		SITE	INFORMATION		2RA-761			
		Report Ty	pe: Closure Req	uest				
General Site Info	rmation:							
Site:		Antelope State Tank Battery						
Company:		COG Operating LLC						
Section, Townsh	ip and Range	Unit K - Section 36 - T-17S - R-31E						
Lease Number:		30-015-32040						
County:		Eddy County						
GPS:		3	2.78809° N		103.82599° W			
Surface Owner:		State						
Mineral Owner:								
Dologing Data				S a 2	۰ (۲۰۰۵ میلاد م میلاد میلاد میلا			
Release Data: Date Released:	a de la construcción de la construc	4/16/2011	and a service of side in the second	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	RECEIVED	2		
Type Release:		Produced Fluid				-		
Source of Contam	ination.	Water Tank	<u></u>	·····				
Fluid Released:		23 bbls			_			
Fluids Recovered:	· · · · · · · · · · · · · · · · · · ·	21 bbls	· · ·		NMOCD ARTESIA			
Official Commun	ication:							
Name:	Pat Ellis		an a	Kim Dorey				
Company:	COG Operating, L	LC		Tetra Tech				
Address:	550 W. Texas Ave		1910 N. Big Spring					
P.O. Box	1			<u></u>				
City:	Midland Texas, 79	701		Midland, Texas				

Fax: (432) 684-7137 Email: kim.dorey@tetratech.com pellis@conchoresources.com

10

Phone number:

(432) 686-3023

Ranking Criteria

(432) 682-4559

Depth to Groundwater:	Ranking Score	Site Data	
<50 ft	20		<u> </u>
50-99 ft	10		
>100 ft.	0	0	
WellHead Protection:	Ranking Score	Site Data	
Water Source <1,000 ft., Private <200 ft.	20		
Water Source >1,000 ft., Private >200 ft.	0	0	
Surface Body of Water:	Ranking Score	Site Data	
<200 ft.	20		
200 ft - 1,000 ft.	10		
>1,000 ft.	0	0	
Total Ranking Score:	0		
		-	
	cceptable Soil RRAL (mg/kg)	e	
Benz	ene Total BTEX TPH		

50

5,000



August 31, 2011

Mr. Mike Bratcher Environmental Engineer Specialist Oil Conservation Division, District 2 1301 West Grand Avenue Artesia, New Mexico 88210

Re: Assessment and Closure Request for the COG Operating LLC., Antelope State Tank Battery, Unit K, Section 36, Township 17 South, Range 31 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Antelope State Tank Battery located in Unit K, Section 36, Township 17 South, Range 31 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.78809°, W 103.82599°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on April 16, 2011, and released approximately twenty three (23) barrels of produced fluids due a water transfer pump failure. To alleviate the problem, COG personnel repaired the water transfer pump. Twenty one (21) barrels of standing fluids were recovered. The spill initiated from the pump and impacted an area approximately 8' x 160'. The entire spill was contained within the facility's berm. The initial C-141 form is enclosed in Appendix A.



Groundwater

No water wells were listed within Section 36. One well was listed in section 34 with a recorded depth of 271' bgs by the *Geology and Groundwater Resources of Eddy County, New Mexico (Report 3)*. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 300' below surface. The groundwater well report 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

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

Referring to Table 1, all submitted samples were below the RRAL for TPH and BTEX. Chloride concentrations detected in AH-1 showed a concentration of 636 mg/kg at 0-1' and declined to 285 mg/kg at 1-1.5'. Auger hole (AH-2) did show an elevated chloride of 7,740 mg/kg at 0-1', but declined to <200 mg/kg at 1-1.5' below surface.

