SITE INFORMATION

	وروب والمراجعة والمتعادية المعادية المراجع المراجع	S	TE INFORMA	ATION						
		Report	t Type: Closi	ure Re	eport					
General Site I	nformation:	······								
Site:	an a	SENM SWD	System (Northwe	est Centi	ral)					
Company:		COG Opera	ting LLC							
Section, Towr	nship and Range	Unit N - Sec	. 17 - T-17S - R-30)E						
Lease Numbe	r:	NMNM-860	25							
County:		Eddy Conty	1							
GPS:			32.83047° N		103.	99600° W				
Surface Owne	er:	Federal								
Mineral Owne	r:									
Directions:			Ils at the intersection hi, turn left 0.4 mi, turn			an Cuttoff), travel north on				
		30-0	15-04180		30-	015-20972				
Release Data:			Spill #1		Spill #2	Spill #3				
Date Released	·	5/12/2010			12/15/2010	6/25/2012				
Type Release:		Produced	water		Oil	Oil and Water				
Source of Cont	amination:	6" Poly line	e weld failed		Oil Tank	Produced water tan				
Fluid Released	1:	300 bbls			23 bbls	700 bbls				
Fluids Recover	red:	200 bbls			20 bbls	650bbls				
Official Comm	unication:	289-	.530	•	XFP-573	2RP-1212				
Name:	Robert McNeill	· · · · · · · · · · · · · · · · · · ·			Ike Tavarez	na na ing kanang na na ang kanang na				
Company:	COG Operating,	LLC			Tetra Tech	· · · · · · · · · · · · · · · · · · ·				
Address:	One Concho Cer				4000 N. Big Spring					
P.O. Box	600 W. Illinois A				Suite 401					
					Midland, Texas					
City:	Midland Texas, 7	9701								
Phone number.	<u>`</u>				(432) 682-4559) 682-4559				
Fax:	(432) 684-7137									
Email:	rmcneill@conc	horesources.cor	<u>n</u>		ike.tavarez@tetratech.com					
Ranking Criter	ria				<u>, and a second s</u>	n an				
		<u> </u>			<u></u>	nanda alima ang sang sang sang sang sang sang sang				
Depth to Groun	dwater:		Ranking Score		Site Da	ta				
<50 ft			20							
50-99 ft >100 ft.			<u>10</u>		,,,,,,,					
-100 11.										
NellHead Prote			Ranking Score		Site Da	ta				
	1,000 ft., Private < 20		20							
water Source >	1,000 ft., Private >20	J n.	0		0					
Surface Body o	f Water:		Ranking Score		Site Da	ta				
200 ft.			20		····					
00 ft - 1,000 ft. -1,000 ft.			10	·	0					
- ,000 IL					U					
. 7	otal Ranking Scol	rè:	0							
		Accepta	ble Soil RRAL (mg	ı/ka)						
		Benzene	Total BTEX	TPH		L CONSERVATION RTESIA DISTRICT				
		10	50	5,000						
		<u></u>				JUN 0 4 2014				



May 19, 2014

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

Re: Closure Report for the COG Operating LLC., Northwest Central (SENM SWD System), Unit N, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess three spills from the Northwest Central (SENM SWD System) Tank Battery located in Unit N, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83047°, W 103.99600°. The site location is shown on Figures 1 and 2.

Background

Spill #1

According to the State of New Mexico C-141 Initial Report, a leak was discovered on May 12, 2010, when approximately three hundred (300) barrels of produced water released from a poly line weld on a 6" transmission line. To alleviate the problem, COG personnel repaired the poly line. Two hundred (200) barrels of standing fluids were recovered. The spill initiated on the north of the facility, flowed south approximately 325' and migrated approximately 150' off the facility pad. The initial C-141 form is enclosed in Appendix A.

Spill #2

On December 15, 2010, an oil tank overflowed caused by a plugged equalizer line, releasing approximately 23 barrels of oil. COG recovered 20 barrels using a vacuum truck. The spill flowed south of the facility pad measuring approximately 3' x 100' and migrated on top of the spill #1 footprint.

Spill #3

On July 25, 2012, a 10,000 bbl open top water tank overflowed caused an electrical error and alarm that caused water to be diverted to the open top tank instead of the tank battery, releasing approximately 700 barrels of oil and 100 barrels of produced water. COG recovered 650 barrels of oil and 50 barrels of produced water using a vacuum truck. The spill flowed around the open top tank and migrated on top of the spill #1 footprint.

Groundwater

No water wells were listed within Section 17. According to the NMOCD groundwater map, the average depth to groundwater in this area appears to be 250' to 275' 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 5,000 mg/kg.

Soil Assessment and Analytical Results

Spill #1

On June 23, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of seven (7) auger holes (AH-1 through AH-7) were installed using a stainless steel hand auger to assess the impacted soils. Auger holes were not installed east of the tanks, due to the dense surface caliche in the area. In addition, the area of AH-4 appears to be near a closed reserve pit area. 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 results of the sampling are summarized in Table 1. The spill area and auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were below the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in the majority of the auger holes. Auger holes (AH-2 and AH-4) were vertically defined at 7'-8' and 2'-3', respectively. The remaining auger holes required additional delineation.

On August 17, 2010, Tetra Tech supervised the installation of eight (8) soil borings (SB-1 through SB-8). In the area north of the facility, additional soil borings were not installed due to the buried electrical lines and active underground lines in the area. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 2. The soil boring locations are shown on Figure 3.

Referring to Table 1, all of the soil borings were vertically defined and show a shallow chloride impact to the subsurface soils ranging from 1.0' to 7.0' below surface. Soil boring (SB-3 and SB-6) showed a shallow impact to the soil at 1.0' and 2.0' below surface. SB-2, SB-4, SB-5, SB-7 and SB-8 were vertically defined at approximately 3.0' to 5.0' below surface. The area of SB-1 did show the deepest impact of 5.0' to 7.0' below surface.

Spill #2

On December 15, 2010, a second spill occurred at the site when the tank overflowed east of the tank battery and flowed south encompassing part of the spill #1 footprint. On February 25, 2011, Tetra Tech supervised the installation of seven (7) soil borings (SB-1 through SB-7). 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 2. The spill area and auger hole locations are shown on Figure 3.

Referring to Table 2, all of the submitted samples were below the RRAL for TPH and BTEX. The soil boring results showed a shallow chloride impact to the subsurface soils and were all defined at depths ranging from 3.0' to 7.0' below surface.

Spill #3

On July 31, 2012, Tetra Tech personnel inspected and sampled the spill area. A total of 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 results of the sampling are summarized in Table 1. The spill area and auger hole locations are shown on Figure 3.

Referring to Table 3, all of the submitted samples were below the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in the majority of the auger holes. Auger hole (AH-4) was vertically defined at 2'-2.5' with a chloride level of 443 mg/kg. The remaining auger holes required additional delineation.

On September 31, 2012, Tetra Tech supervised the installation of two (2) soil borings (SB-1 and SB-2). Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 3. The soil boring locations are shown on Figure 3.

Referring to Table 3, all of the soil borings were vertically defined at 6.0' below surface and showed a shallow chloride impact to the subsurface soils ranging from 0' to 5.0' below surface. Soil borings (BH-1 and BH-2) showed a shallow impact to the soil with a maximum chloride level of 8,770 mg/kg (0-1.0') and 3,800 mg/kg (2.0'-3.0') and decreased to 413 mg/kg (6.0-7.0') and 118 mg/kg (6.0-7.0'), respectively.

Remedial Activities

On February 17, 2014, Tetra Tech supervised the removal of impacted material as highlighted (green) in Table 1, 2 and 3 and shown on Figure 4. In order to remove the elevated chloride concentrations, the excavations ranged from 1.0' to 3.5' below surface.

Two areas (east and south) of water tank were capped with a clay material as shown on Figure 4. Due to numerous lines and equipment west of the water tank, the area was not excavated due to safety concerns. In this case, the impacted soil will be deferred until the abandonment of the facility. In addition, some of the proposed depths were not achieved due to limited access, lines and structures in the area. Once excavated, Tetra Tech collected confirmation samples from the excavation bottom holes and sidewalls. The sampling results are shown on Table 4.

Approximately 2,260 cubic yards of excavated soil was transported to proper disposal. Once excavated to the appropriate depths, the excavation was backfilled with clean soil.

Conclusion

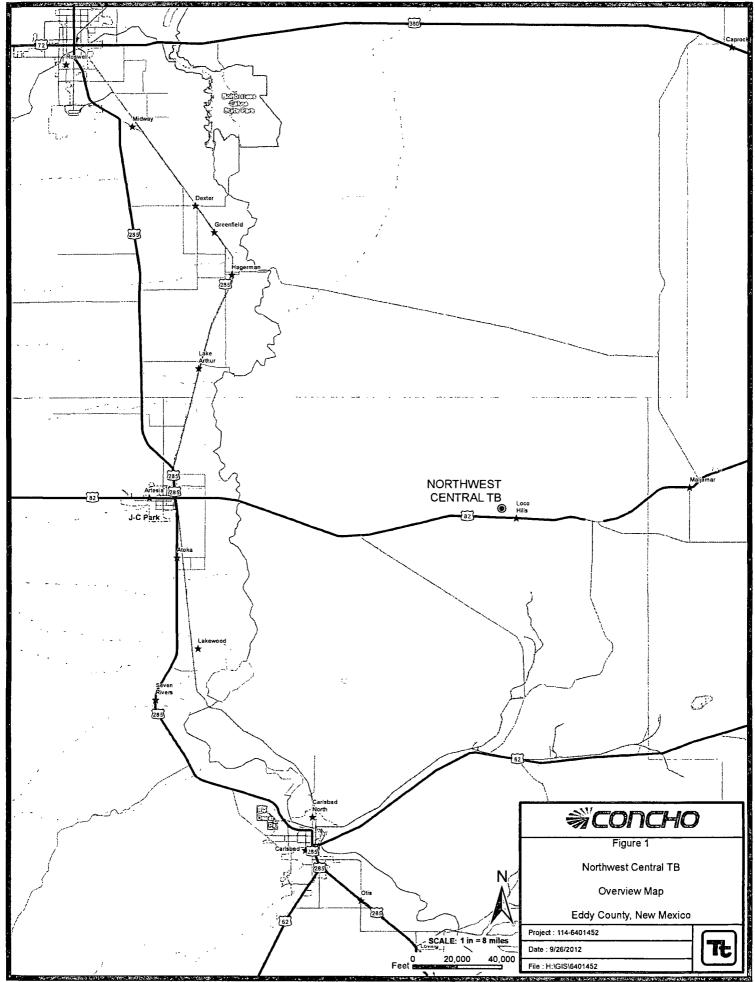
Based on the assessment and remedial activities at this site, COG requests closure of the spill. A Final C-14's are enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remedial actions performed, please call me at (432) 682-4559.

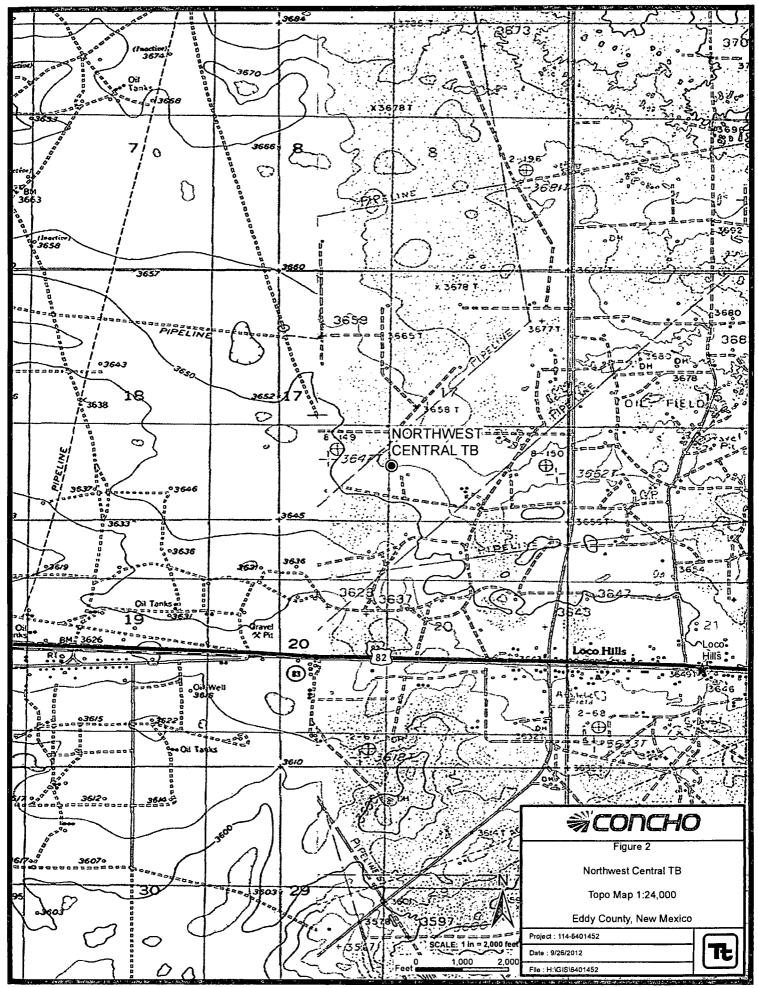
Respectfully submitted, TETRA/TECH

Ike Tavarez, PG Project Manager

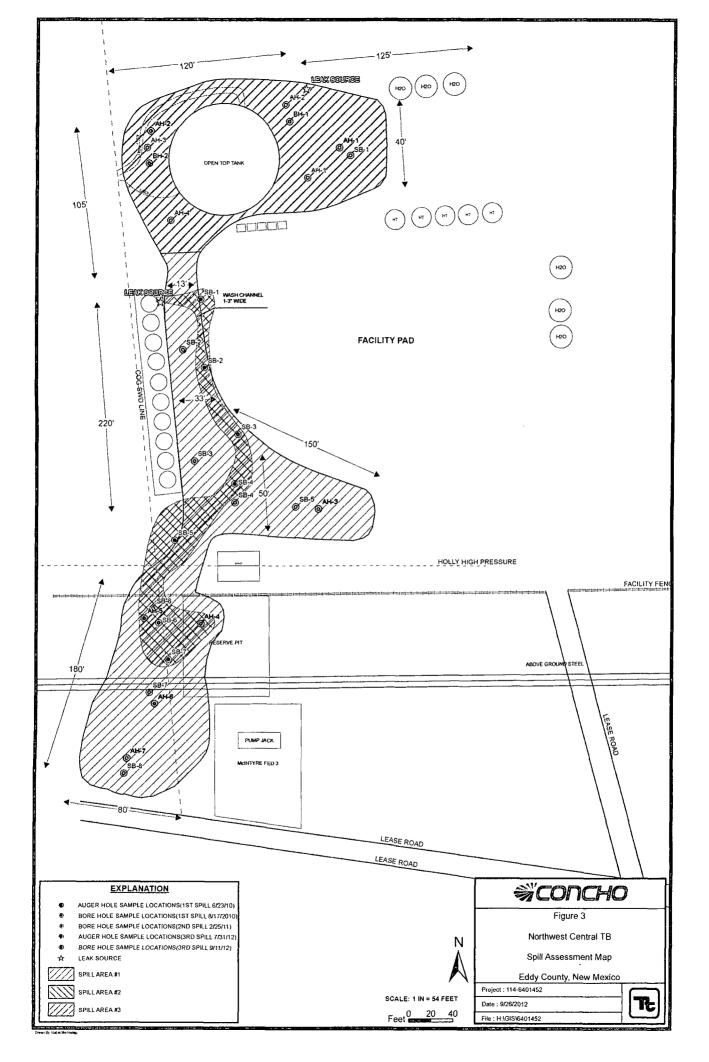
cc: Robert McNeill – COG cc: Mike Burton – BLM Jeff Robertson - BLM

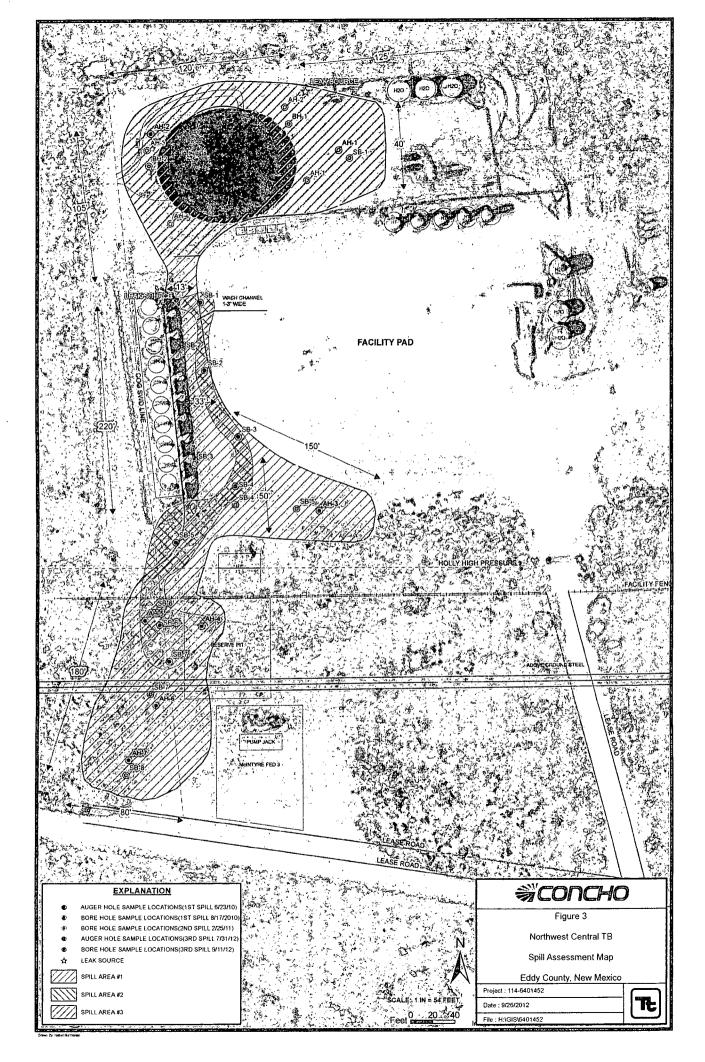
Figures

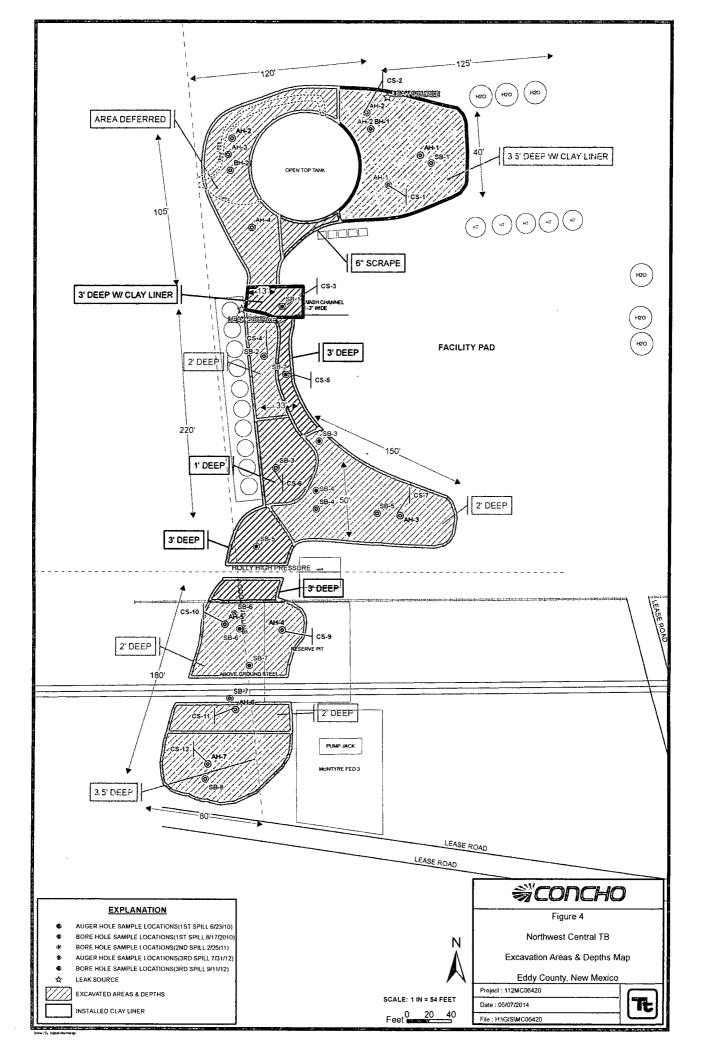




Drawn By: Isshel Marmolejo







Tables

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Table 1 COG Operating LLC. SENM SWD System Spill #1 Eddy COUNTY, NEW MEXICO

