag Cert Units Dilution Result GRO 3530 50 mg/Kg

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			0.0948	mg/Kg	50	0.100	95	70 - 130
4-Bromofluorobenzene (4-BFB)			0.0823	mg/Kg	50	0.100	82	70 - 130

Sample: 308962 - AH-4 1-1.5'

Laboratory: Midland

Analysis: QC Batch:

Prep Batch:

BTEX 95117 80605

Analytical Method: Date Analyzed:

Sample Preparation:

S 8021B 2012-09-24 Prep Method: S 5035 Analyzed By:

YG Prepared By: YG

Parameter			RL			
	Flag	Cert	Result	Units	Dilution	RL
Benzene	н	1	5.08	mg/Kg	20	0.0200
Toluene		1	24.9	mg/Kg	20	0.0200
Ethylbenzene		1	12.4	mg/Kg	20	0.0200
Xylene		1	34.3	mg/Kg	20	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.103	mg/Kg	1	0.100	103	70 - 130
4-Bromofluorobenzene (4-BFB)			0.115	mg/Kg	1	0.100	115	70 - 130

Sample: 308962 - AH-4 1-1.5'

80432

Laboratory:

Prep Batch:

Midland

Chloride (Titration) Analysis: QC Batch: 94941

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2012-09-18

2012-09-17

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

continued ...

Report Date 114-6401504	_	oer 26, 20	012	Work Order: 12091203 COG/Prohibition Fed. #2 SWD					Page Number: 14 of 30 NM		
sample 3089	62 continu	$ed \dots$									
						RL					
Parameter			Flag	Cert		Result	Ur	its	Dilution	RL	
						RL					
Parameter			Flag	Cert		Result		nits	Dilution	RL	
Chloride						74.1	mg/	Kg	5	4.00	
Sample: 30 Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DR 95065 80556			Dat	alytical Mo se Analyze aple Prepa	ed:	S 8015 D 2012-09-24 2012-09-18		Prep Met Analyzed Prepared	By: CW	
D .			T)	<i>a</i> .		RL	**		D.1	D.F.	
Parameter			Flag	Cert		Result		its	Dilution	RL	
DRO				1		60.7	mg/	Kg	1	50.0	
Surrogate		Flag	Cert	Result	Units	D	ilution A	Spike Amount	Percent Recovery	Recovery Limits	
n-Tricosane	Qsr	Qsr	CCIO	152	mg/Kg		1	100	152	70 - 130	
Sample: 30 Laboratory: Analysis: QC Batch: Prep Batch:	8962 - Al Midland TPH GR 95118 80605		.5'	Date An	al Method alyzed: Preparatio	2012	15 D 2-09-18		Prep Metho Analyzed B Prepared B	y: YG	
				-	-	RL					
Parameter			Flag	Cert]	Result	Un	its	Dilution	RL	
GRO			Н	1		360	mg/	Kg	50	4.00	
Surrogate	(5)		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits	
Trifluorotolu					0.0977	mg/Kg		0.100	98	70 - 130	
4-Bromofluor	robenzene	(4-BFB)			0.0896	mg/Kg	1	0.100	90	70 - 130	

Report Date: September 26, 2012 114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 15 of 30 NM

Method Blanks

Method Blank (1)

QC Batch: 94898

QC Batch: 94898

DRO

Date Analyzed: 2012-09-18 Analyzed By: CW

Prep Batch: 80415

QC Preparation:

2012-09-17

Prepared By:

Cert Parameter Flag

Result Units < 9.09 mg/Kg

MDL

Result

< 9.09

MDL

50

RL

Spike Percent Recovery Dilution Surrogate Flag Cert Result Units Amount Recovery Limits 70 - 130 n-Tricosane 111 mg/Kg 1 100 111

Method Blank (1)

QC Batch: 94941

QC Batch: 94941 Prep Batch: 80432 Date Analyzed: 2012-09-18 QC Preparation: 2012-09-17 Analyzed By: AR Prepared By: AR

MDL

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

Method Blank (1)

QC Batch: 95015

QC Batch: 95015 Prep Batch: 80512

Parameter

DRO

Date Analyzed: QC Preparation:

Analyzed By: CW 2012-09-20 2012-09-18 Prepared By:

Flag

Units RL mg/Kg 50

Spike Percent Recovery Surrogate Flag Cert Result Units Dilution Amount Recovery Limits 100 70 - 130 n-Tricosane 116 mg/Kg 116

Cert

Report Date: September 26, 2012 114-6401504 Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 16 of 30 NM

Method Blank (1)

QC Batch: 95043

QC Batch: 95043 Prep Batch: 80534 Date Analyzed: 2012-09-20 QC Preparation: 2012-09-20