Closure Request

Based on the limited extent of chloride impact (0-1') and depth to groundwater (>300'), COG request closure of the site. COG proposes to



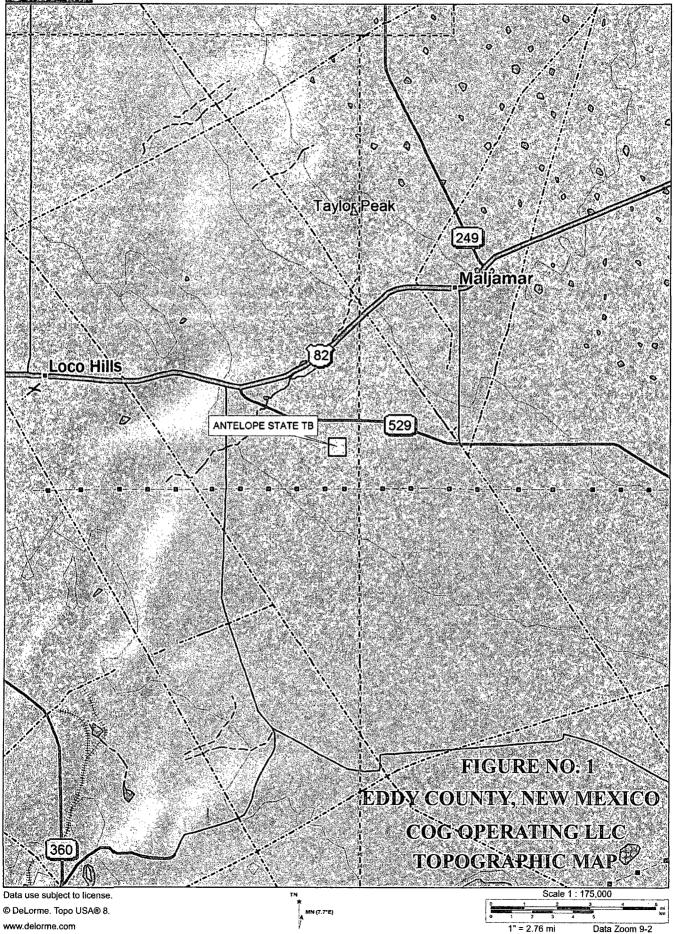
perform some general house keeping in the area of AH-2 to remove the surface chloride impact. The final C-141 is enclosed in Appendix A. If you have any questions or require any additional information regarding this assessment, please call me at (432) 682-4559.

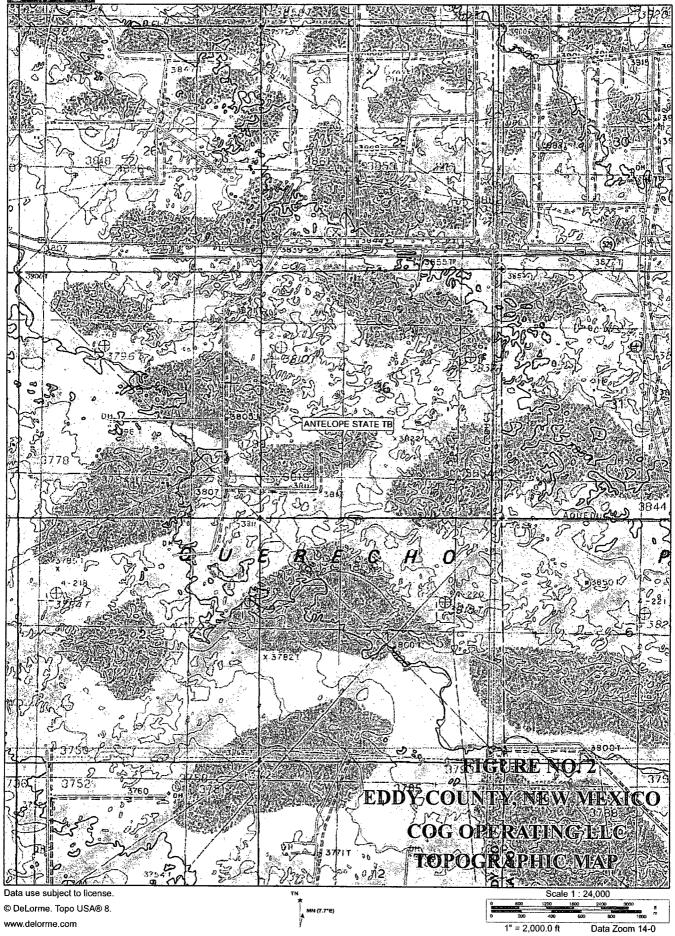
Respectfully submitted, TETRATECH Ike Tavarez Senior Project Manager