0	Sample	Sample	Depth	Soi	l Status	TP	H (mg/l	kg)	Benzene	Toluene	Ethlybenzene	Xylene	BTEX	Chloride
Sample ID	Date	Depth (ft)		In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Total	(mg/kg)
AH-1	6/23/10	0-1'	ŀ	,	× X	\$\$0.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	15800
		1-1.5			Х		-	-		-	-	-	÷	6220
3.5'		2-2.5	<u> </u>		X	-	-		-	-	-	-		7440
SB-1	8/17/10	· 1'			X	<50.0	<2.00	<50.0	-	-	-	-		1,870
3.5' cap	ĸ	3'	[X	1-	-		-	-				2,780
	н	5'		X		-	-	-	-	-	-	-		4,380
	u	7'	<u> </u>	X		-	-	-		-	•	-		504
	u	10'		X		-	-	-	-	-	-	-		248
	u	15'		X		-	-	-	-	-	-	-		<200
	u	20'		X		-	-	-	-			-		<200
AH-2	6/23/10	0-1'	1	x		<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	4400
Deferred		1-1.5'	<u> </u>	X		-	-	-	-	-	-	-	-	6410
		2-2.5'		X		-	-	-	-	-	-	-	-	7030
		3-3.5'		X		-	-	-	-	-	-		-	5660
		4-4.5'		X		-	-	-	-	-	-	-	-	3140
		5-5.5'		X		-	-		-	-	-	-	-	2270
		6-6.5'		X		-	-	-	-	-	-	-	-	1230
		7-7.5'		X		-	-	-	-	-	-	-	-	314
		8-8.5'		х		-	-	-	-	-	-	-	-	<200
SB-2	8/17/10	1'			X	. <50.0	<2.00	<50.0	· · .	-		_		19,400
2'	и	3'		X		-	-	-	•	-	-	-		22,800
	"	5'		X		-	-	-	-	-	-	-		1,350
	н	7'	<u> </u>	X		-	-	-	-	-	-	-		300
	11 II	10'		X		-	•	-	-	-	-	-	· · · · · · · · · · · · · · · · · · ·	230
		15'	1	X		-		-		-	-	- 1	·	<200
	u	20'		Х		-	-	-	-	-	•	-		<200
SB-3	8/17/10	1			x	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200		2,440
1'	"	3'		X		-	•	-	-	-	-	-		703
	"	5'	1	X		-	-	-	-	-	-	-		234
	n	7'		X		-	-	-	-		-			295
		10'	1	X		-	-	-	-	-	-			337
	"	15'		X		-	-	-	-	-	-			244

Table 1 COG Operating LLC. SENM SWD System Spill #1 Eddy COUNTY, NEW MEXICO

A	Sample	Sample	Depth	Soi	Status	TP	H (mg/	kg)	Benzene	Toluene	Ethlybenzene	Xylene	BTEX	Chloride
Sample ID	Date	Depth (ft)		In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Total	(mg/kg)
SB-4	8/17/10	1"			X	593	83.0	676.0	<0.100	0.481	0.245	1.21		6,330
2'	н	3'		X		-	-	-	-	-	-	-		8,770
	\$1	5'		X		-	-	-	-	-	-	-		399
	u	7'		х		-	-	-	-	-	-	-		<200
	"	10'		Х		-	-	-	-	-	-	-		422
	U	15'		Х		-	-	-	-	· -	-	-		413
	8	20'		Х		-	-	-	-	· -	-	-		554
	3	25'		Х		-	-	-	-	-	-	-		404
	μ	30'		Х		-	-	-	-	-	-	-		291
AH-3	6/23/10	0-1'			X	<50.0	<2:00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	1850
2'														
SB-5	8/18/10	1'			X	3;060	<20.0	3,060	<0.200	<0.200	0.204	0.815		3,460
2'	u	3'		X		-	-	-	-	-	-	-		2,520
	a	5'		X		-	-	-	-	-	-	-		385
	u	7'		X		-	-	-	-	-	-	-	·····	208
	0	10'		Х		-	-	-	-	-	-	-		532
		15'		X		-	-	-	-	-	-	-		449
	u	20'		Х		-	-	-	-	-	-	-		319
AH-4	6/23/10	0-1'			Х	<50.0	<2:00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	6220
2'		1-1.5			X. '	-	-	-	_	-		-	-	3140
		2-2.5'		X		-	-	-	-	-	-	-	-	614
		3-3.5'		Х		-	-	-	-		-	-	-	287
AH-5	6/23/10	0-1'		- 	X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	.1650
2'		1-1.5'			X	-		-		-	-	-		3240
SB-6	8/18/10	1, 1,		· .	x	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200.		<200
2'	и	3'		X		-	~	-	-	•	-	-		<200
		5'		X		-	-	-	-	-	-	-		2,180
	н	7'		Х		-	-	-	-	-	-	-		981
	и	10'		X		-	-	-	-	-	-	-		342
	N	15'		X		-	-	-	-	-	-	-		250
	n	20'		X		-	-	-	-	-	-	-		234

Table 1 COG Operating LLC. SENM SWD System Spill #1 Eddy COUNTY, NEW MEXICO

- · · ·-	Sample	Sample	Depth	Soi	I Status	TP	H (mg/l	kg)	Benzene	Toluene	Ethlybenzene	Xylene	BTEX	Chloride
Sample ID	Date	Depth (ft)		In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Total	(mg/kg)
AH-6	6/23/10	0-1'			· . X .	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	2420
2'						·								
SB-7	8/18/10	11			Х	<50.0	<2.00	<50.0		-	-]		3,470
2'	и	3'		X		-	-	-		-	-	-		4,150
		5'		Х		-	-	-	-	-	-	-		614
	u	7'		X		-	-	-	-	-	-	-		594
	u	10'		Х		-	-	-	•	-	-			468
	u	15'		х		-	-	-	-		-	-		253
	u	20'		X		-	-	-	-	-	-	-		287
	n	25'		X		-	-	-	-	-	-	-		<200
	U	30'		Х		-	-	-	-	-	-	-		292
AH-7	6/23/10	0-1'	[. x .	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	2800
3.5		1-1.5'			X .	-	-	-	-	-	-		-	4880
		2-2.5'			, X.	. •	-	-	-	-	-	-	-	6240
SB-8	8/18/10	1'	·		X	<50.0	<2.00	<50.0	-	-	-	-		863
3.5	n	3'		<u> </u>	Х	-	-	-	-	-	-	-	· · ·	1,430
		5'		X		-	-	-	-	-	-	-	· · · · · · · · · · · · · · · · · · ·	1,900
	и	7'		X		-	-	-	-	-	-	-		1,260
	u	10'		X		-	-	-	-	-		-		456
·	u	15'		X		-	-	-	-	-	-	-		739
	"	20'		X		-		-	-	-	-	-		481
	11	25'		X		-		-	-	-	-	-		496
	0	30'		X		-	-	-	-	-	-	-		337
	"	40'		X		-	-	-	-	-	-	-		<200

BEB Below Excavation Bottom

(--) Not Analyzed

Excavated Depths

Table 2 COG Operating LLC. SENM SWD System Spill #2 Eddy COUNTY, NEW MEXICO

0	Sample	Sample	Soi	I Status	1	FPH (mg/k	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SB-1	2/25/11	0-1'		X	<50.0	6.69	6.69	<0.0200	<0.0200	0.140	0.391	15,400
3' cap	'н ^т	3'		X	-	-	-	- c	· · · ·	-		5,170
· · · · · · · · · · · · · · · · · · ·	u	5'	Х		-	-	- ·	-	-	-	-	4,380
	"	7'	Х		-	-	-	-	-	-	-	569
	"	10'	Х		-	-	-	-	-	-	-	489
		15'	Х		-	-	-	-	-	-	-	359
	"	20'	Х		-	-	-	-	-	-	-	250
SB-2	2/25/11	0-1'		Х	<50.0	<2.00	<50.0		-			6,040
3'	28	3'		Х		-	-	-	-	-	· - ·	'3,360
	н	5'	Х		-	-	-	-	-	-	-	405
	u	7'	Х		-	-	-	-	-	-	-	207
	u	10'	Х		-	-	-	-	-	-	-	281
	"	15'	Х		-	-	-	-	-	-	-	252
	μ	20'	Х		-	-	-	-	-	•	-	232
SB-3	2/25/11	0-'1		Х	<50.0	<2.00	<50.0		-	-	- :	498
2'	n	3'	Х		-	-	-	-	-	-	-	2,310
	0	5'	Х		-	-	-	-	-	-	-	957
	U	7'	Х		-	-	-	-	-	-	-	<200
	"	10'	Х		-	-	-	-	-	-	-	249
	0	15'	Х		· -	-	-	-	-	-	-	234
	n	20'	Х		-	-	-	-	-	-	-	<200
SB-4	3/1/11	0-1'		• X •	<50.0	<2.00	<50.0			-	-	1,210
2'	n	3'	Х		-	-	-	-	-	-		1,290
	n	5'	Х		-	-	-	-	-	-	-	857
	0	7'	Х		-	-	-	-	-	-	-	717
		10'	Х		-	-	-	-	-	-	-	339
	"	15'	Х		-	•	-	-	-	-	-	204
	"	20'	Х		-	-	-	-	-	-	-	<200

Table 2 COG Operating LLC. SENM SWD System Spill #2 Eddy COUNTY, NEW MEXICO

	Sample	Sample	Soi	I Status	٦	ſPH (mg/k	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SB-5	3/1/11	0-1'		Х	3,530	1,730	5,260	2.86	:82.8	64.8	86.0	5,300
2'	ń,	3'	~	. X	2960	2850	5810	3.60	75.1	69.9	89.6	5,180
	u	5'	Х		252	287	539	<0.100	0.602	3.71	6.61	3,680
	10	7'	Х		-	-	-	-	-	-	-	1,300
		10'	Х		-	-	-	-	-	-	-	<200
	n	15'	Х		-	-	-	-	-	-	-	<200
	n	20'	Х		-	-	-	-	-		-	235
SB-6	3/1/11	. 0-1'		X	3,870	1,530	5,400	<0.200	3.16	17.8	.34.7	<200
2'	n	3'	Х	i	<50.0	<2.00	<50.0	<0.0200	0.159	<0.0200	<0.0200	2,010
	'n	5'	Х		-	-	-	-	-		-	1,000
	"	7'	Х		-	-	-	-	-	-	-	418
	"	10'	Х		-	-	-	-	-	-	-	354
	U	15'	Х		-	-	-	-	-	-	-	251
	"	20'	Х		-	-	-	-	-	-	-	<200
	p	25'	Х		-	-	-	-	-	-	-	221
	n	30'	Х		-	-	-	-	-	-	-	320
SB-7	3/1/11	0-1		X	10,800	3,640	14,440	5.25	86.5	87.6	120	1,080
2'	"	3'	Х		1560	1240	2800	1.37	46.9	39.5	63.7	4,180
	u	5'	Х		<50.0	<2.00	<50.0	<0.0200	<0.0200	0.15	<0.0200	2,500
	"	7'	Х		-	-	-	-	-	-	-	419
	μ	10'	Х		-	-	-	-	-	-	-	792
	n	15'	Х		-	-	-	-	-	-	-	324
	u	20'	Х		-	-	-	-	-	-	-	<200
	H	25'	Х			-	-	-	-	-	-	279
	"	30'	Х		-	-	-	-	-	-	-	<200

(--) Not Analyzed

Excavation Depths

Clay Liner Installed

Table 3

COG Operating LLC.

North West Central Tank Battery

Spill #3

Eddy County, New Mexico

0	Sample	Sample	Soil	Status	7	FPH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	7/31/2012	0-1		Х	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	430
3.5 cap	н	1-1.5		Х		-		-	-			-	860
	11	2-2.5		Х	. - ·	-	-	-	-		-	-	2;460
	1 8	3-3.5		X	-		-	-	-	-	-	-	1,500
	0	4-4.5	Х		-	-	-	-	-	-	-	-	2,650
AH-2	7/31/2012	0-1		X ·	<4.00	385	385	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	3,850
3.5 cap	(1	1-1.5		X	· -	-	-		. –		-		2,780
	U	1.5-2		Х	-	-	-	-	-	-	-		1,840
BH-1	9/11/2012	0-1		X	- ,		-	· _		-	_	<u></u>	8,770
3.5 cap	0	2-3		X		-	-	-	-		-	÷,	7,450
	14	4-5	Х		-	_	-	-	-	_	-	-	2,790
	u	6-7	Х		-	-	-	-	-	-	-	-	413
	н	9 -10	Х		-	-	-	-	-	-	-	-	399
	U.	14-15	Х		-	-	-	-	-	-	-	-	82.7
		19-20	Х		-	-	-	-	-	-	-	-	157

Table 3

COG Operating LLC. North West Central Tank Battery Spill #3 Eddy County, New Mexico

Completio	Sample	Sample	Soil	Status	-	ГРН (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total BTEX	Chloride
Sample ID	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-3	7/31/2012	0-1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,600
deferred	II	1-1.5	Х		-	-	-	-	-	-	-	-	2,730
	11	2-2.5	Х		-	-	-	-	-	-	-	-	2,850
	u	3-3.5	Х		-	-	-	-	-	-	-	-	3,830
	11	4-4.5	Х		-	-	-	-	-	-	-	-	3,630
	μ	5-5.5	Х		-	-	-	-	-	-	-	-	1,850
BH-2	9/11/2012	0-1		X	-	-	-	-	-		-	-	955
deferred	¥1	2-3		X	-	-	-	-	-	-	-	-	3,800
		4-5	Х		-	-	-	-	-	-	-	-	2,260
	41	6-7	X		-	-	-	-	-	-	-	- ·	118
	U	9-10	Х		-	-	-		-	=	-	-	44.3
AH-4	7/31/2012	0-1		X	<4.00	76.3	76.3	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	5,650
deferred	41	1-1.5	Х		-	-	-	-	-		-	-	6,430
	н	2-2.5	Х		_	-	-	-	-	-	-	-	2,060
	n	3-3.5	Х		-	-	-	-	-	-	+	-	443
	u	4-4.5	Х		-	-	-	-	-	-	-	-	231
	n	5-5.5	Х		-	-	-	-	-	-	-	-	636

(-) Not Analyzed

Excavation Depths

Clay Liner Installed

Table 4 COG Operating LLC. Northwest Central Tank Battery Eddy County, New Mexico

	Sample ID	Sample	Sample	Soil S	Status	Chloride
		Date	Depth (ft)	In-Situ	Removed	(mg/kg)
CS-1	AH-1 (3rd Spill) South Side Wall	2/20/2014	-	Х		680
	AH-1 (3rd Spill) East Side Wall	н		Х		5,920
	AH-1 (3rd Spill) West Side Wall	11	-	Х		593
Clay Cap	AH-1 (3rd Spill) Bottom Hole	11	-	Х		515
	Ald 2 (2rd Spill) North Side Well	0/00/0014		~		11.000
CS-2	AH-2 (3rd Spill) North Side Wall	2/20/2014	-	X		11,900
	AH-2 (3rd Spill) East Side Wall		-	<u> </u>		17,400
Clay Cap	AH-2 (3rd Spill) Bottom Hole		-	X		195
CS-3	SB-1 (2nd Spill) North Side Wall	2/25/2014	-	X	·····	2,650
	SB-1 (2nd Spill) West Side Wall	n	-	X		2,110
	SB-1 (2nd Spill) East Side Wall	n	-	Х		48.7
Clay Cap	SB-1 (2nd Spill) Bottom Hole		-	Х		3,230
 CS-4	SB-2 (1st Spill) West Side Wall	2/25/2014	-	X		2,680
	SB-2 (1st Spill) Bottom Hole	"	-	Х		1,170
CS-5	SB-2 (2nd Spill) East Side Wall	2/25/2014		Х		468
	SB-2 (2nd Spill) Bottom Hole	u	-	Х		516
CS-6	SB-3 (1st Spill) West Side Wall	2/25/2014	-	X		1,140
	SB-3 (1st Spill) Bottom Hole	"	-	X		916
	SB-5 (1st Spill) North Side Wall	2/25/2014		X		82.9
CS-7	SB-5 (1st Spill) North Side Wall	2/25/2014	-	X		82.9
	SB-5 (1st Spill) East Side Wall	11	-	X		575
	SB-5 (1st Spill) Bottom Hole	11	-	X		624

Table 4 COG Operating LLC. Northwest Central Tank Battery Eddy County, New Mexico

		Sample	Sample	Soil	Status	Chloride
	Sample ID	Date	Depth (ft)	In-Situ	Removed	(mg/kg)
* CS-8	SB-5 (2nd Spill) North Side Wall	3/6/2014	-	Х		800
	SB-5 (2nd Spill) East Side Wall	11	-	Х		1,200
	SB-5 (2nd Spill) Bottom Hole	11	-	Х		900
* CS-9	AH-4 (1st Spill) East Side Wall	3/10/2014	-	x		500
	AH-4 (1st Spill) Bottom hole	11	-	Х		900
* CS-10	AH-5 (1st Spill) West Side Wall	3/10/2014	-	x		500
	AH-5 (1st Spill) Bottom hole	IJ	-	Х		750
* CS-11	SB-7 (1st Spill) West Side Wall	3/10/2014	-	X		550
	SB-7 (1st Spill) East Side Wall	n	-	Х		600
	SB-7 (1st Spill) Bottom Hole 2'	"		Х		1,600
	SB-7 (1st Spill) Bottom Hole 3'	11	-	Х		600
* CS-12	SB-8 (1st Spill) West Side Wall	3/10/2014	-	х		500
	SB-8 (1st Spill) East Side Wall	"	-	Х		650
	SB-8 (1st Spill) South Side Wall	"	-	X	_	450
	SB-8 (1st Spill) Bottom Hole	14	-	X		1,000

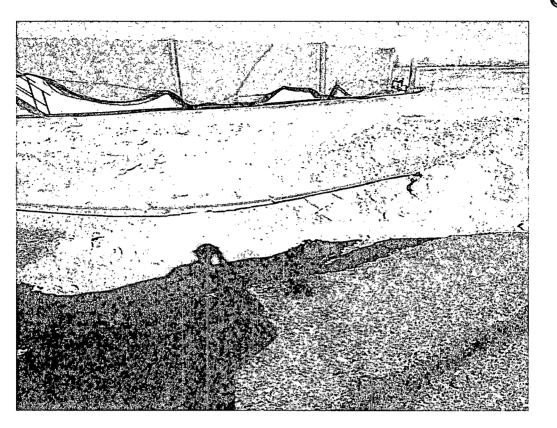
(-) Not Analyzed

.