Analyzed By: YG Prepared By: YG

			MDL		
Parameter	Flag	Cert	Result	Units	RL
Benzene		1	< 0.00470	mg/Kg	0.02
Toluene		1	< 0.00980	mg/Kg	0.02
Ethylbenzene		1	< 0.00500	mg/Kg	0.02
Xylene		1	< 0.0170	mg/Kg	0.02

					Spike	Percent	Recovery
Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
		0.103	mg/Kg	1	0.100	103	70 - 130
		0.108	mg/Kg	1	0.100	108	70 - 130
	Flag	Flag Cert	0.103	0.103 mg/Kg	0.103 mg/Kg 1	Flag Cert Result Units Dilution Amount 0.103 mg/Kg 1 0.100	0.103 mg/Kg 1 0.100 103

Method Blank (1)

QC Batch: 95048

QC Batch: 95048 Prep Batch: 80534 Date Analyzed: 2012-09-20 QC Preparation: 2012-09-20

Analyzed By: YG Prepared By: YG

			MDL		
Parameter	Flag	Cert	Result	Units	RL
GRO		1	<1.22	mg/Kg	4

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			0.101	mg/Kg	1	0.100	101	70 - 130
4-Bromofluorobenzene (4-BFB)			0.103	mg/Kg	1	0.100	103	70 - 130

Method Blank (1)

QC Batch: 95065

QC Batch: 95065 Prep Batch: 80556 Date Analyzed: 2012-09-24 QC Preparation: 2012-09-18 Analyzed By: CW Prepared By: CW

			MDL		
Parameter	Flag	Cert	Result	Units	RL
DRO		1	< 9.09	mg/Kg	50

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	70 - 130

Method Blank (1)

QC Batch: 95117

QC Batch: 95117 Prep Batch: 80605 Date Analyzed: 2012-09-24 QC Preparation: 2012-09-18 Analyzed By: YG Prepared By: YG

		MDL									
Parameter	Flag	Cert	Result	Units	RL						
Benzene		1	< 0.00470	mg/Kg	0.02						
Toluene		1	< 0.00980	mg/Kg	0.02						
Ethylbenzene		1	< 0.00500	mg/Kg	0.02						
Xylene		1	< 0.0170	mg/Kg	0.02						

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			2.12	mg/Kg	1	2.00	106	70 - 130
4-Bromofluorobenzene (4-BFB)			2.18	mg/Kg	1	2.00	109	70 - 130

Method Blank (1)

QC Batch: 95118

QC Batch: 95118 Prep Batch: 80605 Date Analyzed: 2012-09-18 QC Preparation: 2012-09-18 Analyzed By: YG Prepared By: YG

			MDL		
Parameter	Flag	Cert	Result	Units	RL
GRO		1	<1.22	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.02	mg/Kg	1	2.00	101	70 - 130
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	70 - 130

114-6401504

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NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:

94898

Date Analyzed:

2012-09-18

Analyzed By: CW

Prep Batch: 80415

QC Preparation:

2012-09-17

Prepared By: CW

			LCS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1	293	mg/Kg	1	250	< 9.09	117	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	\mathbf{F}	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	289	mg/Kg	1	250	< 9.09	116	70 - 130	1	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	110	103	mg/Kg	1	100	110	103	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch:

94941

Date Analyzed:

2012-09-18

Analyzed By: AR

Prepared By: AR

Prep Batch: 80432

QC Preparation: 2012-09-17

LCS Spike Matrix Rec. C Result Units Dil. Amount Result Limit Param Rec. Chloride 2610 mg/Kg 2500 < 3.85 104 85 - 115

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2690	mg/Kg	1	2500	< 3.85	108	85 - 115	3	20

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

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Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 19 of 30 NM

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 80512

95015

Date Analyzed:

2012-09-20

Analyzed By: CW

QC Preparation: 2012-09-18 Prepared By: CW

LCS Spike Matrix Rec. C Param Result Units Dil. Amount Result Rec. Limit DRO 295 mg/Kg 250 < 9.09118 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 \mathbf{F} C Result Units Dil. Amount Result Rec. Limit RPD Limit DRO 288 mg/Kg 250 < 9.09 115 70 - 130 2 20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	117	118	mg/Kg	1	100	117	118	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:

95043 80534 Date Analyzed: QC Preparation:

2012-09-20 2012-09-20 Analyzed By: YG Prepared By: YG

Рамана	T.	0	LCS	II-:4-	D:I	Spike	Matrix	D	Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	1.90	mg/Kg	1	2.00	< 0.00470	95	70 - 130
Toluene		1	1.91	mg/Kg	1	2.00	< 0.00980	96	70 - 130
Ethylbenzene		1	1.93	mg/Kg	1	2.00	< 0.00500	96	70 - 130
Xylene		1	5.83	mg/Kg	1	6.00	< 0.0170	97	70 - 130

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

Param	F	С	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec.	RPD	RPD Limit
Benzene		1	1.88	mg/Kg	1	2.00	< 0.00470	94	70 - 130	1	20
Toluene		1	1.89	mg/Kg	1	2.00	< 0.00980	94	70 - 130	1	20
Ethylbenzene		1	1.88	mg/Kg	1	2.00	< 0.00500	94	70 - 130	3	20
Xylene		1	5.74	mg/Kg	1	6.00	< 0.0170	96	70 - 130	2	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.11	2.10	mg/Kg	1	2.00	106	105	70 - 130

continued ...