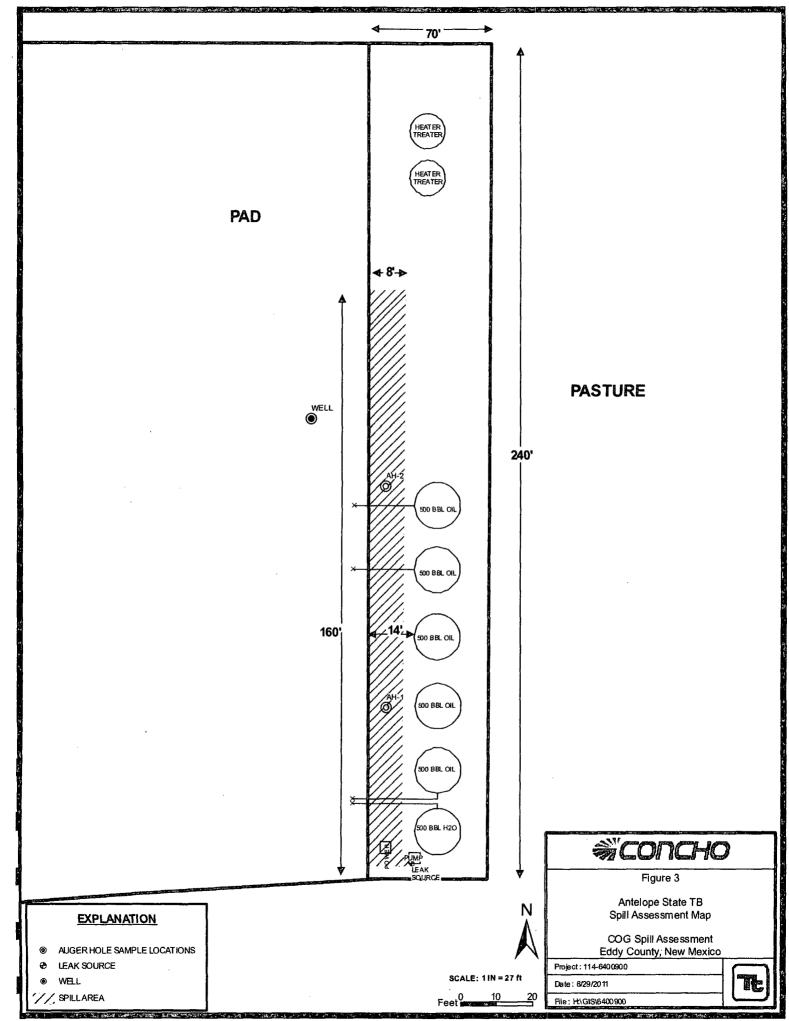
cc: Pat Ellis - COG

FIGURES

DELORME





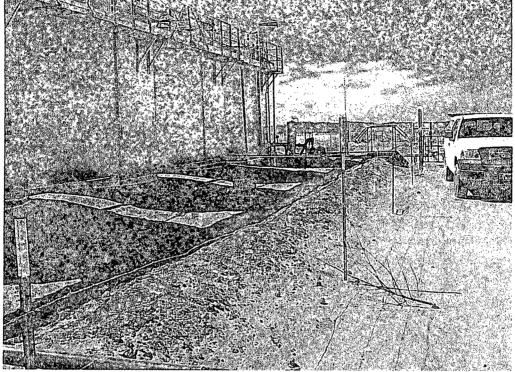


)awn By: Isabel Marmol*o*jo

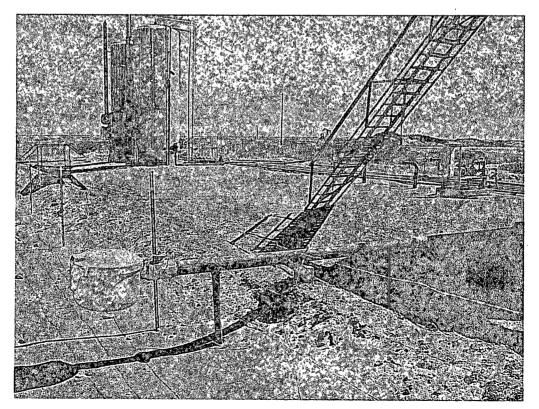
PHOTOGRAPHS

COG Operating LLC Antelope State Tank Battery Eddy County, New Mexico





View South East – AH-1



View North East – AH-2

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TABLES

Table 1COG Operating LLC.ANTELOPE STATE TANK BATTERYEddy County, New Mexico

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Sample		Sample	Soil	Status	T	PH (mg/ł	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	5/9/2011	0-1'	Х		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	636
	18	1-1.5'	Х		-	-	-	-	-	-		285
	13	2-2.5'	Х		-	-	_	-	-	-	-	<200
	8	3-3.5'	Х		-	-	-	-	-	-		<200
	łł.	4-4.5'	Х		-	-	-	-	-	-		215
	11	5-5.5'	Х		-	_	-	-	-	-	-	<200
	11	6-6.5'	Х		-	-		-	-	-		424
AH-2	5/9/2011	0-1'	Х		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	7,740
	11	1-1.5'	Х		-	-	-		-	-	-	<200
	11	2-2.5'	Х		-	-	-	-	-	-	-	<200
	11	3-3.5'	Х		-	-	-		-	-	-	<200
	ti	4-4.5'	Х		-	-	-	-	-	-		<200
	u	5 - 5.5'	Х		-	-	-	-	-	-	-	<200
	u	6-6.5'	Х		-	-	-	-	-	.	-	<200
	ls .	7-7.5'	Х		-	-	-	-	-	-	• ,	<200

(--) Not Analyzed

APPENDIX A

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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

Release Notification and Corrective Action

		OPERATOR		Initial Report	Final Report
Name of Company COG OPERA	TING LLC	Contact	Pat Ellis		
Address 550 W. Texas, Suite 100	, Midland, TX 79701	Telephone No.	432-230-0077		
Facility Name Antelope State	Tank Battery	Facility Type	Tank Battery		
Surface Owner State	Mineral Own	er		Lease No. (API#	30-015-32040

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
К	36	17S	31E					Eddy

Latitude 32.78841 Longitude 103.82626

NATURE OF RELEASE

Type of Release Produced fluid	Volume of Release 23bbls	Volume Recovered 21bbls
Source of Release Water tank	Date and Hour of Occurrence	Date and Hour of Discovery
	04/16/2011	04/16/2011 8:00 a.m.
Was Immediate Notice Given?	If YES, To Whom?	
🗌 Yes 🛛 No 🖾 Not Required		