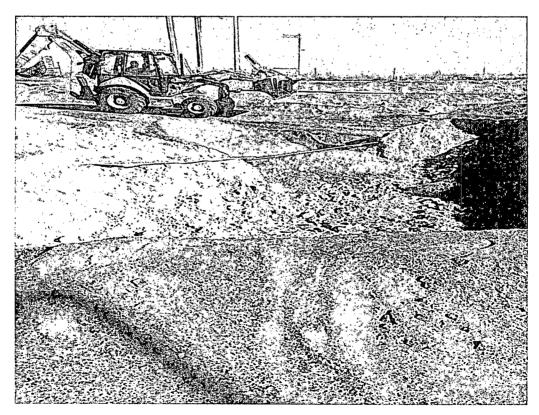
(BEB) Below Excavation Bottom

* CS Field Chlorides

Photos

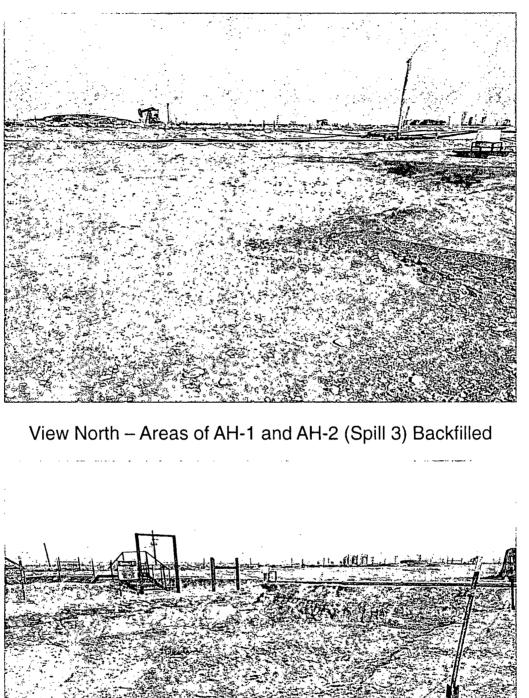


View Northwest - Area of AH-1 (Spill 3) at 3.0'

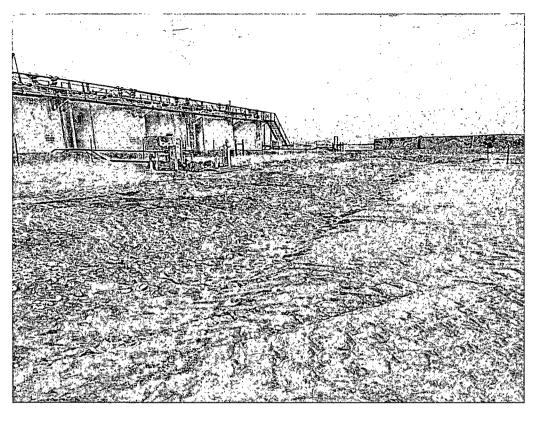


View North – Area of AH-2 (Spill 3) being Backfilled

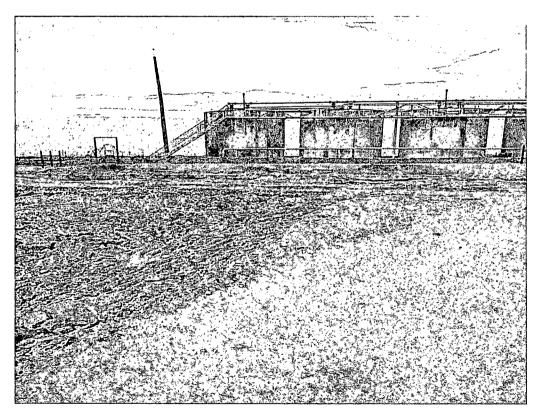
TETRA TECH



View North - Area of SB-1 (Spill 2) at 3.0'

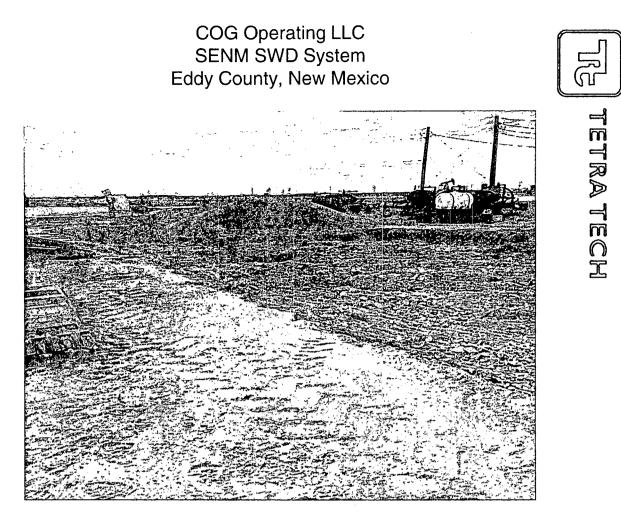


View North – Areas of SB-2 (Spill 1 and Spill 2) at 2.0'

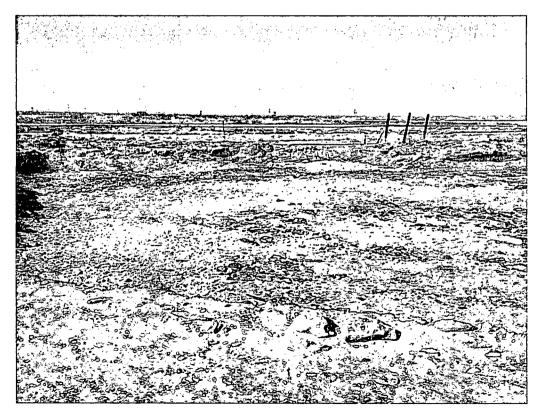


View West – Areas of SB-3 and SB-4 (Spill 1) at 1.0' and 2.0' Respectively



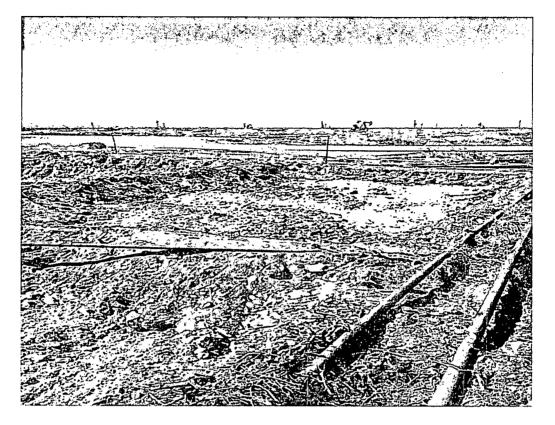


View East - Area of AH-3 and SB-5 (Spill 1) at 2.0'

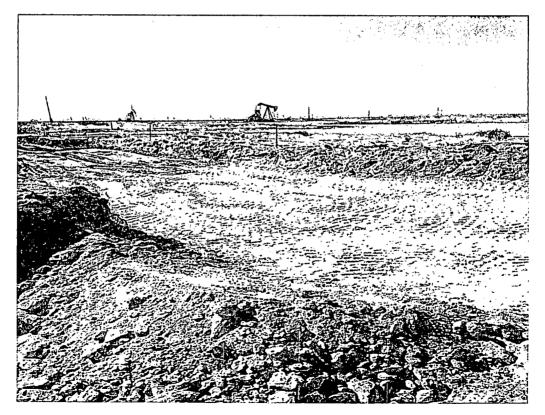


View West – Areas of AH-4 and AH-5 (Spill 2) at 3.0'

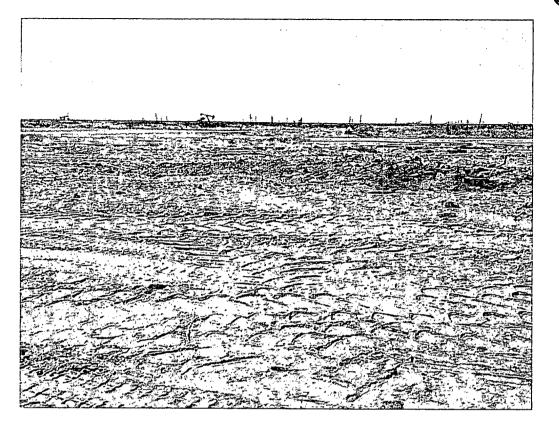
IC TETRA TECH



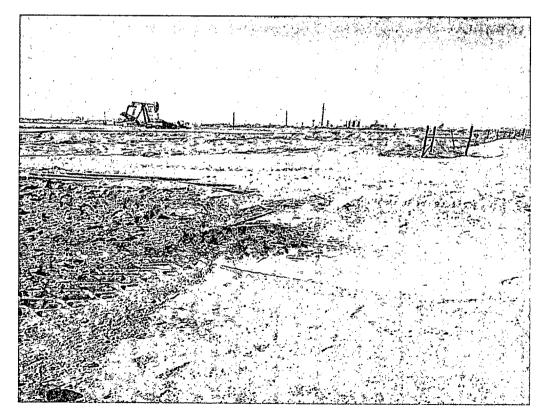
View East - Area of SB-7 (Spill 1) at 2.0'



View Southwest – Area of AH-6 and SB-7 (Spill 1) at 3.5



View West - Area of AH-6 and SB-7 (Spill 1) Backfilled



View North - Area of AH-5 and SB-6 (Spill 1) Backfilled

TETRA TECH

Appendix A

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

Form C-141 Revised October 10, 2003

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

	olo oli, baile	u i e, i ui e o o o		Sa	inta F	e, NM 875	05					
<u> </u>			Rel	ease Notific	atio	n and Co	orrective A	ction	1			
						OPERA	ГOR		🗌 Initi	al Report	\boxtimes	Final Report
Name of Co	ompany C	COG Opera	ting LLC			Contact Ro	bert McNeill			• • •		·
		ois Ave, Mi				Telephone 1	No. (432) 685-4	1332				
Facility Na	ne SENM	1 SWD Syst	em (Nor	thwest Central)		Facility Typ	e Tank Batte	ry				
Surface Ow	ner: Feder	al		Mineral O	wner				Lease 1	No. (API#)		
					TIO	N OF REI	FASE		- L	``		
Unit Letter	Section	Township	Range	Feet from the		1/South Line	Feet from the	Fast/	West Line	County		
N	17	175	30E	i cet nom die	Tioru	vooran Enie		Edust	of est isine		Edd	у
		<u>.</u>		Latitude 32.8530	001° N	Longitud	le 103.959150°	W				
				NAT	URE	OF REL	EASE					
Type of Rele							Release 300 bbl			Recovered 2		
		oduced water	transmiss	ion line		5/12/2010	lour of Occurrenc	e		Hour of Dis 0_5:00pm	covery	
Was Immedia	ate Notice C		Yes [] No 🗌 Not Re	equired	If YES, To Mike Brat	Whom? cher – OCD, Te	rry Gre	egston - BL	.M		
By Whom? J	osh Russo						lour 5/13/2010 4		·		_	
Was a Water	course Reac		Yes 🛛	No		If YES, Vo N/A	lume Impacting t	he Wat	ercourse.			
If a Watercou	irse was Im	pacted, Descr	ibe Fully.	*								
N/A			•									
N/23												
Describe Cau	ise of Proble	em and Reme	dial Actio	n Taken *								- <u>.</u>
The cause of into service.	the release	was due to the	e failure o	f a poly weld on a	6" pro	duced water tr	ansmission line. T	The line	was imme	diately repai	red an	d put back
Describe Are	a Affected a	and Cleanup A	Action Tal	ken *								
		·										
				I and COG was ab eaded south on the								
				ollected samples to								
				ide with clean back								
L hereby certi	fy that the i	nformation gi	ven abow	e is true and compl	ete to t	the best of my	knowledge and u	ndersta	nd that pure	suant to NM		nutes and
				nd/or file certain re								
public health	or the envir	ronment. The	acceptan	ce of a C-141 repo	rt by th	e NMOCD m	arked as "Final R	eport" d	loes not rel	ieve the oper	ator o	f liability
				investigate and re								
		ddition, NMC vs and/or peg u		otance of a C-141 r	report c	loes not reliev	e the operator of i	responsi	ibility for c	ompliance w	ith an	y other
rederal, state.							OIL CON	SFRV	ATION	DIVISIO)N	<u> </u>
	/							JUICY	might	DIVIDIC		
Signature:	_//	_/		A								
Printed Name	:: Ike Tavare	ez Me	ical	- h cu	6	Approved by	District Supervise	or:				
Title: Project	Manager	~~7				Approval Dat	e:		Expiration	Date:		
E-mail Addre	<u>ss: Ike.</u> Tava	arez@TetraTe	ech.com			Conditions of				Attached		
Date: 5-	18-1	Ý	Phone	:: (432) 682-4559						Autached		
A I. A. 1.1*.	1	4-16 11										

Attach Additional Sheets If Necessary

State of New Mexico Energy Minerals and Natural Resources

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

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 IV	D C ·	E NIX 0750				St. Franc			W	ith Rule	side of form
1220 S. St. Fran	icis Dr., Santa	1 Fe, NM 87503)	Sa	anta Fe	, NM 875	05				side of form
			Rel	ease Notifi	cation	and Co	orrective A	ction			
						OPERA	for	🗌 Initi	al Report	\square	Final Report
Name of Co							bert McNeill				<u> </u>
		ois Ave, Mi				~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	No. (432) 685-4				
Facility Nat	me McInt	yre DK Fed	(Northy	west Central)]	Facility Typ	e Tank Batter	ry	<u> </u>		
Surface Ow	ner: Feder	al	· =•	Mineral (Dwner			Lease	No. (API#)	NMN	A-86025
				LOCA	ATION	OF RE	LEASE				
Unit Letter N	Section 17	Township 17S	Range 30E	Feet from the	North/	South Line	Feet from the	East/West Line	County	Eddy	
]	Latitude 32 49.	804° N	Longitu	le 103 59.782°	W			
				NAT	TURE	OF REL	EASE				
Type of Rele							Release 23 bbls		Recovered 2		
Source of Re	elease: Oil T	ank				Date and F 12/15/2010	Iour of Occurrenc)		Hour of Dis 10 8:00am	covery	
Was Immedia	ate Notice C		Yes 🗵	No 🛛 Not R	equired	If YES, To	Whom?				
By Whom?						Date and H	lour	<u> </u>			
Was a Water	course Reac		Yes 🗵	No		If YES, Vo N/A	blume Impacting t	he Watercourse.			
If a Watercou	arse was Im	pacted, Descr	ibe Fully.'	*		l					
N/A											
Describe Cau	ise of Proble	em and Reme	dial Actio	n Taken.*							
					Chambao	and aqualizat	line has been clea	and out			
r ne equanzei	i inte was pi	uggeu causm	g me on a	ank to overnow.	r ne prugi	zeu equanzei	The has been clea	anea out.			
Describe Are	a Affected a	and Cleanup A	Action Tal	ken.*							
Initially 23bb	als of ail wa	s released from	m the oil t	ank and COG wa	s able to	recover 20hł	als with a vacuum	truck. The oil trav	eled south o	n the na	d location
								ollected samples to			
exceeded RR	AL was ren	noved and hau	iled away					grade with clean b			
I hereby certi	ifv that the i	nformation gi	ven above	e is true and comr	lete to th	e hest of my	knowledge and m	nderstand that purs	suant to NM	OCD ru	les and
								tive actions for rel			
								eport" does not rel			
								eat to ground water responsibility for c			
federal, state,				nance of a C-141	report at	ics not renev	e me operator of f	csponsionity for c	omphance w	an any	omer
		11/	$\overline{}$				OIL CONS	SERVATION	DIVISIC)N	
Signature	61	V/ (/ "									
Signature:			bor	h Car	$\sum I$	Approved by	District Supervise	or:			
Printed Name		ez (rent .	n ac							
Title: Project	Manager	, ,			A	Approval Dat	<u>e:</u>	Expiration	Date:		
E-mail Addre			ech.com		(Conditions of	Approval:		Attached		
Date: 5-	-19-1	17	Phone	e: (432) 682-4559)						