114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 20 of 30

NM

control spikes continued . . .

•	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
4-Bromofluorobenzene (4-BFB)	2.29	2.30	mg/Kg	1	2.00	114	115	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 80534

95048

Date Analyzed:

2012-09-20 QC Preparation: 2012-09-20

Analyzed By: YG

Prepared By: YG

			LCS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO		1	21.5	mg/Kg	1	20.0	<1.22	108	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	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		1	21.4	mg/Kg	1	20.0	<1.22	107	70 - 130	0	20

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

	LCS	LCSD	**	D.11	. *			Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	0.101	0.100	mg/Kg	1	0.100	101	100	70 - 130
4-Bromofluorobenzene (4-BFB)	0.109	0.110	mg/Kg	1	0.100	109	110	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch:

Prep Batch: 80556

Date Analyzed: QC Preparation:

2012-09-24 2012-09-18

Analyzed By: CW Prepared By: CW

Spike LCS Matrix Rec. F C Result Units Dil. Param Amount Result Rec. Limit 269 DRO mg/Kg 250 < 9.09 108 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	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	263	mg/Kg	1	250	< 9.09	105	70 - 130	2	20

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

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Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 21 of 30

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	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount.	Rec.	Rec.	Limit
n-Tricosane	114	116	mg/Kg	1	100	114	116	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 80605

95117

Date Analyzed: QC Preparation:

2012-09-24 2012-09-18 Analyzed By: YG

Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec.
					1				
Benzene		1	1.76	mg/Kg	1	2.00	< 0.00470	88	70 - 130
Toluene		1	1.74	mg/Kg	1	2.00	< 0.00980	87	70 - 130
Ethylbenzene		1	1.70	mg/Kg	1	2.00	< 0.00500	85	70 - 130
Xylene		1	5.16	mg/Kg	1	6.00	< 0.0170	86	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	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	1.82	mg/Kg	1	2.00	< 0.00470	91	70 - 130	3	20
Toluene		1	1.78	mg/Kg	1	2.00	< 0.00980	89	70 - 130	2	20
Ethylbenzene		1	1.77	mg/Kg	1	2.00	< 0.00500	88	70 - 130	4	20
Xylene		1	5.33	mg/Kg	1	6.00	< 0.0170	89	70 - 130	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec.
Trifluorotoluene (TFT)	2.08	2.10	mg/Kg	1	2.00	104	105	70 - 130
4-Bromofluorobenzene (4-BFB)	2.25	2.30	mg/Kg	1	2.00	112	115	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 80605

95118

Date Analyzed: QC Preparation:

2012-09-18 2012-09-18

Analyzed By: YG Prepared By: YG

Spike LCS Matrix Rec. C Param Result Units Dil. Amount Result Limit Rec. GRO 22.1 mg/Kg 1 20.0 < 1.22 110 70 - 130

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

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NM

			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		1	21.1	mg/Kg	1	20.0	<1.22	106	70 - 130	5	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.03	2.07	mg/Kg	1	2.00	102	104	70 - 130
4-Bromofluorobenzene (4-BFB)	2.20	2.19	mg/Kg	1	2.00	110	110	70 - 130

Matrix Spike (MS-1) Spiked Sample: 309041

QC Batch:

94898

Date Analyzed:

2012-09-18

Analyzed By: CW

Prep Batch: 80415

QC Preparation: 2012-09-17

Prepared By: CW

			MS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1	263	mg/Kg	1	250	< 9.09	105	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	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	268	mg/Kg	1	250	< 9.09	107	70 - 130	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec.
n-Tricosane	114	120	mg/Kg	1	100	114	120	70 - 130

Matrix Spike (MS-1) Spiked Sample: 308962

QC Batch:

94941

Date Analyzed:

2012-09-18

Analyzed By: AR

Prep Batch: 80432

QC Preparation: 2012-09-17

Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			2540	mg/Kg	5	2500	74.1	99	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result. $continued \dots$

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NM

matrix spikes continued . . .