By Whom?	Date and Hour	
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	RECEIVED
If a Watercourse was Impacted, Describe Fully.*		OCT 11 2011
Describe Cause of Problem and Remedial Action Taken.*		IDTECIAL
		NMOCD ARTESIA
The water transfer pump malfunctioned; it has since been repaired and pu	t back into service.	TVI
	·	······
Describe Area Affected and Cleanup Action Taken.*		
Inivially, 22665 of and during and and and and the second		
Initially 23bbls of produced fluid was released and we were able to recove facility walls. The spill area measured 5' x 50' inside the bermed area by	the tanks. The spill area has been so	uid was completely contained inside the
been disposed of appropriately. Tetra Tech will sample the spill site area	to delineate any possible contaminati	apeu and the contantinateu material has
remediation work plan to the NMOCD for approval prior to any significant		on hom the release and we will present a
I hereby certify that the information given above is true and complete to the	he best of my knowledge and understa	and that pursuant to NMOCD rules and
regulations all operators are required to report and/or file certain release n	otifications and perform corrective ac	tions for releases which may endanger
public health or the environment. The acceptance of a C-141 report by the	e NMOCD marked as "Final Report"	does not relieve the operator of liability
should their operations have failed to adequately investigate and remediate	e contamination that pose a threat to g	ground water, surface water, human health
or the environment. In addition, NMOCD acceptance of a C-141 report defederal, state, or local laws and/or regulations.	bes not relieve the operator of respons	sidinty for compliance with any other
research state, or recar tarts an or regulations.	OIL CONSERV	VATION DIVISION
	<u>OIL CONSER</u>	VATION DIVISION
Signature:		
	Approved by District Supervisor:	
Printed Name: Josh Russo		
Title: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Assumption	
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached 🔲
Date: 04/21/2011 Phone: 432-212-2399		