* Attach Additional Sheets If Necessary

State of New Mexico Energy Minerals and Natural Resources

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

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

Name of Company COG Operating LLC Contact Robert MeNelli Address 600 W.Illinois A.ex, Mitaland, Texas 79701 Telephone No. (32) 685-4332 Facility Name Northwest Central Tank Battery Facility Type Tank Battery Facility Name Northwest Central Tank Battery Facility Type Tank Battery Lass No. (AP14)30-015-20972 LOCATION OF RELEASE Unit Laire Section Toronsip Range Feet from the North/South Line Feet from: the East/West Line County Eddy Latitude 32 49,817° N Longitude 103 59,765° W NATURE OF RELEASE Type of Release: Oil and Produced Water Volume of Relaxe 160 bbis Volume Receivered 145 bbis Source of Release: Oil and Produced Water Volume of Relaxe 160 bbis Volume Receivered 145 bbis Source of Release: Oil and Produced Water Volume of Relaxe 160 bbis Volume Receivered 145 bbis Source of Release: Oil and Produced Water Volume of Relaxe 160 bbis Volume Receivered 145 bbis Source of Release: Oil and Produced Water Volume of Relaxe 160 bbis Volume Receivered 145 bbis Source of Release: Oil and Produced Water Volume of Relaxe 160 bbis Volume Receivered 145 bbis Source of Release: Oil and Produced Water Volume Of Relaxe 160 bbis Volume Receivered 145 bbis Source of Release: Oil and Produced Water Volume Of Relaxe 160 bbis Volume Receivered 145 bbis Source of Relaxes: Oil and Produced Water Volume Of Relaxes 160 bbis Volume Receivered 145 bbis Source of Relaxes: Oil and Produced Water Volume Receivered 145 bbis Source of Relaxes: Oil and Produced Water Volume Receivered 145 bbis Source of Relaxes: Oil and Produced Water Volume Receivered 145 bbis Source of Relaxes: Oil and Produced Water Volume Receivered 145 bbis Source of Relaxes: Note Core 145 bbis Source of Relaxes: Relaxes: Relaxes: Relaxes: Note Core 145 bbis Source of Relaxes: Relaxes: Relaxes: Relaxes: Relaxes: Rela	1220 0. 01. 114	OID D1. , Ourie		,	Sa	anta F	e, NM 8/3	05					
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Address 600 W. Illingis Ave, Mildind, Texas 79701 Facility Name Northwest Central Tank Battery Facility Name N							OPERA	ГOR		Initial Re	eport	\boxtimes	Final Report
Facility Type Tank Battery Facility Type Tank Battery Surface Owner: Federal Mineral Owner Lease No. (AP(9)30-015-20972 LUIC Letter Section Township Ramge Feet from the Eas/West Line County Luit Letter Section Township Ramge Feet from the North/South Line Feet from the Eas/West Line County Luit Letter Section Township Ramge Feet from the Eas/West Line County Luit Letter Section Township Ramge Feet from the Eas/West Line County LuitLetter Section Township Ramge Feet from the Eas/West Line County LuitLetter Section Market Section North Section Date and Hour of Occurrence 062327012 %22m Was Immediate Notice Given? Yes No Not Required Mike tracker - OCD, Jim Amo - BLAI, Terry Gregaton - BLAI By Whon? Michelle Multins Date and Hour of Go27021 20.002m Mike tracker - OCD, Jim Amo - BLAI, Terry Gregaton - BLAI Date and Hour of Go27021 20.002m Try Section Cance of Problem and Remedial Action Taken.* No No							Contact Ro	bert McNeill					
Surface Owner: Federal Mineral Owner Lease No. (API4)30-015-20972 Link Letter Section Township Range Fest from the North/South Line Fest from the Dest/West Line County Link Letter Section Township Range Fest from the North/South Line Fest from the Dest/West Line County Link Letter Section Township Range Fest from the North/South Line Fest from the Dest/West Line County Link Letter Section Township Range North/South Line Fest from the Dest/West Line County Link Link Letter Order Mater fractors North Receivered Date and Hour of Discovery Dot 25/2012 Dot 2			- <u> </u>										
LOCATION OF RELEASE Unit Letter Section Township Range 175 Other Feet from the North/South Line Feet from the Eddy Latitude 32 49.8175 N Longitude 103 59.765* W NATURE OF RELEASE Type of Release: Oil and Produced Water Volume of Release 160 bbls Volume Recovered 145 bbls Source of Release: IO.0000bl open top tank Date and Hour of Occarrence 00625/2012 Ope25/2012 Op23/2012 Was Immediate Notice Given? Yes No Not Required Wite Bratcher – OCD, Jim Amos – BLM, Terry Gregston – BLM By Whom? Michelic Multins Date and Hour 06/26/2012 Out23and Date and Hour 06/26/2012 Out23and By Whom? Michelic Multins Date and Hour 06/26/2012 Out23and Date and Hour 06/26/2012 Out23and By Whom? Michelic Multins Date and Hour 06/26/2012 <	Facility Nar	ne North	west Centra	l Tank E	Battery		Facility Typ	e Tank Batte	ry				
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Type of Release: Oil and Produced Water Volume of Release: 160 bbb Volume Recovered 145 bbbs Source of Release: 10,000bbl open top lank Date and Hour of Occurrence 06/25/2012 Date and Hour of Occurrence 06/25/2012 9-52am Was Immediate Notice Given? If YES, To Whom? If YES, To Whom? Mite Bratcher - OCD, Jim Amos - BLM, Terry Gregston - BLM By Whom? Michelic Mullins Date and Hour 06/26/2012 10:02am If YES, Volume Impacting the Watercourse. Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. N/A N/A N/A NOC D AITTESIA Describe Cause of Problem and Remedial Action Taken.* N/A NOC D AITTESIA 10,000bbl open top tank overflowed due to water being diverted to open top instead of tank battery, along with an electrical error on alarm system. The valve has been changed to divert water to the correct Northwest Central tanks and the electrical issue has been corrected Describe Area Affected and Cleanup Action Taken.* Initially 800 bbls of fuld were released from the open top water tank and COG was able to recover 700 bbls with a vacuum truck. The spill was contained on the pad location survourding the tunk and measured an area of roughly 123* 2000. Tetra Tech inspected site and collected samples: to define spills extent. Soil that exceeded RRAL, was removed and area of roughly 123* 2000. Tetra Tech inspected site and collected samples: to define spills wettent. Soil that exceeded RRAL, was removed and area of roughly 123* 2000. Tetra Tech inspected site and collected samples					Latitude 32 49.	817° N	Longitud	ie 103 59.765°	W				
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06/25/2012 06/25/2012 9:52am Was Immediate Notice Given? Yes No Not Required By Whom? Michelle Mullins Date and Flour 06/26/2012 10:02am Was a Watercourse Reached? IYES, To Whom? Hitk Bratcher - OCD, Jim Amos - BLM, Terry Gregston - BLM By Whom? Michelle Mullins Date and Flour 06/26/2012 10:02am Was a Watercourse was Impacted. Describe Fully.* N/A N/A RECEIVED JUN 0 4 2014 No 0 4 2014 Describe Cause of Problem and Remedial Action Taken.* NMOCD ARTIESIA 10,000bbl open top tank overflowed due to water being diverted to open top instead of tank battery, along with an electrical error on alarm system. The valve has been changed to divert water to the correct Northwest Central tanks and the electrical issue has been corrected Describe Area Affected and Cleanup Action Taken.* Initially 800 bbls of fluid ware released from the open top water tank and COG was able to recover 700 bbls with a vacuum truck. The spill was contained on the pad location surrounding the tank and area of roughly 12's 200. Tetra Tech inspected size and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Size was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMO													
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valve has been changed to divert water to the correct Northwest Central tanks and the electrical issue has been corrected Describe Area Affected and Cleanup Action Taken.* Initially 800 bbls of fluid were released from the open top water tank and COG was able to recover 700 bbls with a vacuum truck. The spill was contained on the pad location surrounding the tank and measured an area of roughly 125' x 200'. Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local law and/or regulations. Signature: OIL CONSERVATION DIVISION Signature: Approved by District Supervisor: Title: Project Manager Approval Date: Expiration Date: E-mail Address: Ike. Tavarez@TetraTech.com Conditions of Approval: <td>10,000bbl op</td> <td>en top tank</td> <td>overflowed di</td> <td>ue to wate</td> <td>r being diverted t</td> <td>o open</td> <td>top instead of</td> <td>tank battery, alon</td> <td>ي. g with an elec</td> <td>rical erro</td> <td>or on ala</td> <td>rm sys</td> <td>tem. The</td>	10,000bbl op	en top tank	overflowed di	ue to wate	r being diverted t	o open	top instead of	tank battery, alon	ي. g with an elec	rical erro	or on ala	rm sys	tem. The
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Signature: OIL CONSERVATION DIVISION Printed Name: Ike Tavarez Approved by District Supervisor: Title: Project Manager Approval Date: Expiration Date: E-mail Address: Ike. Tavarez@TetraTech.com Conditions of Approval: Attached Date: Supervision Phone: (432) 682-4559	extent. Soil th	hat exceeded	RRAL was r	removed a	ind hauled away f	or prop	er disposal. Si	te was then broug	ht up to surfac	e grade w	with clea	n back	cfill material.
regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Signature: Printed Name: Ike Tavarez Mutached Approval Date: E-mail Address: Ike. Tavarez@TetraTech.com Date: 5-MCM Phone: (432) 682-4559 Conditions of Approval: Approval Date: Conditions of Approval: Attached Conditions of Approval: Attached Conditions of Approval: Conditions o	Tetra Tech pr	epared clos	ure report and	submitte	d to NMOCD for	review							
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Signature: OIL CONSERVATION DIVISION Signature: Approved by District Supervisor: Printed Name: Ike Tavarez (McGrt An Cocc) Approved by District Supervisor: Title: Project Manager Approval Date: E-mail Address: Ike.Tavarez@TetraTech.com Conditions of Approval: Date: 5-15-11 Phone: (432) 682-4559 Approval Date:	or the enviror	iment. In a	ddition, NMO	CD accep									
Signature: Image: Ike Tavarez (Image: Ik	federal, state,	or local law	va and/or regu	lations.		r	<u> </u>			~~~~~		.	
Printed Name: Ike Tavarez (MgCrt An CCC) Approved by District Supervisor: Title: Project Manager Approval Date: Expiration Date: E-mail Address: Ike. Tavarez@TetraTech.com Conditions of Approval: Attached [] Date: 5-15-14-14-14-14-14-14-14-14-14-14-14-14-14-	OIL CONSERVATION DIVISION												
Printed Name: Ike Tavarez (IAGCM TAV GUG) Approval Date: Expiration Date: Title: Project Manager Approval Date: Expiration Date: E-mail Address: Ike. Tavarez@TetraTech.com Conditions of Approval: Attached [] Date: 5-/5-/C Phone: (432) 682-4559 Attached []	Signature: 4	<u>. 1/</u>		$\underline{}$	_Λ								
Title: Project Manager Approval Date: Expiration Date: E-mail Address: Ike. Tavarez@TetraTech.com Conditions of Approval: Attached Date: 5-/5-/4- Phone: (432) 682-4559	Drintod Marris	Printed Name: the Tayarez (Mara + for Cora) Approved by District Supervisor:											
E-mail Address: Ike.Tavarez@TetraTech.com Conditions of Approval: Attached	_r med wante	, IKC TAVAR	I Inge	\mathcal{M}	ir celof					·· 			
Date: 5-/5- 1 Phone: (432) 682-4559	Title: Project	Manager					Approval Dat	e:	Expira	ion Date:	:	- <u>-</u>	
Date: 5-15- C- Phone: (432) 682-4559	E-mail Addre	ss: Ike.Tava	urez@TetraTe	ch.com			Conditions of	`Approval:			ttached		
	Data: 4	15- K	2 ni .	. (120) (0)	2 4550						naciicu	L]	
Attach Additional Sheets If Necessary				. (432) 08 arv	2-4339								

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 Form C-141 Revised October 10, 2003

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

Release Notification and Corrective Action

7 7.11		
Pat Ellis		
No. 432-230-0077		
pe Tank Battery		
	No. 432-230-0077	No. 432-230-0077

Surface Owner	Federal	Mineral Owner	Lease No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	17	175	30E					Eddy
	1							

Latitude 32 49.840 Longitude 103 59.763

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 300bbls	Volume Recovered 200bbis			
Source of Release 6" produced water transmission line	Date and Hour of Occurrence	Date and Hour of Discovery			
······································	05/12/2010	05/12/2010 5:00 p.m.			
Was Immediate Notice Given?	If YES, To Whom?				
🛛 Yes 🗋 No 🗋 Not Required		Bratcher – OCD			
		iregston - BLM			
By Whom? Josh Russo	Date and Hour 05/13/2010	4:09 p.m.			
Was a Watercourse Reached?	If YES, Volume Impacting the Wat	ercourse.			
If a Watercourse was Impacted, Describe Fully.*					
Describe Cause of Problem and Remedial Action Taken.*					
The cause of the release was due to the failure of a poly weld on a 6" pro-	luced water transmission line. The line	e was immediately repaired and put back			
into service.					
Describe Area Affected and Cleanup Action Taken.*					
Describe Area Anected and Cleanup Action Taken.*					
Initially 300bbls or produced water was released and we were able to rece	wer 200 ble with a vacuum truck. The	a main area of the mission on the and			
location had the dimensions of 150'x130'. A stream then headed south o					
end of the pad and into the pasture. The stream into the pasture went rou					
FEDERAL #3, Unit N, 17-175-30E, 660 FSL 1980 FWL 32-82917 - 10.	3.99629. AP# 30-015-04186) Tema T	ech will sample the spill site area to			
delineate any possible contamination from the release and we will present					
significant remediation.	· · · · · · · · · · · · · · · · · · ·				
I hereby certify that the information given above is true and complete to t					
regulations all operators are required to report and/or file certain release r	otifications and perform corrective act	ions for releases which may endanger			
public health or the environment. The acceptance of a C-141 report by th					
should their operations have failed to adequately investigate and remediat					
or the environment. In addition, NMOCD acceptance of a C-141 report of	loes not relieve the operator of respons	ibility for compliance with any other			
federal, state, or local laws and/or regulations.					
	<u>OIL CONSERV</u>	ATION DIVISION			
simmin (
Signature:					
Printed Name: Josh Russo	Approved by District Supervisor.				
Printed Ivalue:					
Title: HSE Coordinator	Approval Date:	Expiration Date:			
	Opporat Date:	CAPARITAL DATE:			
E-mail Address: irusso@conchoresources.com	Conditions of Approval;				
E-India Undressi (1855046/millionarcesiona)	Conditions of Approval.	Attached			

Date: 05/21/2010 Phone: * Attach Additional Sheets If Necessary 432-212-2399

District [1625 N. French Dr., Hobbs, NM 88240 District 1] 1301 W. Grand Avenue, Artesia, NM 88210 <u>District III</u> 1000 Rio Brazos Road, Aztee, NM 87410 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised October 10, 2003

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

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

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			Kel	ease Notifie	catio	n and Co	orrective A	ction				
					OPERATOR Initial Report						Final Report	
Name of Co	mpany	COG OP	ERATIN	GLLC		Contact		at Ellis				
Address				dland, TX 7970		Telephone 1		230-00				
Facility Nat	ne McIn	tyre DK Fed	eral (No	thwest Central)		Facility Typ	Tan	k Batte	ry			
Surface Ow	ner Fe	deral		Mineral C	Iwner				Lease N	Io. NMN	M-8602	25
			_	LOCA	ATIO	N OF REJ	LEASE					
Unit Letter N	Section 17	Township 17S	Range 30E	Feet from the	North	/South Line	Feet from the	East/V	Vest Line	County	Eddy	
				Latitude 32 (Longitt OF RELI	nde 103 59.782 EASE					
Type of Rele	asc Oil					and the second	Release 23bbls		Volume I	ecovered	20bbls	
Source of Re		Fank				Date and H 12/15/2010	four of Occurrenc	:E	Date and	Hour of Di 0 8:00a.r	iscovery	
							Whom?					
By Whom?						Date and Hour						
Was a Water	course Read		Yes 🛛	No		If YES, Volume Impacting the Watercourse.						
If a Watercon	irse was Im	pacted, Descr	ibe Fully.	k		_I					<u></u>	
Describe Cau	se of Probl	em and Reme	dial Action	n Taken.*								
The equalize	line was pl	lugged causia	g the oil te	ink to overflow. '	The plu	gged equalized	r line has been cle	aned ou	t.			
Describe Are	a Affected a	and Cleanup A	ction Tak	ten.*								
x 100', and th	Initially 23bbis of oil was released from the oil tank and we were able to recover 20bbis with a vacuum truck. The oil traveled south on the pad location 3' x 100', and then off the pad roughly 30' towards a prior spill location. All oil has been picked up with a vacuum truck, pad material has been scraped of contaminates, tanks and lines have been steamed. (Well location on the same pad, McIntyre Federal #6, (API#) 30-015-20972).									d location 3' scraped of		
regulations al public health should their o or the environ	l operators or the envir operations h iment. In a	are required to conment. The ave failed to a	o report an acceptance dequately CD accep	is true and comp ad/or file certain r te of a C-141 repo investigate and r tance of a C-141	clease a ort by th emediat	otifications ar NMOCD ma contamination	nd perform correct arked as "Final R on that pose a thr	tive acti eport" d eat to gr	ons for reli oes not reli ound water	cases which eve the op the surface w	h may en crator of vater, hu	ndanger Fliability man health
OIL CONSERVATION DIVISION												
Signature:	-/-	_ 1	$\langle -$		Ì							
Printed Name	/	Josh	Russo			Approved by	District Supervise	or:				
Title:		HSE Co	ordinator			Approval Dat	e:		Expiration	Date:		
E-mail Addre		jrusso@conc	haresourc	es.com		Conditions of	Approval:			Attache	a 🖸	
Date: 12/	17/2010	Pi	ione:	432-212-2399								

* Attach Additional Sheets If Necessary

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#1452

District 1 1625 N. French Dr., Hobbs, NM 88240 District III 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

Form C-141 Revised October 10, 2003

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

Release Notification and Corrective Action

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ry		
	ery	

Surface Owner	Federal	Mineral Owner	Lease No. (API#) 30-015-20972
			McIntyre Federal #6 - Closest well

LOCATION OF RELEASE Unit Letter Section Township Range Feet from the North South Line Feet from the East/West Line County N 17 17S 30E Feet from the North South Line Feet from the Eddy