			MSD			Spike	Matrix		Rec.		RPD
Param	F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
			MSD			Spike	Matrix		Rec.		RPD
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2650	mg/Kg	5	2500	74.1	103	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: 308956

QC Batch:

95015 Prep Batch: 80512 Date Analyzed:

2012-09-20 QC Preparation: 2012-09-18 Analyzed By: CW

Prepared By: CW

			MS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1	292	mg/Kg	1	250	< 9.09	117	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	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	262	mg/Kg	1	250	< 9.09	105	70 - 130	11	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	126	120	mg/Kg	1	100	126	120	70 - 130

Matrix Spike (MS-1) Spiked Sample: 309017

QC Batch:

95043

Prep Batch: 80534

Date Analyzed:

2012-09-20

QC Preparation: 2012-09-20

Analyzed By: YG

Prepared By: YG

Param		F	С	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	Qs	1	< 0.00470	mg/Kg	1	2.00	< 0.00470	0	70 - 130
Toluene	Qs	Qs	1	< 0.00980	mg/Kg	1	2.00	< 0.00980	0	70 - 130
Ethylbenzene	Qs	Qs	1	< 0.00500	mg/Kg	1	2.00	< 0.00500	0	70 - 130
Xylene	Qs	Qs	1	< 0.0170	mg/Kg	1	6.00	< 0.0170	0	70 - 130

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

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			MSD			Spike	Matrix		Rec.		RPD
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	< 0.00470	mg/Kg	1	2.00	< 0.00470		70 - 130		20
Toluene		1	< 0.00980	mg/Kg	1	2.00	< 0.00980		70 - 130		20
Ethylbenzene		1	< 0.00500	mg/Kg	1	2.00	< 0.00500		70 - 130		20
Xylene		1	< 0.0170	mg/Kg	1	6.00	< 0.0170		70 - 130		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)	Qsr	Qsr	0.00	0.00	mg/Kg	1	2	0		70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	0.00	0.00	mg/Kg	1	2	0		70 - 130

Matrix Spike (MS-1) Spiked Sample: 308962

QC Batch: 95065 Date Analyzed:

2012-09-24

Analyzed By: CW

Prep Batch: 80556

QC Preparation: 2012-09-18

Prepared By: CW

			MS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1	317	mg/Kg	1	250	60.7	102	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	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	306	mg/Kg	1	250	60.7	98	70 - 130	4	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	Qsr	Qsr	135	130	mg/Kg	1	100	135	130	70 - 130

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Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 25 of 30

NM

Calibration Standards

Standard (CCV-1)

QC Batch: 94898

Date Analyzed: 2012-09-18

Analyzed By: CW

				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	278	111	80 - 120	2012-09-18

Standard (CCV-2)

QC Batch: 94898

Date Analyzed: 2012-09-18

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	288	115	80 - 120	2012-09-18

Standard (CCV-3)

QC Batch: 94898

Date Analyzed: 2012-09-18

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	256	102	80 - 120	2012-09-18

Standard (CCV-1)

QC Batch: 94941

Date Analyzed: 2012-09-18

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-09-18

114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 26 of 30

NM

Standard (CCV-2)

QC Batch: 94941

Date Analyzed: 2012-09-18

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	99.9	100	85 - 115	2012-09-18

Standard (CCV-1)

QC Batch: 95015

Date Analyzed: 2012-09-20

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	275	110	80 - 120	2012-09-20

Standard (CCV-2)

QC Batch: 95015

Date Analyzed: 2012-09-20

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	251	100	80 - 120	2012-09-20

Standard (CCV-1)

QC Batch: 95043

Date Analyzed: 2012-09-20

Analyzed By: YG

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/kg	0.100	0.0999	100	80 - 120	2012-09-20
Toluene		1	mg/kg	0.100	0.0985	98	80 - 120	2012-09-20
Ethylbenzene		1	mg/kg	0.100	0.0929	93	80 - 120	2012-09-20
Xylene		1	mg/kg	0.300	0.281	94	80 - 120	2012-09-20

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Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 27 of 30

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Standard (CCV-2)

QC Batch: 95043

Date Analyzed: 2012-09-20

Analyzed By: YG

	771	<i>a</i> .	**	CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/kg	0.100	0.0977	98	80 - 120	2012-09-20
Toluene		1	mg/kg	0.100	0.0952	95	80 - 120	2012-09-20
Ethylbenzene		1	mg/kg	0.100	0.0892	89	80 - 120	2012-09-20
Xvlene		1	mg/kg	0.300	0.271	90	80 - 120	2012-09-20

Standard (CCV-1)

QC Batch: 95048

Date Analyzed: 2012-09-20

Analyzed By: YG

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	0.990	99	80 - 120	2012-09-20

Standard (CCV-2)