* 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

Release Notification and Corrective Action

		Initial Report		Final Report
ontact Pat Ellis				_
elephone No. (432) 685-4332				
acility Type Tank Battery				
e	elephone No. (432) 685-4332			

Surface Owner: State

Mineral Owner

Lease No. (API#) 30-015-32040

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	36	17S	31E					

Latitude N 32.78841° Longitude W 103.82626°

NATURE OF RELEASE

Type of Release: Produced Fluid	Volume of Release 23 bbls	Volume Rec	covered 21 bbls			
Source of Release: Equalizer	Date and Hour of Occurrence Date and Hour of Discovery					
	4/16/2011	4/16/2011	8:00 a.m.			
Was Immediate Notice Given?	If YES, To Whom?					
🗌 Yes 🛛 No 🖾 Not Required						
By Whom? Josh Russo	Date and Hour					
Was a Watercourse Reached?	If YES, Volume Impacting the W	atercourse.				
🗌 Yes 🖾 No	N/A					
If a Watercourse was Impacted, Describe Fully.*	1	TRE	DCT 11 2011			
			1 0011			
N/A			OCT 11 2011			
			TECIA			
Describe Cause of Problem and Remedial Action Taken.*		INM				
The water transfer pump malfunctioned; it has since been repaired and put back into service.						
Describe Area Affected and Cleanup Action Taken.*						
Tetra Tech inspected site and collected samples to define the spills extent						
area of AH-2 to remove the surface chloride impacted soil. Tetra Tech pro-	epared closure report and submitted t	to NMOCD for r	review and approval.			
I hereby certify that the information given above is true and complete to t	he heat of my knowledge and under	toud that museus	int to NMOCD miles and			
regulations all operators are required to report and/or file certain release r						
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 d						
federal, state, or local laws and/or regulations.						
h	OIL CONSERVATION DIVISION					
		·				
Signature:						
Printed Name: Ike Tavarez Agenton COG	Approved by District Supervisor:					
/						
Title: Project Manager	Approval Date:	Expiration Da	te:			
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:					
	Conditions of Approval.		Attached			
Date: 8-31-11 Phone: (432) 682-4559						

* Attach Additional Sheets If Necessary

APPENDIX B

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Water Well Data Average Depth to Groundwater (ft) COG - Antelope State Tank Battery Eddy County, New Mexico

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

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

	16 \$	South		31 East	
6	5	4	3	2	1
7	8	9	10	11	12 288
18	17	16	15	14	13 113
19	20	21	22	23	24
30	29	28	27	26	25
31 290	32	33	34	35	36

	17 :	South	3	1 East	ł
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34 271	35	36 Site

31 East

18 South

	16	South		32 East	
6	5	4	3	2	1
1		1	65	265	265
7	8	9	10	11	12
					215
18	17	16	15	14	13
		221			215
19	20	21	22	23	24
220		210		210	
30	29	28	27	26	25
1				243	
31	32	33	34	35	36
8					260

	17 Sc	outh	32	East	
6	5	4 82 Naljam	3 51775	2 60	1 225
7	8	9	10	1170 88	12
18	17	16	15	14	13
19	20	21	22	23	24
30 180 dry	29	28	27	26	25
31 Brown	32	33	34	35	36

	18 5	South	32	32 East		
6	5	4 65	3 Prong #2	2	1	
7 460 82	8	9	10	11	12	
18	17	16 84	15	14	13	
19	20 1 64	21	22 429	23	24	
30	29	28	27	26	25	
31	32	33	34 117	35	36	