Latitude 32 49.817 Longitude 103 59.765

NATURE OF RELEASE

Type of Release Oil and Produced water	Volume of Release 700bbls oil 100bbls produced water	Volume Recovered 650bbls oil 50bbls produced water						
Source of Release 10,000bbl open top tank	Date and Hour of Occurrence 06 25 2012	Date and Hour of Discovery 06 25 2012 9:52 a.m.						
Was Immediate Notice Given?	d If YES, To Whom? Mike Bratcher-OCD Jim Amos-BLM Terry Gregston-BLM							
By Whom? Michelle Mullins	Date and Hour 06/26/2012 10:02	a.m.						
Was a Watercourse Reached?	If YES. Volume Impacting the Wate	ercourse.						
If a Watercourse was Impacted, Describe Fully.*								
Describe Cause of Problem and Remedial Action Taken.*								
10,000 bbl open top tank at the Northwest Central Tank Battery overflowe electrical error on alarm system. The valve has been changed to divert wa corrected.								
Describe Area Affected and Cleanup Action Taken.*								
Initially 800bbls of fluid were released from the open top water tank and we were able to recover 700bbls with a vacuum truck. The entire spill was contained on the pad location surrounding the tank and measured an area of roughly 125' x 200'. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD / BLM for approval prior to any significant remediation work.								
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.								
OIL CONSERVATION DIVISION								
Signature: Approved by District Supervisor:								
Title: HSE Coordinator A	Approval Date: E	Expiration Date:						
E-mail Address: jrusso@conchoresources.com C	Conditions of Approval:	Attached						

 Date:
 06 29/2012
 Phone:

 * Attach Additional Sheets If Necessary

432-212-2399

Appendix B

Water Well Data Average Depth to Groundwater (ft) SENM SWD System (Northwest Central) Eddy County, New Mexico

	16 Sc	outh		29 East		_	16 S	outh		30 East		_	16 \$	South	3	l East	
	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2 290	1
	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	1.
																	28
8	17	16	15	14 220	13	18	17	16	15	14	13	18	17	16	15	14 113	1:
				dry		·										314	
9	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
10																	
כ	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25
1	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36
											1	290	1			1	
	17 Sc	outh		29 East		_	17 S	outh		30 East			17 :	South		I 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	12	7	- 18	9	10	11	1:
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			80							1	1						
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	208																
1	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	30
	-			153											271		
	18 So		3	29 East	1	6	18 5	outh	3	2 2	1	6	18:	South	3	East	Tī
															-		
	8	9	10	5 11	12	7	8	9	10	11	12	7	8	9	10	11	12
					1												4
	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15 98	14	1:
8																317	
8				100	24	19	20	21	22	23 44	24	19	20	21	22	23	2
	20	21	22	23		E									1	1	
8 9	20	21	22	23	158	1									1		
)	20 29	21 28	22 27	23		30	29	28	27	26	25	30	29	28	27	26	2
					158	30	29	28	27	26	25 36	30 31	29	28	27	26 35	2

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

Field water level

New Mexico Water and Infrastructure Data System

Appendix C

Work Order: 10062804

Summary Report

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

Work Order: 10062804

Project Location:	Eddy County, NM
Project Name:	COG/SENM SWD System
Project Number:	114-6400547

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
235925	AH-1 0-1'	soil	2010-06-23	00:00	2010-06-25
235926	AH-1 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235927	AH-1 2-2.5'	soil	2010-06-23	00:00	2010-06-25
235928	AH-2 0-1'	soil	2010-06-23	00:00	2010-06-25
235929	AH-2 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235930	AH-2 2-2.5'	soil	2010-06-23	00:00	2010-06-25
235931	AH-2 3-3.5'	soil	2010-06-23	00:00	2010-06-25
235932	AH-2 4-4.5'	soil	2010-06-23	00:00	2010-06-25
235933	AH-2 5-5.5'	soil	2010-06-23	00:00	2010-06-25
235934	AH-2 6-6.5'	soil	2010-06-23	00:00	2010-06-25
235935	AH-2 7-7.5'	soil	2010-06-23	00:00	2010-06-25
235936	AH-2 8-8.5'	soil	2010-06-23	00:00	2010-06-25
235937	AH-3 0-1'	soil	2010-06-23	00:00	2010-06-25
235938	AH-4 0-1'	soil	2010-06-23	00:00	2010-06-25
235939	AH-4 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235940	AH-4 2-2.5'	soil	2010-06-23	00:00	2010-06-25
235941	AH-4 3-3.5'	soil	2010-06-23	00:00	2010-06-25
235947	AH-5 0-1'	soil	2010-06-23	00:00	2010-06-25
235948	AH-5 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235949	AH-6 0-1'	soil	2010-06-23	00:00	2010-06-25
235950	AH-7 0-1'	soi]	2010-06-23	00:00	2010-06-25
235951	AH-7 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235952	AH-7 2-2.5'	soil	2010-06-23	00:00	2010-06-25

	BTEX			TPH DRO - NEW	TPH GRO	
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(ms/Ks)	(mg/Kg)
285925 - AH-1 0-1'	<0.0200	<0.0200	< 0.0200	< 0.0200	<50.0	<2.00

continued ...

Report Date: July 2, 2010

Work Order: 10062804

... continued

r r			BTEX		TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
285928 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
235937 - AH-8 0-1'	<0.100	<0.100	<0.100	<0.100	366	<10.0
235938 - AH-4 0-1'	<0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<2.00
285947 - AH-5 0-1'	<0.0200	<0.0200	<0.0200	< 0.0200	<50.0	<2.00
235949 - AH-6 0-1'	< 0.0200	< 0.0200	<0.0200	< 0.0200	<50.0	<2.00
235950 - AH-7 0-1'	< 0.0200	<0.0200	< 0.0200	<0.0200	<50.0	<2.00
Sample: 235925 - AH	H-1 0-1'					
Param	Flag		Result		Units	RL
Chloride			15800		mg/Kg	4.00
Sample: 235926 - AF			. .			
Param	Flag		Result		Units	RL
Chloride			6220		mg/Kg	4.00
Sample: 235927 - AF Param Chloride	I-1 2-2.5' Flag		Result 7440		Units mg/Kg	RL 4.00
Sample: 235928 - AF	I-2 0-1'					**************************************
Param	Flag		Result		Units	RL
Chloride	×		4400		mg/Kg	4.00
Sample: 235929 - AH	E.9.1_1.5'	, <u>.</u>				
Sample: 200828 - ML			. .		** •.	D 7
n			Result		Units	RL
Param	Flag	·····				
	Flag		6410		mg/Kg	4.00
Param Chloride Sample: 235930 - AF						
Chloride						

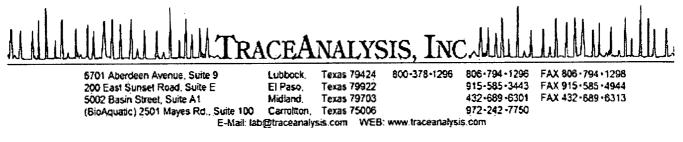
Report Date: July 2, 2010		Work Order: 10062804	Page	Number: 3 of 5
Sample: 235931 -	AH-2 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		5860	mg/Kg	4.00
Sample: 235932 -	AH-2 4-4.5'			
Param	Flag	Result	Units	RL
Chloride	· · · · · · · · · · · · · · · · · · ·	3140	mg/Kg	4.00
Sample: 235933 -	AH-2 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		2270	mg/Kg	4.00
Sample: 235934 -	AH-2 6-6.5'			
Param	Flag	Result	Units	RL
Chloride		1230	mg/Kg	4.00
Sample: 235935 -	AH-2 7-7.5'			
Param	Flag	Result	Units	RL
Chloride		314	mg/Kg	4.00
Sample: 235936 -	AH-2 8-8.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 235937 -	AH-3 0-1'			
Param	Flag	Result	Units	RL
Chloride		1850	mg/Kg	4.00
Sample: 235938 -	AH-4 0-1'			
Param	Flag	Result	Units	RL
Chloride		6220	mg/Kg	4.00

Report Date: July 2, 2010		Work Order: 10062804	Pag	e Number: 4 of 5
Sample: 235939 - A	H-4 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		3140	mg/Kg	4.00
Sample: 235940 - A	H-4 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		614	mg/Kg	4.00
Sample: 235941 - Al	H-4 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		287	mg/Kg	4.00
Sample: 235947 - Al				
Param	Flag	Result	Units	RL
Chloride		1650	mg/Kg	4.00
Sample: 235948 - Al	H-5 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		3240	mg/Kg	4.00
Sample: 235949 - AI	I-6 0-1'			
Param	Flag	Result	Units	RL
Chloride		2420	mg/Kg	4.00
Sample: 235950 - AH	I-7 0-1'			
Param	Flag	Result	Units	RL
Chloride		2800	mg/Kg	4.00
Sample: 235951 - AF	I-7 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		4880	mg/Kg	4.00

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Report Date: July 2, 2010		Work Order: 10062804		Page Number: 5 of 5
Sample: 235952 -	AH-7 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		6240	mg/Kg	4.00

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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: August 10, 2012

Work Order: 12080309

Project Location:Eddy Co., NMProject Name:COG/NW Central Tank Battery (CTB)Project Number:114-6401452

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

	v .		Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
305684	AH-1 0-1'	soil	2012-07-31	00:00	2012-08-02
305685	AH-1 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305686	AH-1 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305687	AH-1 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305688	AH-1 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305689	AH-2 0-1'	soil	2012-07-31	00:00	2012-08-02
305690	AH-2 1-1.5 ³	soil	2012-07-31	00:00	2012-08-02
305691	AH-2 1.5-2'	soil	2012-07-31	00:00	2012-08-02
305692	AH-3 0-1'	soil	2012-07-31	00:00	2012-08-02
305693	AH-3 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305694	AH-3 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305695	AH-3 3-3.5 [,]	soil	2012-07-31	00:00	2012-08-02
305696	AH-3 4-4.5 [']	soil	2012-07-31	00:00	2012-08-02
305697	AH-3 5-5.5'	soil	2012-07-31	00:00	2012-08-02
305698	AH-4 0-1'	soil	2012-07-31	00:00	2012-08-02
305699	AH-4 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305700	AH-4 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305701	AH-4 3-3.5'	soil	2012-07-31	00:00	2012-08-02

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
305702	AH-4 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305703	AH-4 5-5.5'	soil	2012-07-31	00:00	2012-08-02

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 29 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

Summary Report

Ikc Tavarcz Tetra Tech 1910 N. Big Spring Street Midland, TX 79705

Report	Date:	August	10,	2012	
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Work Order: 12080309

Project Location:	Eddy Co., NM
Project Name:	COG/NW Central Tank Battery (CTB)
Project Number:	114-6401452

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
305684	AH-1 0-1'	soil	2012-07-31	00:00	2012-08-02
305685	AH-1 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305686	AH-1 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305687	AH-1 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305688	AH-1 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305689	AH-2 0-1'	soil	2012-07-31	00:00	2012-08-02
305690	AH-2 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305691	AH-2 1.5-2'	soil	2012-07-31	00:00	2012-08-02
305692	AH-3 0-1'	soil	2012-07-31	00:00	2012-08-02
305693	AH-3 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305694	AH-3 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305695	AH-3 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305696	AH-3 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305697	AH-3 5-5.5'	soil	2012-07-31	00:00	2012-08-02
305698	AH-4 0-1'	soil	2012-07-31	00:00	2012-08-02
305699	AH-4 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305700	AH-4 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305701	AH-4 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305702	AH-4 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305703	AH-4 5-5.5'	soil	2012-07-31	00:00	2012-08-02

	BTEX			TPH DRO - NEW	TPH GRO	
	Benzene	Tolucne	Ethylbenzene	Xylenc	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
305684 - AH-1 0-1'	<0.0200	< 0.0200	<0.0200	< 0.0200	<50.0	<4.00
305689 - AH-2 0-1'	< 0.0200	<0.0200	<0.0200	<0.0200	385	<4.00
305692 - AH-3 0-1'	<0.0200	<0.0200	< 0.0200	< 0.0200	<50.0	<4.00
305698 - AH-4 0-1'	<0.0200	<0.0200	< 0.0200	<0.0200	76.3	<4.00

Report Date: August 10, 2012		Work Order: 12080309	Page	Page Number: 2 of 4	
Sample: 305684 - A	AH-1 0-1'				
Param	Flag	Result	Units	RL	
Chloride		430	mg/Kg	4	
Sample: 305685 - A	AH-1 1-1.5'				
Param	Flag	Result	Units	RL	
Chloride		860	mg/Kg	4	
Sample: 305686 - A	H-1 2-2.5'				
Param	Flag	Result	Units	RL	
Chloride		2460	mg/Kg	4	
Sample: 305687 - A	AH-1 3-3.5'				
Param	Flag	Result	Units	RL	
Chloride		1500	mg/Kg	4	
Sample: 305688 - A	AH-1 4-4.5'				
Param	Flag	Result	Units	RL	
Chloride		2650	mg/Kg	4	
Sample: 305689 - A	.H-2 0-1'				
Param	Flag	Result	Units	RL	
Chloride		3850	mg/Kg	4	
Sample: 305690 - A	.H-2 1-1.5'				
Param	Flag	Result	Units	RL	
Chloride		2780	mg/Kg	4	
Sample: 305691 - A	H-2 1.5-2'				
Param	Flag	Result	Units	RL	
Chloride	. <u></u>	1840	mg/Kg	4	

Report Date: August 10, 2012		Work Order: 12080309	Pag	ze Number: 3 of 4
Sample: 305692	AH-3 0-1'			
Paranı	Flag	Result	Units	RL
Chloride		2600	mg/Kg	4
Sample: 305693	AH-3 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		2730	mg/Kg	4
Sample: 305694	AH-3 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		2850	mg/Kg	4
Sample: 305695	AH-3 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		3830	mg/Kg	4
Sample: 305696 - J	AH-3 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		3630	mg/Kg	4
Sample: 305697 - A	AH-3 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		1850	mg/Kg	4
Sample: 305698 - A	AH-4 0-1'			
Param	Flag	Result	Units	RL
Chloride		5650	mg/Kg	4
Sample: 305699 - A	AH-4 1-1.5'			
Param	Flag	Result	Units	RL
Chloride	0	6430	mg/Kg	4

Report Date: August 10, 2012		Work Order: 12080309	Pag	e Number: 4 of 4
Sample: 305700	- AH-4 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		2060	mg/Kg	4
Sample: 305701	- AH-4 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		443	mg/Kg	4
Sample: 305702	- AH-4 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		231	mg/Kg	4
Sample: 305703	- AH-4 5-5.5'			
Param	Flag	Rcsult	Units	RL
Chloride		636	mg/Kg	4

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6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132

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FAX 915•585•4944 FAX 432 • 689 • 6313

WBENC: 237019

1752439743100-86536 HUB: NCTRCA WFWB38444Y0909

Certifications

DBE: VN 20657

NELAP Certifications

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

T104704221-08-TX El Paso: LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

ς.

Report Date: August 30, 2010

Work Order: 10082003

Project Location: Eddy County, NM Project Name: COG/SENM SWD System 114-6400547 Project Number:

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
241833	SB-1 1'	soil	2010-08-17	00:00	2010-08-20
241834	SB-1 3'	soil	2010-08-17	00:00	2010-08-20
241835	SB-1 5'	soil	2010-08-17	00:00	2010-08-20
241836	SB-1 7'	soil	2010-08-17	00:00	2010-08-20
241837	SB-1 10'	soil	2010-08-17	00:00	2010-08-20
241838	SB-1 15'	soil	2010-08-17	00:00	2010-08-20
241839	SB-1 20'	soil	2010-08-17	00:00	2010-08-20
241842	SB-2 1'	soil	2010-08-17	00:00	2010-08-20
241843	SB-2 3'	soil	2010-08-17	00:00	2010-08-20
241844	SB-2 5'	soil	2010-08-17	00:00	2010-08-20

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
241845	SB-2 7'	soil	2010-08-17	00:00	2010-08-20
241846	SB-2 10'	soil	2010-08-17	00:00	2010-08-20
241847	SB-2 15'	soil	2010-08-17	00:00	2010-08-20
241848	SB-2 20'	soil	2010-08-17	00:00	2010-08-20
241849	SB-3.1'	soil	2010-08-17	00:00	2010-08-20
241850	· SB-3 3'	soil	2010-08-17	00:00	2010-08-20
241851	SB-3 5'	soil	2010-08-17	00:00	2010-08-20
241852	SB-3 7'	soil	2010-08-17	00:00	2010-08-20
241853	SB-3 10'	soil	2010-08-17	00:00	2010-08-20
241854	SB-3 15'	soil	2010-08-17	00:00	2010-08-20
241857	SB-4 1'	soil	2010-08-17	00:00	2010-08-20
241858	SB-4 3'	soil	2010-08-17	00:00	2010-08-20
241859	SB-4 5'	soil	2010-08-17	00:00	2010-08-20
241860	SB-4 7'	soil	2010-08-17	00:00	2010-08-20
241861	SB-4 10'	soil	2010-08-17	00:00	2010-08-20
241862	SB-4 15'	soil	2010-08-17	00:00	2010-08-20
241863	SB-4 20'	soil	2010-08-17	00:00	2010-08-20
241864	SB-4 25'	soil	2010-08-17	00:00	2010-08-20
241865	SB-4 30'	soil	2010-08-17	00:00	2010-08-20
241867	SB-5 1'	soil	2010-08-18	00:00	2010-08-20
241868	SB-5 3'	soil	2010-08-18	00:00	2010-08-20
241869	SB-5 5'	soil	2010-08-18	00:00	2010-08-20
241870	SB-5 7'	soil	2010-08-18	00:00	2010-08-20
241871	SB-5 10'	soil	2010-08-18	00:00	2010-08-20
241872	SB-5 15'	soil	2010-08-18	00:00	2010-08-20
241873	SB-5 20'	soil	2010-08-18	00:00	2010-08-20
241876	SB-6 1'	soil	2010-08-18	00:00	2010-08-20
241877	SB-6 3'	soil	2010-08-18	00:00	2010-08-20
241878	SB-6 5'	soil	2010-08-18	00:00	2010-08-20
241879	SB-6 7'	soil	2010-08-18	00:00	2010-08-20
241880	SB-6 10'	soil	2010-08-18	00:00	2010-08-20
241881	SB-6 15'	soil	2010-08-18	00:00	2010-08-20
241882	SB-6 20'	soil	2010-08-18	00:00	2010-08-20
241883	SB-7 1'	soil	2010-08-18	00:00	2010-08-20
241884	SB-7 3'	soil	2010-08-18	00:00	2010-08-20
241885	SB-7 5'	soil	2010-08-18	00:00	2010-08-20
241886	SB-7 7'	soil	2010-08-18	00:00	2010-08-20
241887	SB-7 10'	soil	2010-08-18	00:00	2010-08-20
241888	SB-7 15'	soil	2010-08-18	00:00	2010-08-20
241889	SB-7 20'	soil	2010-08-18	00:00	2010-08-20
241890	SB-7 25'	soil	2010-08-18	00:00	2010-08-20
241891	SB-7 30'	soil	2010-08-18	00:00	2010-08-20
241892	SB-8 1'	soil	2010-08-18	00:00	2010-08-20
241893	SB-8 3'	soil	2010-08-18	00:00	2010-08-20
241894	SB-8 5'	soil	2010-08-18	00:00	2010-08-20
241895	SB-8 7'	soil	2010-08-18	00:00	2010-08-20
			re 2 of 44		