QC Batch: 95048

Date Analyzed: 2012-09-20

Analyzed By: YG

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	0.933	93	80 - 120	2012-09-20

Standard (CCV-1)

QC Batch: 95065

Date Analyzed: 2012-09-24

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	271	108	80 - 120	2012-09-24

114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 28 of 30

NM

Standard (CCV-2)

QC Batch: 95065

Date Analyzed: 2012-09-24

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	281	112	80 - 120	2012-09-24

Standard (CCV-3)

QC Batch: 95065

Date Analyzed: 2012-09-24

Analyzed By: CW

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	268	107	80 - 120	2012-09-24

Standard (CCV-1)

QC Batch: 95117

Date Analyzed: 2012-09-24

Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.108	108	80 - 120	2012-09-24
Toluene		1	mg/kg	0.100	0.102	102	80 - 120	2012-09-24
Ethylbenzene		1	mg/kg	0.100	0.0947	95	80 - 120	2012-09-24
Xylene		1	mg/kg	0.300	0.285	95	80 - 120	2012-09-24

Standard (CCV-2)

QC Batch: 95117

Date Analyzed: 2012-09-24

Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.106	106	80 - 120	2012-09-24
Toluene		1	mg/kg	0.100	0.101	101	80 - 120	2012-09-24
Ethylbenzene		1	mg/kg	0.100	0.0927	93	80 - 120	2012-09-24
Xylene		1	mg/kg	0.300	0.280	93	80 - 120	2012-09-24

114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 29 of 30

NM

Standard (CCV-1)

QC Batch: 95118

Date Analyzed: 2012-09-18

Analyzed By: YG

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	0.995	100	80 - 120	2012-09-18

Standard (CCV-2)

QC Batch: 95118

Date Analyzed: 2012-09-18

Analyzed By: YG

				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	1.01	101	80 - 120	2012-09-18

114-6401504

Work Order: 12091203 COG/Prohibition Fed. #2 SWD Page Number: 30 of 30 NM

Appendix

Report Definitions

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

Laboratory Certifications

-	Certifying	Certification	Laboratory
C	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-12-4	Midland

Standard Flags

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

Attachments

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.

12091303

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Summary Report

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX 79705 Report Date: December 21, 2012

Work Order: 12121335

Project Location: Lea Co., NM

Project Name: COG/Prohibition Fed. #2 SWD

Project Number: 114-6401504

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
316605	Trench-1 2' AH-1	soil	2012-12-11	00:00	2012-12-13
316606	Trench-1 4' AH-1	soil	2012-12-11	00:00	2012-12-13
316607	Trench-1 6' AH-1	soil	2012-12-11	00:00	2012-12-13
316608	Trench-1 8' AH-1	soil	2012-12-11	00:00	2012-12-13
316609	Trench-2 1' AH-2	soil	2012-12-11	00:00	2012-12-13
316610	Trench-2 3' AH-2	soil	2012-12-11	00:00	2012-12-13
316611	Trench-2 5' AH-2	soil	2012-12-11	00:00	2012-12-13
316612	CS-1 (Composite) 1.5' Bottom	soil	2012-12-11	00:00	2012-12-13

		BT	EX	
	Benzene	Toluene	Ethylbenzene	Xylene
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
316612 - CS-1 (Composite) 1.5' Bottom	$<0.400^{-1}_{\rm Qr,Qs}$	4.93 Qs	<0.400 Qs	11.8 Qs

Sample: 316605 - Trench-1 2' AH-1

Param	Flag	Result	Units	RL
Chloride		4380	mg/Kg	4

Sample: 316606 - Trench-1 4' AH-1

Param	Flag	Result	Units	RL
Chloride		2140	mg/Kg	4

¹Dilution due to excessive hydrocarbons.

	mber 21, 2012	Work Order: 12121335	Page	Number: 2 of 2
Sample: 316607	- Trench-1 6' AH-1			
Param	Flag	Result	Units	RL
Chloride		2500	mg/Kg	4
Sample: 316608	- Trench-1 8' AH-1			
Param	Flag	Result	Units	RL
Chloride		2400	mg/Kg	4
Sample: 316609	- Trench-2 1' AH-2			
Param	Floor	Result	Units	
	Flag			RL
Chloride	riag	825	mg/Kg	RL 4
	- Trench-2 3' AH-2			
	- Trench-2 3' AH-2			4
Sample: 316610		825	mg/Kg	
Sample: 316610 Param Chloride	- Trench-2 3' AH-2	825 Result	mg/Kg Units	4 RL
Sample: 316610 Param Chloride	- Trench-2 3' AH-2 Flag	825 Result	mg/Kg Units	4 RL



200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100

El Paso. Texas 79922 Midland, Texas 79703 Carroliton. Texas 75006

915-585-3443 432-689-6301 972-242-7750

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

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

Certifications

NELAP DoD LELAP DBEKansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ike Tavarez