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
241896	SB-8 10'	soil	2010-08-18	00:00	2010-08-20
241897	SB-8 15'	soil	2010-08-18	00:00	2010-08-20
241898	SB-8 20'	soil	2010-08-18	00:00	2010-08-20
241899	SB-8 25'	soil	2010-08-18	00:00	2010-08-20
241900	SB-8 30'	soil	2010-08-18	00:00	2010-08-20
241901	SB-8 40'	soil	2010-08-18	00:00	2010-08-20

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

Michael abel

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

Standard Flags

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

Summary Report

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

Report Date:	August 30, 2010	
hepoir Dave.	August 30, 2010	

Work Order: 10082003

Project Location:	Eddy County, NM
Project Name:	COG/SENM SWD System
Project Number:	114-6400547

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
241833	SB-1 1'	soil	2010-08-17	00:00	2010-08-20
241834	SB-1 3'	soil	2010-08-17	00:00	2010-08-20
241835	SB-1 5'	soil	2010-08-17	00:00	2010-08-20
241836	SB-1 7'	soil	2010-08-17	00:00	2010-08-20
241837	SB-1 10'	soil	2010-08-17	00:00	2010-08-20
241838	SB-1 15'	soil	2010-08-17	00:00	2010-08-20
241839	SB-1 20'	soil	2010-08-17	00:00	2010-08-20
241842	SB-2 1'	soil	2010-08-17	00:00	2010-08-20
241843	SB-2 3'	soii	2010-08-17	00:00	2010-08-20
241844	SB-2 5'	soil	2010-08-17	00:00	2010-08-20
241845	SB-2 7'	soil	2010-08-17	00:00	2010-08-20
241846	SB-2 10'	soil	2010-08-17	00:00	2010-08-20
241847	SB-2 15'	soil	2010-08-17	00:00	2010-08-20
241848	SB-2 20'	soil	2010-08-17	00:00	2010-08-20
241849	SB-3 1'	soil	2010-08-17	00:00	2010-08-20
241850	SB-3 3'	soil	2010-08-17	00:00	2010-08-20
241851	SB-3 5'	soil	2010-08-17	00:00	2010-08-20
241852	SB-3 7'	soil	2010-08-17	00:00	2010-08-20
241853	SB-3 10'	soil	2010-08-17	00:00	2010-08-20
241854	SB-3 15'	soil	2010-08-17	00:00	2010-08-20
241857	SB-4 1'	soil	2010-08-17	00:00	2010-08-20
241858	SB-4 3'	soil	2010-08-17	00:00	2010-08-20
241859	SB-4 5'	soil	2010-08-17	00:00	2010-08-20
241860	SB-4 7'	soil	2010-08-17	00:00	2010-08-20
241861	SB-4 10'	soil	2010-08-17	00:00	2010-08-20
241862	SB-4 15'	soli	2010-08-17	00:00	2010-08-20
241863	SB-4 20'	soil	2010-08-17	00:00	2010-08-20
241864	SB-4 25'	soil	2010-08-17	00:00	2010-08-20
241865	SB-4 30'	soil	2010-08-17	00:00	2010-08-20
241867	SB-5 1'	soil	2010-08-18	00:00	2010-08-20

Report Date: August 30, 2010

Work Order: 10082003

Page Number: 2 of 10

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
241868	SB-5 3'	soil	2010-08-18	00:00	2010-08-20
241869	SB-5 5'	soil	2010-08-18	00:00	2010-08-20
241870	SB-5 7'	soil	2010-08-18	00:00	2010-08-20
241871	SB-5 10'	soil	2010-08-18	00:00	2010-08-20
241872	SB-5 15'	soil	2010-08-18	00:00	2010-08-20
241873	SB-5 20'	soil	2010-08-18	00:00	2010-08-20
241876	SB-6 1'	soil	2010-08-18	00:00	2010-08-20
241877	SB-6 3'	BOIL	2010-08-18	00:00	2010-08-20
241878	SB-6 5'	soil	2010-08-18	00:00	2010-08-20
241879	SB-6 7'	soil	2010-08-18	00:00	2010-08-20
241880	SB-6 10'	soil	2010-08-18	00:00	2010-08-20
241881	SB-6 15'	soil	2010-08-18	00:00	2010-08-20
241882	SB-6 20'	soil	2010-08-18	00:00	2010-08-20
241883	SB-7 1'	soil	2010-08-18	00:00	2010-08-20
241884	SB-7 3'	soil	2010-08-18	00:00	2010-08-20
241885	SB-7 5'	soil	2010-08-18	00:00	2010-08-20
241886	SB-7 7'	soìl	2010-08-18	00:00	2010-08-20
241887	SB-7 10'	soil	2010-08-18	00:00	2010-08-20
241888	SB-7 15'	soil	2010-08-18	00:00	2010-08-20
241889	SB-7 20'	soil	2010-08-18	00:00	2010-08-20
241890	SB-7 25'	soil	2010-08-18	00:00	2010-08-20
241891	SB-7 30'	soil	2010-08-18	00:00	2010-08-20
241892	SB-8 1'	soil	2010-08-18	00:00	2010-08-20
241893	SB-8 3'	fioa	2010-08-18	00:00	2010-08-20
241894	SB-8 5'	soil	2010-08-18	00:00	2010-08-20
241895	SB-8 7'	soil	2010-08-18	00:00	2010-08-20
241896	SB-8 10'	soil	2010-08-18	00:00	2010-08-20
241897	SB-8 15'	soil	2010-08-18	00:00	2010-08-20
241898	SB-8 20'	soil	2010-08-18	00:00	2010-08-20
241899	SB-8 25'	soil	2010-08-18	00:00	2010-08-20
241900	SB-8 30'	soil	2010-08-18	00:00	2010-08-20
241901	SB-8 40'	soil	2010-08-18	00:00	2010-08-20

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(me/Ke)	(mg/Kg)	(ms/Ks)	(mg/Kg)
241833 - SB-1 1'					<50.0	<2.00
241842 - SB-2 1'					<50.0	<2.00
241849 - SB-3 1'	< 0.0200	< 0.0200	<0.0200	<0.0200	<50.0	<2.00
241857 - SB-4 1'	<0.100	0.481	0.245	1.21	593	83.0
241867 - SB-5 1'	< 0.200	<0.200	0.204	0.815	3060	<20.0
241876 - SB-6 1'	<0.0200	<0.0200	< 0.0200	<0.0200	<50.0	<2.00
241883 - SB-7 1'					<50.0	<2.00
241892 - SB-8 1'					<50.0	<2.00

Sample: 241833 - SB-1 1'

Report Date: August 30, 2010		te: August 30, 2010 Work Order: 10082003		Page Number: 3 of 10	
Param	Flag	Result	Units	RL	
Chloride	······································	1870	mg/Kg	4.00	
Sample: 241834	- SB-1 3'				
Param	Flag	Result	Units	RL	
Chloride		2780	mg/Kg	4.00	
Sample: 241835	- SB-1 5'				
Param	Flag	Result	Units	RL	
Chloride	~	4380	mg/Kg	4.00	
Sample: 241836 Param Chloride	- SB-1 7' Flag	Result 504	Units mg/Kg		
Sample: 241837	SD 1 101				
-		Result	Units	RL	
Param	- 56-1 10' Flag	Result 248	Units mg/Kg	RL 4.00	
Param Chloride Sample: 241838 Param Chloride	Flag				
Param Chloride Sample: 241838 Param	Flag - SB-1 15' Flag	248 Result	mg/Kg Units	4.00 RL	
Param Chloride Sample: 241838 Param Chloride Sample: 241839 Param	Flag - SB-1 15' Flag	248 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 RL 4.00 RL	
Param Chloride Sample: 241838 Param Chloride Sample: 241839 Param	Flag - SB-1 15' Flag - SB-1 20'	248 Result <200	mg/Kg Units mg/Kg	4.00 <u>RL</u> 4.00	
Param Chloride Sample: 241838 Param Chloride Sample: 241839 Param Chloride	Flag - SB-1 15' Flag - SB-1 20' Flag	248 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 <u>RL</u> 4.00	
Param Chloride Sample: 241838 Param Chloride	Flag - SB-1 15' Flag - SB-1 20' Flag	248 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 <u>RL</u> 4.00	

Report Date: August 30, 2010		Work Order: 10082003	Pa	nge Number: 4 of 10
Sample: 241843	- SB-2 3'			
Param	Flag	Result	Units	RL
Chloride		22800	mg/Kg	4.00
Sample: 241844	- SB-2 5'			
Param	Flag	Result	Units	RL
Chloride	······································	1350	mg/Kg	4.00
Sample: 241845	- SB-2 7'			
Param	Flag	Result	Units	RL
Chloride		300	mg/Kg	4.00
Sample: 241846	- SB-2 10'			
Param	Flag	Result	Units	RL
Chloride		230	mg/Kg	4.00
Sample: 241847	- SB-2 15'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 241848 -	- SB-2 20'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 241849 -	• SB-3 1'			
Param	Flag	Result	Units	RL
Chloride		2440	mg/Kg	4.00
Sample: 241850 -	· SB-3 3'			
Param	Flag	Result	Units	RL
Chloride		703	mg/Kg	4.00

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Report Datc: August 30, 2010		Work Order: 10082003	Page ?	Number: 5 of 10
Sample: 241851	- SB-3 5'			
Param	Flag	Result	Units	RL
Chloride		234	mg/Kg	4.00
Sample: 241852	- SB-3 7'			
Param	Flag	Result	Units	RL
Chloride		295	mg/Kg	4.00
Sample: 241853 -	- SB-3 10'			
Param	Flag	Result	Units	RL
Chloride		337	mg/Kg	4.00
Sample: 241854 -	- SB-3 15'			
Param	Flag	Result	Units	RL
Chloride		244	mg/Kg	4.00
Sample: 241857 -	· SB-4 1'			
Param	Flag	Result	Units	RL
Chloride		6630	mg/Kg	4.00
Sample: 241858 -	· SB-4 3'			
Param	Flag	Result	Units	RL
Chloride		8770	mg/Kg	4.00
Sample: 241859 -	SB-4 5'			
Param	Flag	Result	Units	RL
Chloride	······································	399	mg/Kg	4.00
Sample: 241860 -	SB-4 7'			
Param	Flag	Result	Units	RL
Chloride	······································	<200	mg/Kg	4.00

Report Date: August 30, 2010		Work Order: 10082003	Page	Number: 6 of 10
Sample: 241861	- SB-4 10'			
Param	Flag	Result	Units	RL
Chloride		422	mg/Kg	4.00
Sample: 241862	- SB-4 15'			
Param	Flag	Result	Units	RL
Chloride		413	mg/Kg	4.00
Sample: 241863	- SB-4 20'			
Param	Flag	Result	Units	RL
Chloride		554	mg/Kg	4.00
Sample: 241864	- SB-4 25'			
Param	Flag	Result	Units	RL
Chloride		404	mg/Kg	4.00
Sample: 241865	- SB-4 30'			
Param	Flag	Result	Units	RL
Chloride		291	mg/Kg	4.00
Sample: 241867	- SB-5 1'			
Param	Flag	Result	Units	RL
Chloride		3460	mg/Kg	4.00
Sample: 241868	- SB-5 3'			
aram	Flag	Result	Units	RL
Chloride		2520	mg/Kg	4.00
Sample: 241869	- SB-5 5'			
Param	Flag	Result	Units	RL
Chloride		385	mg/Kg	4.00

Report Date: August 30, 2010		Work Order: 10082003	Pag	e Number: 7 of 10
Sample: 241870 -	- SB-5 7'			
Param	Flag	Result	Units	RI
Chloride		208	mg/Kg	4.00
Sample: 241871 -	- SB-5 10'			
Param	Flag	Result	Units	RI
Chloride		532	mg/Kg	4.00
Sample: 241872 -	· SB-5 15'			
Param	Flag	Result	Units	RL
Chloride		449	mg/Kg	4.00
Sample: 241873 -	- SB-5 20'			
Param	Flag	Result	Units	RL
Chloride		319	mg/Kg	4.00
Sample: 241876 -				
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 241877 -	SB-6 3'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 241878 -	SB-6 5'			
Param	Flag	Result	Units	RL
Chloride		2180	mg/Kg	4.00
ample: 241879 -	SB-6 7'			
Param	Flag	Result	Units	RL
Chloride		981	mg/Kg	4.00

Report Date: August 30, 2010		Work Order: 10082003	Page	Number: 8 of 10
Sample: 241880	- SB-6 10'			
Param	Flag	Result	Units	RL
Chloride		342	mg/Kg	4.00
Sample: 241881	- SB-6 15'			
Param	Flag	Result	Units	RL
Chloride		250	mg/Kg	4.00
Sample: 241882	- SB-6 20'			
Param	Flag	Result	Units	RL
Chloride		234	mg/Kg	4.00
Sample: 241883				
Param	Flag	Result	Units	RL
Chloride		3470	mg/Kg	4.00
Sample: 241884	- SB-7 3'			
Param	Flag	Result	Units	RL
Chloride		4150	mg/Kg	4.00
Sample: 241885	- SB-7 5'			
Param	Flag	Result	Units	RL
Chloride		614	mg/Kg	4.00
Sample: 241886	- SB-7 7'			
Param	Flag	Result	Units	RL
Chloride		594	mg/Kg	4.00
Sample: 241887	- SB-7 10'			
Param	Flag	Result	Units	RL
Chloride		408	mg/Kg	4.00

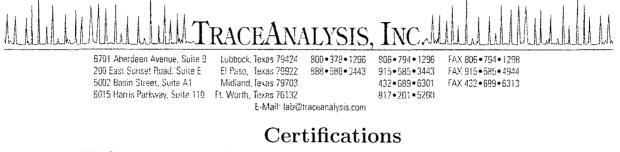
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Report Date: August 30, 2010		Work Order: 10082003	Pa	ge Number: 9 of 10
Sample: 241888	- SB-7 15'			
Param	Flag	Result	Units	RL
Chloride		253	mg/Kg	4.00
Sample: 241889	- SB-7 20'			
Param	Flag	Result	Units	RL
Chloride		287	mg/Kg	4.00
Sample: 241890	- SB-7 25'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 241891	- SB-7 30'			
Param	Flag	Result	Units	RL
Chloride		292	mg/Kg	4.00
Sample: 241892	- SB-8 1'			
Param	Flag	Result	Units	RL
Chloride		863	mg/Kg	4.00
Sample: 241893 ·	- SB-8 3'			
Param	Flag	Result	Units	RL
Chloride		1430	mg/Kg	4.00
Sample: 241894 -	· SB-8 5'			
Param	Flag	Result	Units	RL
Chloride		1900	mg/Kg	4.00
ample: 241895 -	· SB-8 7'			
Param	Flag	Result	Units	RL
Chloride		1260	mg/Kg	4.00

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Report Date: August 30, 2010		Work Order: 10082003	Page N	umber: 10 of 10
Sample: 241896	- SB-8 10'			
Param	Flag	Result	Units	RL
Chloride		456	mg/Kg	4.00
Sample: 241897	- SB-8 15'			
Param	Flag	Result	Units	RL
Chloride		739	mg/Kg	4.00
Sample: 241898	- SB-8 20'			
Param	Flag	Result	Units	RL
Chloride		481	mg/Kg	4.00
Sample: 241899	- SB-8 25'			
Param	Flag	Result	Units	RL
Chloride		496	mg/Kg	4.00
Sample: 241900	- SB-8 30'			
Param	Flag	Result	Units	RL
Chloride		337	mg/Kg	4.00
Sample: 241901	- SB-8 40'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00



WBENC: 237019

HUB:1752439743100-86536NCTRCAWFWB38444Y0909

DBE: VN 20657

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: March 22, 2011

Work Order: 11030728

Project Location:Eddy County, NMProject Name:COG/North West Central Tank BatteryProject Number:114-6400547

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

		Date	Time	Date
Description	Matrix	Taken	Taken	Received
SB-1 0-1'	soil	2011-02-25	00:00	2011-03-04
SB-1 3'	soil	2011-02-25	00:00	2011-03-04
SB-1 5'	soil	2011-02-25	00:00	2011-03-04
SB-1 7'	soil	2011-02-25	00:00	2011-03-04
SB-1 10'	soil	2011-02-25	00:00	2011-03-04
SB-1 15'	soil	2011-02-25	00:00	2011-03-04
SB-1 20'	soil	2011-02-25	00:00	2011-03-04
SB-2 0-1'	soil	2011-02-25	00:00	2011-03-04
SB-2-3*	soil	2011-02-25	00:00	2011-03-04
SB-2 5'	soil	2011-02-25	00:00	2011-03-04
	SB-1 0-1' SB-1 3' SB-1 5' SB-1 7' SB-1 10' SB-1 15' SB-1 20' SB-2 0-1' SB-2 3'	SB-1 0-1' soil SB-1 3' soil SB-1 5' soil SB-1 7' soil SB-1 10' soil SB-1 10' soil SB-1 20' soil SB-2 0-1' soil SB-2 3' soil	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
259814	SB-2 7'	soil	2011-02-25	00:00	2011-03-04
259815	SB-2 10	soil	2011-02-25	00:00	2011-03-04
259816	SB-2 15'	soil	2011-02-25	00:00	2011-03-04
259817	SB-2 20'	soil	2011-02-25	00:00	2011-03-04
259818	SB-3 0-1	soil	2011-02-25	00:00	2011-03-04
259819	SB-3-3'	soil	2011-02-25	00:00	2011-03-04
259820	SB-3 5	soil	2011-02-25	00:00	2011-03-04
259821	SB-3 7'	soil	2011-02-25	00:00	2011-03-04
259822	SB-3 10	soil	2011-02-25	00:00	2011-03-04
259823	SB-3 15'	soil	2011-02-25	00:00	2011-03-04
259824	SB-3 20*	soil	2011-02-25	00:00	2011-03-04
259825	SB-4 0-1	soil	2011-03-01	00:00	2011-03-04
259826	SB-4-3'	soil	2011-03-01	00:00	2011-03-04
259827	SB-4 5	soil	2011-03-01	00:00	2011-03-04
259828	SB-4 7'	soil	2011-03-01	00:00	2011-03-04
259829	SB-4 10'	soil	2011-03-01	00:00	2011-03-04
259830	SB-4 15	soil	2011-03-01	00:00	2011-03-04
259831	SB-4 20 [°]	soil	2011-03-01	00:00	2011-03-04
259832	SB-5 0-1	soil	2011-03-01	00:00	2011-03-04
259833	SB-5-3*	soil	2011-03-01	00:00	2011-03-04
259834	SB-5-5'	soil	2011-03-01	00:00	2011-03-04
259835	SB-5 7'	soil	2011-03-01	00:00	2011-03-04
259836	SB-5-10 [°]	soil	2011-03-01	00:00	2011-03-04
259837	SB-5-15 ³	soil	2011-03-01	00:00	2011-03-04
259838	SB-5 20'	soil	2011-03-01	00:00	2011-03-04
259839	SB-6 0-1'	soil	2011-03-01	00:00	2011-03-04
259840	SB-6 3	soil	2011-03-01	00:00	2011-03-04
259841	SB-6 5'	soil	2011-03-01	00:00	2011-03-04
259842	SB-6 7'	soil	2011-03-01	00:00	2011-03-04
259843	SB-6 10 ³	soil	2011-03-01	00:00	2011-03-04
259844	$SB-6 \ 15^{\circ}$	soil	2011-03-01	00:00	2011-03-04
259845	SB-6 20'	soil	2011-03-01	00:00	2011-03-04
259846	$SB-6$ 25°	soil	2011-03-01	00:00	2011-03-04
259847	SB-6-30 [°]	soil	2011-03-01	00:00	2011-03-04
259848	SB-7 0-1'	soil	2011-03-01	00:00	2011-03-04
259849	SB-7 3'	soil	2011-03-01	00:00	2011-03-04
259850	SB-7 5'	soil	2011-03-01	00:00	2011-03-04
259851	SB-7 7'	soil	2011-03-01	00:00	2011-03-04
259852	SB-7 10'	soil	2011-03-01	00:00	2011-03-04
259853	SB-7 15'	soil	2011-03-01	00:00	2011-03-04
259854	SB-7 20 [*]	soil	2011-03-01	00:00	2011-03-04
259855	SB-7 25	soil	2011-03-01	00:00	2011-03-04
259856	SB-7 30 ³	soil	2011-03-01	00:00	2011-03-04

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.