Tetra Tech

1910 N. Big Spring Street Midland, TX, 79705

Report Date: December 21, 2012

Work Order: 12121335

54 54 54 54 54 54 54 54 54 54

Project Location: Lea Co., NM

Project Name:

COG/Prohibition Fed. #2 SWD

Project Number:

114-6401504

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
316605	Trench-1 2' AH-1	soil	2012-12-11	00:00	2012-12-13
316606	Trench-1 4' AH-1	soil	2012-12-11	00:00	2012-12-13
316607	Trench-1 6' AH-1	soil	2012-12-11	00:00	2012-12-13
316608	Trench-1 8' AH-1	soil	2012-12-11	00:00	2012-12-13
316609	Trench-2 1' AH-2	soil	2012-12-11	00:00	2012-12-13
316610	Trench-2 3' AH-2	soil	2012-12-11	00:00	2012-12-13
316611	Trench-2 5' AH-2	soil	2012-12-11	00:00	2012-12-13
316612	CS-1 (Composite) 1.5' Bottom	soil	2012-12-11	00:00	2012-12-13

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

Michael april

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

Case Narrative

Samples for project COG/Prohibition Fed. #2 SWD were received by TraceAnalysis, Inc. on 2012-12-13 and assigned to work order 12121335. Samples for work order 12121335 were received intact at a temperature of 1.3 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	82578	2012-12-13 at 12:00	97443	2012-12-13 at 12:00
Chloride (Titration)	SM 4500 -Cl B	82663	2012-12-19 at 09:02	97614	2012-12-20 at 14:11

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 12121335 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: December 21, 2012 114-6401504

Work Order: 12121335 COG/Prohibition Fed. #2 SWD Page Number: 5 of 15 Lea Co., NM

Analytical Report

Sample: 316605 - Trench-1 2' AH-1

Laboratory:

Midland

Analysis:

Chloride (Titration)

QC Batch:

97614

Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-12-20

Analyzed By:

Prep Method: N/A AR

Prep Batch:

82663

Sample Preparation:

2012-12-19

Prepared By:

RL

Parameter Chloride

Cert Flag

Result 4380

Units mg/Kg

Dilution 10

RL 4.00

Sample: 316606 - Trench-1 4' AH-1

Laboratory:

Midland

Analysis:

Chloride (Titration) QC Batch: 97614

Prep Batch: 82663 Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2012-12-20

Prep Method: N/A

Analyzed By: AR

2012-12-19

Prepared By: AR

RL

RL Cert Result Units Dilution Parameter Flag 10 4.00 Chloride 2140 mg/Kg

Sample: 316607 - Trench-1 6' AH-1

Laboratory:

Midland

Analysis: QC Batch: Prep Batch:

Chloride (Titration)

97614 82663 Analytical Method: Date Analyzed:

SM 4500-Cl B 2012-12-20

Prep Method: N/A Analyzed By: AR

2012-12-19 Sample Preparation:

Prepared By: AR

RL

Dilution RL Units Parameter Flag Cert Result 2500 mg/Kg 10 4.00 Chloride

Report Date: December 21, 2012

114-6401504

Work Order: 12121335 COG/Prohibition Fed. #2 SWD Page Number: 6 of 15 Lea Co., NM

Sample: 316608 - Trench-1 8' AH-1

Laboratory:

Midland

Analysis: Chloride (Titration)

QC Batch: 97614 Analytical Method:

SM 4500-Cl B

Prep Method: N/A Analyzed By: AR

Prep Batch: 82663

Date Analyzed: Sample Preparation:

2012-12-20 2012-12-19

Prepared By: AR

RL

Parameter Flag Chloride

Cert Result 2400

Units mg/Kg Dilution

RL4.00

Sample: 316609 - Trench-2 1' AH-2

Laboratory:

Midland

Analysis:

Chloride (Titration)

QC Batch: 97614 Prep Batch: 82663 Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2012-12-20

Prep Method: N/A Analyzed By: AR

2012-12-19

Cert

Prepared By: AR

RL

Parameter Flag Chloride

Result 825

Units mg/Kg Dilution 5

RL4.00

Sample: 316610 - Trench-2 3' AH-2

Laboratory:

Midland

Analysis: QC Batch:

Chloride (Titration)

97614 82663 Analytical Method:

SM 4500-Cl B 2012-12-20

Prep Method: N/A Analyzed By: AR AR

Prep Batch:

Date Analyzed: Sample Preparation: 2012-12-19

Prepared By:

Parameter

Chloride

Flag

Cert

RL Result 305

Units mg/Kg

5

Dilution

RL 4.00

Sample: 316611 - Trench-2 5' AH-2

Laboratory:

Midland

97614

Analysis: QC Batch:

Prep Batch: 82663

Chloride (Titration)

Analytical Method: Date Analyzed: Sample Preparation:

SM 4500-Cl B 2012-12-20 2012-12-19

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

Report Date: December 21, 2012

Work Order: 12121335 COG/Prohibition Fed. #2 SWD Page Number: 7 of 15

114-6401504

Lea Co., NM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			175	mg/Kg	5	4.00

Sample: 316612 - CS-1 (Composite) 1.5' Bottom

Laboratory: Midland

BTEX Analysis: QC Batch: 97443 Prep Batch: 82578

Analytical Method: S 8021B Date Analyzed: 2012-12-13 Sample Preparation: 2012-12-13

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

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene 1	Qr,Qs,U	1	< 0.400	mg/Kg	20	0.0200
Toluene	Qs	1	4.93	mg/Kg	20	0.0200
Ethylbenzene	Qs,U	1	< 0.400	mg/Kg	20	0.0200
Xylene	Qs	1	11.8	mg/Kg	20	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			39.8	mg/Kg	20	40.0	100	79.5 - 108
4-Bromofluorobenzene (4-BFB)			43.3	mg/Kg	20	40.0	108	71.4 - 108

Report Date: December 21, 2012 114-6401504

Work Order: 12121335 $\rm COG/Prohibition~Fed.~\#2~SWD$ Page Number: 8 of 15 Lea Co., NM

Method Blanks

Method Blank (1)

QC Batch: 97443

QC Batch:

97443

Date Analyzed: 2012-12-13 Analyzed By: YG

Prep Batch: 82578

QC Preparation: 2012-12-13

Prepared By: YG

	MDL									
Parameter	Flag	Cert	Result	Units	RL					
Benzene		1	< 0.00810	mg/Kg	0.02					
Toluene		1	< 0.00750	mg/Kg	0.02					
Ethylbenzene		1	< 0.00730	mg/Kg	0.02					
Xylene		1	< 0.00700	mg/Kg	0.02					

						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.99	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	70 - 130

Method Blank (1)

QC Batch: 97614

QC Batch: 97614 Prep Batch: 82663

Chloride

Date Analyzed: 2012-12-20 QC Preparation: 2012-12-19 Analyzed By: AR Prepared By: AR

< 3.85

MDL Parameter Flag Cert Result

Units RLmg/Kg

Report Date: December 21, 2012 114-6401504

Work Order: 12121335 COG/Prohibition Fed. #2 SWD Page Number: 9 of 15 Lea Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:

97443

Date Analyzed:

2012-12-13

Analyzed By: YG

Prep Batch: 82578

QC Preparation: 2012-12-13

Prepared By: YG

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	1.66	mg/Kg	1	2.00	< 0.00810	83	70 - 130
Toluene		1	1.82	mg/Kg	1	2.00	< 0.00750	91	70 - 130
Ethylbenzene		1	1.96	mg/Kg	1	2.00	< 0.00730	98	70 - 130
Xylene		1	5.76	mg/Kg	1	6.00	< 0.00700	96	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	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	1.58	mg/Kg	1	2.00	< 0.00810	79	70 - 130	5	20
Toluene		1	1.77	mg/Kg	1	2.00	< 0.00750	88	70 - 130	3	20
Ethylbenzene		1	1.91	mg/Kg	1	2.00	< 0.00730	96	70 - 130	3	20
Xylene		1	5.65	mg/Kg	1	6.00	< 0.00700	94	70 - 130	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.01	2.02	mg/Kg	1	2.00	100	101	70 - 130
4-Bromofluorobenzene (4-BFB)	1.95	1.90	mg/Kg	1	2.00	98	95	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 82663

97614

Date Analyzed: QC Preparation: 2012-12-19

2012-12-20

Analyzed By: AR Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			2620	mg/Kg	1	2500	< 3.85	105	85 - 115

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

 $continued \dots$

Report Date: December 21, 2012

114-6401504

Work Order: 12121335 COG/Prohibition Fed. #2 SWD Page Number: 10 of 15

Lea Co., NM

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			LCSD			Spike	Matrix		Rec.		RPD
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2750	mg/Kg	1	2500	< 3.85	110	85 - 115	5	20

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

Matrix Spike (MS-1) Spiked Sample: 316612

QC Batch: 97443 Prep Batch: 82578 Date Analyzed: 2012-12-13 QC Preparation: 2012-12-13 Analyzed By: YG Prepared By: YG