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This report consists of a total of 58 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael abul

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

Standard Flags

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

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Summary Report

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

Report	Date:	March	22,	2011	
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Work Order: 11030728

Project Location:	Eddy County, NM
Project Name:	COG/North West Central Tank Battery
Project Number:	114-6400547

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
259804	SB-1 0-1'	sof	2011-02-25	00:00	2011-03-04
259805	SB-1 3'	BOIL	2011-02-25	00:00	2011-03-04
259806	SB-1 5'	soil	2011-02-25	00:00	2011-03-04
259807	SB-1 7'	soil	2011-02-25	00:00	2011-03-04
259808	SB-1 10'	soil	2011-02-25	00:00	2011-03-04
259809	SB-1 15'	soil	2011-02-25	00:00	2011-03-04
259810	SB-1 20'	soil	2011-02-25	00:00	2011-03-04
259811	SB-2 0-1'	soil	2011-02-25	00:00	2011-03-04
259812	SB-2 3'	soil	2011-02-25	00:00	2011-03-04
259813	SB-2 5'	soil	2011-02-25	00:00	2011-03-04
259814	SB-2 7'	soil	2011-02-25	00:00	2011-03-04
259815	SB-2 10'	soil	2011-02-25	00:00	2011-03-04
259816	SB-2 15'	soil	2011-02-25	00:00	2011-03-04
259817	SB-2 20'	soil	2011-02-25	00:00	2011-03-04
259818	SB-3 0-1'	soil	2011-02-25	00:00	2011-03-04
259819	SB-3 3'	soil	2011-02-25	00:00	2011-03-04
259820	SB-3 5'	soil	2011-02-25	00:00	2011-03-04
259821	SB-3 7'	soil	2011-02-25	00:00	2011-03-04
259822	SB-3 10'	soil	2011-02-25	00:00	2011-03-04
259823	SB-3 15	soil	2011-02-25	00:00	2011-03-04
259824	SB-3 20'	soil	2011-02-25	00:00	2011-03-()4
259825	SB-4 ()-1'	soli	2011-03-01	00:00	2011-03-04
259826	SB-4 3'	soil	2011-03-01	00:00	2011-03-04
259827	SB-4 5'	soil	2011-03-01	00:00	2011-03-04
259828	SB-4 7'	soil	2011-03-01	00:00	2011-03-04
259829	SB-4 10'	soil	2011-03-01	00:00	2011-03-04
259830	SB-4 15'	soil	2011-03-01	00:00	2011-03-04
259831	SB-4 20'	soil	2011-03-01	00:00	2011-03-04
259832	SB-5 ()-1'	soil	2011-03-01	00:00	2011-03-04
250833	SB-5 3'	soil	2011-03-01	00:00	2011-03-04

Report Date: Mar	ch 22	, 2011
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			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
259834	SB-5 5'	soil	2011-03-01	00:00	2011-03-04
259835	SB-5 7'	soil	2011-03-01	00:00	2011-03-04
259836	SB-5 10'	soil	2011-03-01	00:00	2011-03-04
259837	SB-5 15'	soil	2011-03-01	00:00	2011-03-04
259838	SB-5 20'	soil	2011-03-01	00:00	2011-03-04
259839	SB-6 0-1'	soil	2011-03-01	00:00	2011-03-04
259840	SB-6 3'	soil	2011-03-01	00:00	2011-03-04
259841	SB-6 5'	soil	2011-03-01	00:00	2011-03-04
259842	SB-6 7'	soil	2011-03-01	00:00	2011-03-04
259843	SB-6 10'	soil	2011-03-01	00:00	2011-03-04
259844	SB-6 15'	soil	2011-03-01	00:00	2011-03-04
259845	SB-6 20'	soil	2011-03-01	00:00	2011-03-04
259846	SB-6 25'	soil	2011-03-01	00:00	2011-03-04
259847	SB-6 30'	soil	2011-03-01	00:00	2011-03-04
259848	SB-7 0-1'	soil	2011-03-01	00:00	2011-03-04
259849	SB-7 3'	soil	2011-03-01	00:00	2011-03-04
259850	SB-7 5'	soil	2011-03-01	00:00	2011-03-04
259851	SB-7 7'	soil	2011-03-01	00:00	2011-03-04
259852	SB-7 10'	soil	2011-03-01	00:00	2011-03-04
259853	SB-7 15'	soil	2011-03-01	00:00	2011-03-04
259854	SB-7 20'	soil	2011-03-01	00:00	2011-03-04
259855	SB-7 25'	soil	2011-03-01	00:00	2011-03-04
259856	SB-7 30'	soil	2011-03-01	00:00	2011-03-04

			BTEX		TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(m#/K\$)
259804 - SB-1 0-1'	< 0.0200	< 0.0200	0.140	0.391	<50.0	6.69
259811 - SB-2 0-1'				1	<50.0	<2.00
259818 - SB-3 0-1'					<50.0	<2.00
259825 - SB-4 0-1'				1	<50.0	<2.00
259832 - SB-5 0-1'	2.86	82.8	64.8	86.0	3530	1780
259833 - SB-5 8'	3.60	75.1	69.9	89.6	2960	2850
259834 - SB-5 5'	<0.100	0.602	8.71	6.61	252	287
259839 - SB-6 0-1'	< 0.200	3.16	17.8	34.7	3870	1530
259840 - SB-6 3'	< 0.0200	0.159	< 0.0200	<0.0200	<50.0	<2.00
259848 - SB-7 0-1'	5.25	86.5	87.6	120	10800	3640
259849 - SB-7 3'	1.37	46.9	39.5	63.7	1560	1240
259850 - SB-7 5'	< 0.0200	< 0.0200	0.150	< 0.0200	<50.0	<2.00

Sample: 259804 - SB-1 0-1'

Param	Flag	Result	Units	RL
Chloride		15400	mg/Kg	4.00

Sample: 259805 - SB-1 3'

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Param	Flag	Result	Units	RL	
Chloride		5170	nıg/Kg	4.00	
Sample: 259806		Demik	That a	DI	
Param Chloride	Flag	Result	Units mg/Kg	RL 4.00	
			m <u>B/116</u>		
Sample: 259807 -					
Parain	Flag	Result	Units	RL	
Chloride		569	mg/Kg	4.00	
Sample: 259808 -	- SB-1 10'				
Param	Flag	Result	Units	RL	
Chloride		489	mg/Kg	4.00	
Sample: 259809 -	· SB-1 15'				
Param	Fleg	Result	Units	RL	
Chloride		359	nıg/Kg	4.00	
Sample: 259810 -	SB-1 20'				
Param	Flag	Result	Units	RL	
Chloride		250	mg/Kg	4.00	
Sample: 259811 -	SB-2 0-1'				
Parani	Flag	Result	Units	RL	
Chloride		6040	mg/Kg	4.00	
Sample: 259812 -	SB-2 3'				
Param.	Flag	Result	Units	RL	
Chloride	······································	3360	mg/Kg	4.00	

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Sample: 259813	- SB-2 5'			
Param	Flag	Result	Units	RL
Chloride		405	mg/Kg	4.00
Sample: 259814	- SB-2 7'			
Param	Flag	Result	Units	RL
Chloride		207	mg/Kg	4.00
Sample: 259815	- SB-2 10'			
Param	Flag	Result	Units	RL
Chloride		281	mg/Kg	4.00
Sample: 259816	- SB-2 15'			
Param	Flag	Result	Units	RL
Chloride		252	mg/Kg	4.00
Sample: 259817 -	- SB-2 20'			
Param	Flag	Result	Units	RL
Chloride		232	mg/Kg	4.00
Sample: 259818 -	- SB-3 0-1'			
Paranı	Flag	Result	Units	RL
Chloride		498	ing/Kg	4.00
Sample: 259819 -	· SB-3 3'			
Parani	Flag	Result	Units	RL
Chloride		2310	mg/Kg	4.00
Sample: 259820 -	SB-3 5'			
Param	Flag	Result	Units	RL
Chloride	······································	957	ing/Kg	4.00

Report Date: March 22, 2011		Work Order: 11030728	Page	e Number: 5 of 9	
Sample: 259821 -	SB-3 7'				
Param	Flag	Result	Units	RL	
Chloride	······································	<200	mg/Kg	4.00	
Sample: 259822 -	SB-3 10'				
Param	Flag	Result	Units	RL	
Chloride	······································	249	mg/Kg	4.00	
Sample: 259823 -	SB-3 15'				
Param	Flag	Result	Units	RL	
Chloride	······	234	mg/Kg	4.00	
Sample: 259824 -	SB-3 20'				
Param	Flog	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 259825 -	SB-4 0-1'				
Param	Flag	Result	Units	RL	
Chloride	¥	1210	mg/Kg	4.00	
Sample: 259826 -	SB-4 3'				
Param	Flag	Result	Units	RL	
Chloride	· · · · · · · · · · · · · · · · · · ·	1290	mg/Kg	4.00	
Sample: 259827 -	SB-4 5'				
Param	Flag	Result	Units	RL	
Chloride		857	mg/Kg	4.00	
Sample: 259828 -	SB-4 7'				
Param	Flag	Result	Units	RL	
Chloride		717	mg/Kg	4.00	

Chlorkle 339 ng/Kg 4.1 Sample: 259830 - SB-4 18' Param Flag Result Units R Chloride 204 ng/Kg 4.0 Sample: 259831 - SB-4 20' Param Flag Result Units R Chloride 200 ng/Kg 4.0 Sample: 259831 - SB-4 20' Param Flag Result Units R Chloride 200 ng/Kg 4.1 Sample: 259832 - SB-5 0-1' Param Flag Result Units R Sample: 259833 - SB-5 0-1' Param Flag Result Units R Sample: 259833 - SB-5 3' Param Flag Result Units R Ghloride 5180 ung/Kg 4.0 ' Sample: 259834 - SB-5 5' Param Flag Result Units R Chloride 3680 mg/Kg 4.0 0 Mgggggggggg	Report Date: Marc	h 22, 2011	Work Order: 11030728	Page	Number: 6 of 9
Chloride 339 ng/Kg 44 Sample: 259830 - SB-4 15' Param Plag Result Units R Chloride 204 ng/Kg 44 Sample: 259831 - SB-4 20' Param Flag Result Units R Chloride 204 ng/Kg 44 Sample: 259831 - SB-4 20' Param Flag Result Units R Chloride <200 ng/Kg 44 44 Sample: 259832 - SB-5 0-1' Param Flag Result Units R Sample: 259833 - SB-5 0-1' Param Flag Result Units R Sample: 259833 - SB-5 3' Param Flag Result Units R Ghloride 5180 mg/Kg 44 Sample: 259834 - SB-5 5' Param Flag Result Units R Ghloride 3680 mg/Kg 4.0 Sample: <td< th=""><th>Sample: 259829 -</th><th>- SB-4 10'</th><th></th><th></th><th></th></td<>	Sample: 259829 -	- SB-4 10'			
Sample: 259830 - SB-4 15' Param Flag Result Units R Chloride 204 mg/Kg 4.0 Sample: 269831 - SB-4 20' Param Flag Result Units R Param Flag Result Units R Chloride 200 mg/Kg 4.0 Sample: 259832 - SB-5 0-1' Param Flag Result Units R Param Flag Result Units R 4.0 Sample: 259833 - SB-5 3' Param Flag Result Units R Chloride 5180 mg/Kg 4.0 4.0 4.0 Sample: 259834 - SB-5 5' Param Flag Result Units R Sample: 259835 - SB-5 7' Param Flag Result Units R Sample: 259835 - SB-5 7' Param Flag Result Units R Sample: 259836 - SB-5 10'	Param	Flag	Result		RL
Param Flag Result Units R Chloride 204 mg/Kg 4.0 Sample: 259831 - SB-4 20' Param Flag Result Units R Param Flag Result Units R Chloride 4.0 Sample: 259832 - SB-5 0-1' Param Flag Result Units R Chloride 5300 ng/Kg 4.0 Sample: 259833 - SB-5 3' Param Flag Result Units R Ghoride 5180 ng/Kg 4.0 Sample: 259834 - SB-5 5' Param Flag Result Units R Sample: 259835 - SB-5 7' Param Flag Result Units R Chloride 3680 mg/Kg 4.0 Sample: 259835 - SB-5 7' Param Flag Result Units R Sample: 259836 - SB-5 10' Sample: 259836 - SB-5 10' Param Flag Result Units R	Chloride		339	mg/Kg	4.00
Chloride 204 ng/Kg 4.6 Sample: 259831 - SB-4 20' Param Plag Result Units R Chloride <200	Sample: 259830 -	- SB-4 15'			
Sample: 259831 - 5B-4 20' Param Flag Result Units R Chloride <200	Param	Flag	Result	Units	RL
Param Flag Result Units R Chloride <200	Chloride	·····	204	mg/Kg	4.00
Chloride <200 ng/Kg 4.0 Sample: 259832 - SB-5 0-1' Param Flag Result Units R Chloride 5300 ng/Kg 4.0 Sample: 259833 - SB-5 3' Param Flag Result Units R Chloride 5180 ng/Kg 4.0 Sample: 259833 - SB-5 3' Param Flag Result Units R Chloride 5180 ng/Kg 4.0 Sample: 259834 - SB-5 5' Param Flag Result Units R Chloride 3680 mg/Kg 4.0 Sample: 259835 - SB-5 7' Param Flag Result Units R Chloride 3680 mg/Kg 4.0 Sample: 259835 - SB-5 7' Sample: 259836 - SB-5 10' Sample: Sample: 259836 - SB-5 10' Sample: Sample:	Sample: 259831 -	- SB-4 20'			
Chloride <200 mg/Kg 4.0 Sample: 259832 - SB-5 0-1' Param Flag Result Units R Chloride 5300 mg/Kg 4.0 Sample: 259833 - SB-5 3' Param Flag Result Units R Sample: 259833 - SB-5 3' Param Flag Result Units R Chloride 5180 mg/Kg 4.0 Sample: 259834 - SB-5 5' Param Flag Result Units R Chloride 3680 mg/Kg 4.0 Sample: 259835 - SB-5 7' Param Flag Result Units R Chloride 3680 mg/Kg 4.0 Sample: 259835 - SB-5 7' Param Flag Result Units R Sample: 259836 - SB-5 10' Sample: 1300 mg/Kg 4.0 Sample: 259836 - SB-5 10' Param Flag Result Units R	Param	Flag	Result	Units	RL
ParamFlagResultUnitsRChloride5300mg/Kg4.0Sample: 259833 - SB-5 3'ParamFlagResultUnitsRChloride5180mg/Kg4.0.Sample: 259834 - SB-5 5'ParamFlagResultUnitsRChloride3680mg/Kg4.0.Sample: 259835 - SB-5 7'ParamFlagResultUnitsRChloride1300mg/Kg4.0Sample: 259836 - SB-5 10'Sample: 259836 - SB-5 10'ResultUnitsRParamFlagResultUnitsRSample: 259836 - SB-5 10'ResultUnitsR	Chloride		<200	mg/Kg	4.00
Chloride 5300 ng/Kg 4.0 Sample: 259833 - SB-5 3' Param Flag Result Units R Chloride 5180 mg/Kg 4.0 Sample: 259834 - SB-5 5' Param Flag Result Units R Chloride 3680 mg/Kg 4.0 Sample: 259835 - SB-5 7' Param Flag Result Units R Sample: 259835 - SB-5 7' Param Flag Result Units R Sample: 259836 - SB-5 10' Sample: 259836 - SB-5 10' Param Flag Result Units R	Sample: 259832 -	- SB-5 0-1'			
Sample: 259833 - SB-5 3' Param Flag Result Units R Chloride 5180 mg/Kg 4.0 Sample: 259834 - SB-5 5' Param Flag Result Units R Chloride 3680 mg/Kg 4.0 Sample: 259835 - SB-5 7' Param Flag Result Units R Chloride 1300 mg/Kg 4.0 Sample: 259836 - SB-5 10' Param Flag Result Units R	Param	Flag	Result	Units	RL
ParamFlagResultUnitsRChloride5180mg/Kg4.0Sample: 259834 - SB-5 5'ParamFlagResultUnitsRChloride3680mg/Kg4.0Sample: 259835 - SB-5 7'ParamFlagResultUnitsRChloride1300mg/Kg4.0Sample: 259836 - SB-5 10'FlagResultUnitsRParamFlagResultUnitsRSample: 259836 - SB-5 10'FlagResultUnitsR	Chloride		5300	nıg/Kg	4.00
Chloride 5180 ung/Kg 4.0 Sample: 259834 - SB-5 5' Param Flag Result Units R Chloride 3680 mg/Kg 4.0 Sample: 259835 - SB-5 7' Param Flag Result Units R Chloride 1300 mg/Kg 4.0 Sample: 259835 - SB-5 7' Param Flag Result Units R Sample: 259836 - SB-5 10' Param Flag Result Units R	Sample: 259833 -	· SB-5 3'			
Chloride 5180 ung/Kg 4.0 Sample: 259834 - SB-5 5' Param Flag Result Units R Chloride 3680 mg/Kg 4.0 Sample: 259835 - SB-5 7' Param Flag Result Units R Chloride 1300 mg/Kg 4.0 Sample: 259835 - SB-5 7' Param Flag Result Units R Sample: 259836 - SB-5 10' Param Flag Result Units R Param Flag Result Units R	Param	Flag	Remit	Units	RL
ParamFlagResultUnitsRChloride3680mg/Kg4.0Sample: 259835 - SB-5 7'ParamFlagResultUnitsRChloride1300mg/Kg4.0Sample: 259836 - SB-5 10'FlagResultUnitsR	Chloride				4.00
Chloride3680mg/Kg4.0Sample: 259835 - SB-5 7'ParamFlagResultUnitsRChloride1300mg/Kg4.0Sample: 259836 - SB-5 10'ParamFlagResultUnitsR	Sample: 259834 -	· SB-5 5'			
Chloride3680mg/Kg4.0Sample: 259835 - SB-5 7'ParamFlagResultUnitsRChloride1300mg/Kg4.0Sample: 259836 - SB-5 10'ParamFlagResultUnitsR	Param	Flag	Result	Units	RL
ParamFlagResultUnitsRChloride1300mg/Kg4.0Sample: 259836 - SB-5 10'ParamFlagResultUnitsR	Chloride		3680	mg/Kg	4.00
Chloride 1300 mg/Kg 4.0 Sample: 259836 - SB-5 10' Param Flag Result Units R	Sample: 259835 -	SB-5 7'			
Sample: 259836 - SB-5 10' Param Flag Result Units R		Flag			RL
Param Flag Result Units R	Chloride		1300	mg/Kg	4.00
	Sample: 259836 -	SB-5 10'			
	Param	Flag	Result	Units	RL
					4.00