				MS			Spike	Matrix		Rec.
Param		F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene	Qs	Qs	1	4.02	mg/Kg	20	2.00	< 0.162	201	70 - 130
Toluene	Q_8	Qs	1	7.88	mg/Kg	20	2.00	4.93	148	70 - 130
Ethylbenzene	Qs	Qs	1	6.41	mg/Kg	20	2.00	< 0.146	320	70 - 130
Xylene	Qs	Qs	1	20.6	mg/Kg	20	6.00	11.8	147	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		\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	Qr,Qs	Qr,Qs	1	2.92	mg/Kg	20	2.00	< 0.162	146	70 - 130	32	20
Toluene	Qs	Qs	1	7.68	mg/Kg	20	2.00	4.93	138	70 - 130	3	20
Ethylbenzene	Qs	Qs	1	6.62	mg/Kg	20	2.00	< 0.146	331	70 - 130	3	20
Xylene			1	19.5	mg/Kg	20	6.00	11.8	128	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.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	Qsr	Qsr	38.8	39.0	mg/Kg	20	2	1940	1950	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	45.9	44.0	mg/Kg	20	2	2295	2200	70 - 130

Matrix Spike (MS-1) Spiked Sample: 316611

QC Batch: 97614 Prep Batch: 82663 Date Analyzed: 2012-12-20 QC Preparation: 2012-12-19 Analyzed By: AR Prepared By: AR Report Date: December 21, 2012

Work Order: 12121335

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COG/Prohibition Fed. #2 SWD

Lea Co., NM

			MS			Spike	Matrix		Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			2790	mg/Kg	5	2500	175	105	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	F	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2930	mg/Kg	5	2500	175	110	78.9 - 121	5	20

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

Report Date: December 21, 2012 114-6401504

Work Order: 12121335 COG/Prohibition Fed. #2 SWD Page Number: 12 of 15 Lea Co., NM

Calibration Standards

Standard (CCV-1)

QC Batch: 97443

Date Analyzed: 2012-12-13

Analyzed By: YG

				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/kg	0.100	0.0921	92	80 - 120	2012-12-13
Toluene		1	mg/kg	0.100	0.0935	94	80 - 120	2012-12-13
Ethylbenzene		1	mg/kg	0.100	0.0944	94	80 - 120	2012-12-13
Xylene		1	mg/kg	0.300	0.282	94	80 - 120	2012-12-13

Standard (CCV-2)

QC Batch: 97443

Date Analyzed: 2012-12-13

Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0931	93	80 - 120	2012-12-13
Toluene		1	mg/kg	0.100	0.0936	94	80 - 120	2012-12-13
Ethylbenzene		1	mg/kg	0.100	0.0961	96	80 - 120	2012-12-13
Xylene		1	mg/kg	0.300	0.281	94	80 - 120	2012-12-13

Standard (CCV-1)

QC Batch: 97614

Date Analyzed: 2012-12-20

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-12-20

Standard (CCV-2)

QC Batch: 97614

Date Analyzed: 2012-12-20

Analyzed By: AR

Report Date: December 21, 2012 114-6401504

Work Order: 12121335 COG/Prohibition Fed. #2 SWD

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				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	99.6	100	85 - 115	2012-12-20

Report Date: December 21, 2012 114-6401504

Work Order: 12121335 COG/Prohibition Fed. #2 SWD Page Number: 14 of 15 Lea Co., NM

Appendix

Report Definitions

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

Laboratory Certifications

	Certifying	Certification	Laboratory
C	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-12-4	Midland

Standard Flags

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- MI1 Split peak or shoulder peak
- MI2 Instrument software did not integrate
- MI3 Instrument software misidentified the peak
- MI4 Instrument software integrated improperly
- MI5 Baseline correction
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
- U The analyte is not detected above the SDL

Result Comments

Report Date: December 21, 2012 114-6401504

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1 Dilution due to excessive hydrocarbons.

Attachments

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

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Analysis Request of Chain of Custody Record		TETRA FECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	PRESERVATIVE METHOD	Esd # S COUTE	LAB I.D. DATE TIME IX CONNE CONTRICATION NUMBER OF HOLE NUMBER OF	16.65/21/12 S X / Verd - 1 21 AH-1 11	(20 1 1 V 1 1 1 1 1 20)	>	809	609 VTrenh-2 1/ AH-2 11 1	610 1 1 2 MR2 11 1	1 1 1 2 Mb / 2 Smi " X 1 1 1 1 1	1012 V NX CS-1 (Carposts) 1.5 Cophys 1 1 X		Date: Time:	RELINQUISHED BY: (Signature) Time: (12/13/12) Time: (14/12) Time: (14/12) Time: (14/12) Time: (14/12) Time: (14/12) Time: (14/12) Time: (14/12)	Time;	RECEIVED BY: (Signature) ADDRESS: CITY: STATE: DANTE: DANTE: TIME:	MUDITION WHEN RECEIVED: 30 MILLIAIN all 3166