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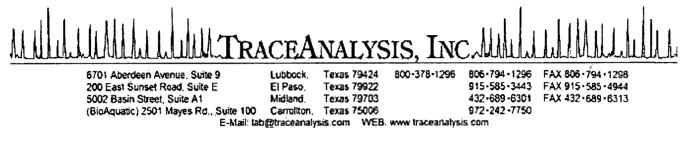
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Sample: 259837 - SB-5 15	, s			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 259838 - SB-5 20	,			
Param	Flag	Result	Units	RL
Chloride		235	mg/Kg	4.00
Sample: 259839 - SB-6 0-3	1'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 259840 - SB-6 3'				
Param	Flag	Result	Units	RL
Chloride		2010	mg/Kg	4.00
Sample: 259841 - SB-6 5'				
Param	Flag	Result	Units	RL
Chloride		1000	mg/Kg	4.00
Sample: 259842 - SB-6 7'				
Param	Flag	Result	Units	RL
Chloride		418	mg/Kg	4.00
Sample: 259843 - SB-6 10	•			
Param	Flag	Result	Units	RL
Chloride		354	nıg/Kg	4.00
Sample: 259844 - SB-6 15	,			
Parani	Flag	Result	Units	RL
Chloride		251	nıg/Kg	4.00

Cikbride <200 mg/Kg 4 Sample: 259846 - SB-6 25' Param Plag Result Units 1 Cikbride 221 mg/Kg 4 Sample: 259847 - SB-6 30' Param Flag Result Units 1 Param Flag Result Units 1 Chloride 320 mg/Kg 4 Sample: 259848 - SB-7 0-1' Param Flag Result Units 1 Param Flag Result Units 1 2 1	Report Date: Marc	h 22, 2011	Work Order: 11030728	Page	Number: 8 of 9
Chloride <200 mg/Kg 4 Sample: 259846 - SB-6 25' Param Flag Result Units 1 Chloride 221 mg/Kg 4 Sample: 259847 - SB-6 30' Param Flag Result Units 1 Param Flag Result Units 1 1 1 Chloride 320 mg/Kg 4 4 Sample: 259848 - SB-7 0-1' Param Plag Result Units 1 Param Plag Result Units 1	Sample: 259845	- SB-6 20'			
Chloride <200	Param	Flag	Result	Units	RL
Param Flag Result Units Chloride 221 mg/Kg 4 Sample: 259847 - SB-6 30' Param Flag Result Units 1 Chloride 320 mg/Kg 4 1 1 1 Chloride 320 mg/Kg 4 1 1 1 1 Sample: 259848 - SB-7 0-1' Param Flag Result Units 1	Chloride		<200	mg/Kg	4.00
Chloride 221 mg/Kg 4 Sample: 259847 - SB-6 30' Param Flag Result Units 1 Chloride 320 mg/Kg 4 Sample: 259848 - SB-7 0-1' Param Flag Result Units 1 Param Flag Result Units 1 1 Chloride 1080 mg/Kg 4 Sample: 259849 - SB-7 3' Param Flag Result Units 1 Chloride 4180 mg/Kg 4 Sample: 259850 - SB-7 5' Param Flag Result Units 1 Sample: 259851 - SB-7 7' Param Flag Result Units 1 Sample: 259851 - SB-7 7' Param Flag Result Units 1 Sample: 259851 - SB-7 7' Param Flag Result Units 1 Sample: 259852 - SB-7 10' Param Flag Result Units 1 Sample: 259852 - SB-7 10' Param Flag Result Units 1	Sample: 259846 -	· SB-6 25'			
Chloride 221 mg/Kg 4 Sample: 259847 - SB-6 30' Param Flag Result Units 1 Chloride 320 mg/Kg 4 Sample: 259848 - SB-7 0-1' Param Flag Result Units 1 Param Flag Result Units 1 1 Chloride 1080 mg/Kg 4 Sample: 259849 - SB-7 8' Param Flag Result Units 1 Chloride 4180 mg/Kg 4 Sample: 259850 - SB-7 5' Param Flag Result Units 1 Sample: 259851 - SB-7 7' Param Flag Result Units 1 Sample: 259851 - SB-7 7' Param Flag Result Units 1 Sample: 259851 - SB-7 7' Param Flag Result Units 1 Sample: 259852 - SB-7 10' Param Flag Result Units 1 Sample: 259852 - SB-7 10' Param Flag Result Units 1	Param	Flag	Result	Units	RL
Param Flag Result Units 1 Chloride 320 mg/Kg 4 Sample: 259848 - SB-7 0-1' Param Flag Result Units 1 Param Flag Result Units 1 Chloride 1080 mg/Kg 4 Sample: 259849 - SB-7 3' Param Flag Result Units 1 Chloride 4180 mg/Kg 4 4 Sample: 259850 - SB-7 5' Param Flag Result Units 1 Chloride 2500 ng/Kg 4 4 Sample: 259851 - SB-7 7' Param Flag Result Units 1 Sample: 259851 - SB-7 7' Param Flag 419 mg/Kg 4 Sample: 259852 - SB-7 10' Param Flag Result Units F Sample: 259852 - SB-7 10' Param Flag Result Units F	Chloride		221		4.00
Chloride 320 mg/Kg 4 Sample: 259848 - SB-7 0-1' Param Flag Result Units 1 Param Flag Result Units 1 1 Chloride 1080 mg/Kg 4 Sample: 259849 - SB-7 3' Param Flag Result Units 1 Chloride 4180 mg/Kg 4 Sample: 259850 - SB-7 5' Param Flag Result Units 1 Chloride 2500 mg/Kg 4 Sample: 259851 - SB-7 7' Param Flag Result Units 1 Sample: 259851 - SB-7 7' Param Flag Result Units 1 Sample: 259852 - SB-7 10' Param Flag Result Units 1 Sample: 259852 - SB-7 10' Param Flag Result Units 1	Sample: 259847 -	- SB-6 30'			
Chloride 320 mg/Kg 4 Sample: 259848 - SB-7 0-1' Param Flag Result Units 1 Param Flag Result Units 1 1 Chloride 1080 mg/Kg 4 Sample: 259849 - SB-7 3' Param Flag Result Units 1 Chloride 4180 mg/Kg 4 Sample: 259850 - SB-7 5' Param Flag Result Units 1 Chloride 2500 mg/Kg 4 Sample: 259851 - SB-7 7' Param Flag Result Units 1 Sample: 259851 - SB-7 7' Param Flag Result Units 1 Sample: 259852 - SB-7 10' Param Flag Result Units 1 Sample: 259852 - SB-7 10' Param Flag Result Units 1	Param	Flag	Result	Units	RL
ParamFlagResultUnitsIChloride1080mg/Kg4.Sample: 259849 - SB-7 3'ParamFlagResultUnitsIChloride4180mg/Kg4.Sample: 259850 - SB-7 5'ParamFlagResultUnitsIChloride2500mg/Kg4.Sample: 259851 - SB-7 7'ParamFlagResultUnitsIParamFlagResultUnitsIISample: 259851 - SB-7 7'ParamFlagResultUnitsISample: 259852 - SB-7 10'ParamFlagResultUnitsFParamFlagResultUnitsF	Chloride		320	mg/Kg	4.00
Chloride 1080 mg/Kg 4 Sample: 259849 - SB-7 8' Param Flag Result Units I Chloride 4180 mg/Kg 4 Sample: 259850 - SB-7 5' Param Flag Result Units I Chloride 2500 mg/Kg 4 Sample: 259851 - SB-7 7' Param Flag Result Units I Chloride 419 mg/Kg 4 Sample: 259852 - SB-7 10' Param Flag Result Units F Sample: 259852 - SB-7 10' Param Flag Result Units F	Sample: 259848 -	· SB-7 0-1'			
Chloride 1080 mg/Kg 4 Sample: 259849 - SB-7 8' Param Flag Result Units I Chloride 4180 mg/Kg 4 Sample: 259850 - SB-7 5' Param Flag Result Units I Chloride 2500 mg/Kg 4 Sample: 259851 - SB-7 7' Param Flag Result Units I Chloride 419 mg/Kg 4 Sample: 259852 - SB-7 10' Param Flag Result Units F Sample: 259852 - SB-7 10' Param Flag Result Units F	Param	Flag	Result	Units	RL
ParamFlagResultUnitsIChloride4180mg/Kg4.Sample: 259850 - SB-7 5'ParamFlagResultUnitsIChloride2500mg/Kg4.Sample: 259851 - SB-7 7'ParamFlagResultUnitsIChloride419mg/Kg4.Sample: 259852 - SB-7 10'FagResultUnitsFParamFlagResultUnitsF	Chloride		1080	mg/Kg	4.00
Chloride 4180 mg/Kg 4. Sample: 259850 - SB-7 5' Param Flag Result Units F Chloride 2500 mg/Kg 4. Sample: 259851 - SB-7 7' Param Flag Result Units F Chloride 419 mg/Kg 4. Sample: 259852 - SB-7 10' Param Flag Result Units F Sample: 259852 - SB-7 10' Param Flag Result Units F	Sample: 259849 -	- SB-7 3'			
Chloride 4180 mg/Kg 4. Sample: 259850 - SB-7 5' Param Flag Result Units F Chloride 2500 mg/Kg 4. Sample: 259851 - SB-7 7' Param Flag Result Units F Chloride 419 mg/Kg 4. Sample: 259852 - SB-7 10' Param Flag Result Units F Sample: 259852 - SB-7 10' Param Flag Result Units F	Param	Flag	Result	Units	RL
ParamFlagResultUnitsHChloride2500ng/Kg4.Sample: 259851 - SB-7 7'ParamFlagResultUnitsHChloride419mg/Kg4.Sample: 259852 - SB-7 10'ParamFlagResultUnitsHParamFlagResultUnitsF					4.00
Chloride2500mg/Kg4.Sample: 259851 - SB-7 7'ParamFlagResultUnitsFChloride419mg/Kg4.Sample: 259852 - SB-7 10'ParamFlagResultUnitsF	Sample: 259850 -	SB-7 5'			
Chloride2500mg/Kg4.Sample: 259851 - SB-7 7'ParamFlagResultUnitsFChloride419mg/Kg4.Sample: 259852 - SB-7 10'ParamFlagResultUnitsF	Param	Flag	Result	Units	RL
ParamFlagResultUnitsFChloride419mg/Kg4.Sample: 259852 - SB-7 10'ParamFlagResultUnitsF	Chloride		2500		4.00
Chloride 419 mg/Kg 4. Sample: 259852 - SB-7 10' Param Flag Result Units F	Sample: 259851 -	SB-7 7'			
Chloride 419 mg/Kg 4. Sample: 259852 - SB-7 10' Param Flag Result Units F		Flag		Units	RL
Param Flag Result Units F	Chloride		419	mg/Kg	4.00
	Sample: 259852 -	SB-7 10'			
	Param	Flag	Result	Units	RL
				mg/Kg	4.00

Report Date: March 22, 2011		Work Order: 11030728		Page Number: 9 of 9		
Sample: 259853 - SB-7 15'						
Param	Flag	Result	Units	RL		
Chloride		324	ing/Kg	4.00		
Sample: 259854	- SB-7 20'					
Param	Flag	Result	Units	RL		
Chloride		<200	mg/Kg	4.00		
Sample: 259855	- SB-7 25'					
Param	Flag	Result	Units	RL		
Chloride		279	ing/Kg	4.00		
Sample: 259856	- SB-7 30'					
Sample: 259856 Param	- SB-7 30' Flag	Result	Units	RL		

Sec. Sec. Sec. R.



Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: September 24, 2012

Work Order: 12091435

Project Location:Eddy Co., NMProject Name:COG/NW Central Tank Battery (CTB)Project Number:114-6401452

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
309405	Bore Hole 1 0-1'	soil	2012-09-11	00:00	2012-09-14
309406	Bore Hole 1 2-3'	soil	2012-09-11	00:00	2012-09-14
309407	Bore Hole 1 4-5'	soil	2012-09-11	00:00	2012-09-14
309408	Bore Hole 1 6-7'	soil	2012-09-11	00:00	2012-09-14
309409	Bore Hole 1 9-10'	soil	2012-09-11	00:00	2012-09-14
309410	Bore Hole 1 14-15'	soil	2012-09-11	00:00	2012-09-14
309411	Bore Hole 1 19-20'	soil	2012-09-11	00:00	2012-09-14
309412	Bore Hole 2 0-1'	soil	2012-09-11	00:00	2012-09-14
309413	Bore Hole 2 2-3 [']	soil	2012-09-11	00:00	2012-09-14
309414	Bore Hole 2 4-5'	soil	2012-09-11	00:00	2012-09-14
309415	Bore Hole 2 6-7'	soil	2012-09-11	00:00	2012-09-14
309416	Bore Hole 2 9-10'	soil	2012-09-11	00:00	2012-09-14

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

Michael abel

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

Summary Report

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

Report Date: September 24, 2012

Work Order: 12091435

Project Location:Eddy Co., NMProject Name:COG/NW Central Tank Battery (CTB)Project Number:114-6401452

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
309405	Bore Hole 1 0-1'	soil	2012-09-11	00:00	2012-09-14
309406	Bore Hole 1 2-3'	soil	2012-09-11	00:00	2012-09-14
309407	Bore Hole 1 4-5'	soil	2012-09-11	00:00	2012-09-14
309408	Bore Hole 1 6-7'	soil	2012-09-11	00:00	2012-09-14
309409	Bore Hole 1 9-10'	soil	2012-09-11	00:00	2012-09-14
309410	Bore Hole 1 14-15'	soil	2012-09-11	00:00	2012-09-14
309411	Bore Hole 1 19-20'	soil	2012-09-11	00:00	2012-09-14
309412	Bore Hole 2 0-1'	soil	2012-09-11	00:00	2012-09-14
309413	Bore Hole 2 2-3'	soil	2012-09-11	00:00	2012-09-14
309414	Bore Hole 2 4-5'	soil	2012-09-11	00:00	2012-09-14
309415	Bore Hole 2 6-7'	soil	2012-09-11	00:00	2012-09-14
309416	Bore Hole 2 9-10'	soil	2012-09-11	00:00	2012-09-14

Sample: 309405 - Bore Hole 1 0-1'

Param	Flag	Result	Units	RL
Chloride		8770	mg/Kg	4

Sample: 309406 - Bore Hole 1 2-3'

Param	Flag	Result	Units	RL
Chloride		7450	mg/Kg	4

Sample: 309407 - Bore Hole 1 4-5'

Report Date: September 24, 2012		Work Order: 12091435	Page Number: 2 of 3	
Param	Flag	Result	Units	RL
Chloride		2790	mg/Kg	4
Sample: 309408	- Bore Hole 1 6-7'			
Param	Flag	Result	Units	RL
Chloride		413	mg/Kg	4
Sample: 309409	- Bore Hole 1 9-10'			
Param	Flag	Result	Units	RL
Chloride		399	nıg/Kg	4
Sample: 309410	- Bore Hole 1 14-15'			
Param	Flag	Result	Units	RL
Chloride		82.7	mg/Kg	4
Sample: 309411	- Bore Hole 1 19-20'			
Param	Flag	Result	Units	RL
Chloride		157	mg/Kg	4
Sample: 309412	- Bore Hole 2 0-1'			
Param	Flag	Result	Units	RL
Chloride		955	nıg/Kg	4
Sample: 309413 ·	- Bore Hole 2 2-3'			
Param	Flag	Result	Units	RL
Chloride		3800	mg/Kg	4
Sample: 309414 -	- Bore Hole 2 4-5'			
Param	Flag	Result	Units	RL
Chloride		2260	mg/Kg	4

Report Date: Sept	ember 24, 2012	Work Order: 12091435	Page	Page Number: 3 of 3			
Sample: 309415	Sample: 309415 - Bore Hole 2 6-7'						
Param	Flag	Result	Units	RL			
Chloride		118	mg/Kg	4			
Sample: 309416	- Bore Hole 2 9-10'						
Param	Flag	Result	Units	RL			
Chloride	· · · · · · · · · · · · · · · · · · ·	44.3	mg/Kg	4			