18 South 30 East з

New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

LOCATION NUMBER	OWNER	DATE	TOPOGRAPHIC	ALTITUDE ABOVE SEA	DEPTH	DIAMETER	PRINCIPAL WATE	PRINCIPAL WATER-BEARING BED	
	OR NAME	COM- PLETED	SITUATION	LEVEL (feet)	LEVEL WELL		CHARACTER OF MATERIAL	GEOLOGIC Unit	
17.28.2.240	Hal Bogle	-	Flat between mesas	-		6 (?)	Redbeds (?)	Dockum (?)	
14.220	do.		Rolling			7	do.	do.	
19.200	do.	-	do.		-	8	Redbeds, gypsum (?)	Chalk Bluff or Rustler	
22.230	-		Flat between mesas	-	-	6	Redbeds (?)	Rustler or Dockum (?)	
17.29.22.110	-		Bear Grass draw	3,550	-	6	do.	Dockum (?)	
29.400	Bishop (?)	-	Flat	_		7	do.	do.	
17.31.34.000		_	Rolling		-	6 (?)	Redbeds	Dockum	
18.21.13.310	Andy Teel	1915	_	4,100	520	8`´	Limestone	San Andres	
27.440	do.	1947	Broad valley	4,200	667	10	do.	do.	
32.430	George Teel	1946	Rolling	4,300	815	6	do.	do.	
18.23.6.140	Couhape Bros.	1941	S. of Rio Penasco	4,060	500	10	do.	do.	
18.25.23.111	G. M. Phelps	_	Blackdom Terrace	_	-	-	Alluvium (?)	Quaternary (?)	

TABLE 1. RECORDS OF WELLS IN EDDY COUNTY, NEW MEXICO. (Continued)

See explanation at beginning of table.

WATER LEVEL BELOW METHOD USE YIELD LOCATION LAND DATE OF OF OF REMARKS SURFACE MEASUREMENT (g.p.m.) NUMBER LIFT WATER (feet) 17.28.2.240 27.6 Dec. 1, 1948 3 w s Depth to water measured while pumping. 14.220 80 61 W S & D Driller: Cy Hinshaw. See analysis, Table _ 3. 19.200 224.3 Dec. 2, 1948 1.2 w s Depth to water measured while pumping. 22.230 45.5 Dec. 1, 1948 Ν Ν Abandoned stock well. 17.29.22.110 79.7 Nov. 29, 1948 3 E. w S Depth to water measured while pumping. do. 29.400 210 Dec. 3, 1948 1.1 w S 271+ do. See analysis, Table 3. Formerly C.C.C. well. Cased to 30 ft. 17.31.34.000 Dec. 6, 1948 3.5 W S 18.21.13.310 505 10 R. w 5 & D ----27.440 530 Ŵ Cased to 120 ft. ----S 32.430 800 (?) 12 R. W S & D Lowered cylinder 5 ft. in 1948 because ---water level declined. Cased to 380 ft. 18.23.6.140 440 Jan. 12, 1950 w S & D ----18.25.23.111 Jan. 1950 Ŵ 117.8 _ S

WAR STOR

See explanation at beginning of table.

1 Measured Dec. 3, 1948.

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State at 18 white balances

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GROUND WATER

EDDY COUNTY

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APPENDIX C

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Summary Report

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

Report Date:	June	1,	2011	
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Work Order:	11051103

Project Location:	Eddy Co., NM
Project Name:	Antelope State Tank Battery
Project Number:	114-6400900

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
266085	AH-1 0-1'	soil	2011-05-09	00:00	2011-05-10
266086	AH-1 1-1.5'	soil	2011-05-09	00:00	2011-05-10
266087	AH-1 2-2.5'	soil	2011-05-09	00:00	2011-05-10
266088	AH-1 3-3.5'	soil	2011-05-09	00:00	2011-05-10
266089	AH-1 4-4.5'	soil	2011-05-09	00:00	2011-05-10
266090	AH-1 5-5.5'	soil	2011-05-09	00:00	2011-05-10
266091	AH-1 6-6.5'	soil	2011-05-09	00:00	2011-05-10
266092	AH-2 0-1'	soil	2011-05-09	00:00	2011-05-10
266093	AH-2 1-1.5'	soil	2011-05-09	00:00	2011-05-10
266094	AH-2 2-2.5'	soil	2011-05-09	00:00	2011 - 05 - 10
266095	AH-2 3-3.5'	soil	2011-05-09	00:00	2011-05-10
266096	AH-2 4-4.5'	soil	2011-05-09	00:00	2011-05-10
266097	AH-2 5-5.5'	soil	2011-05-09	00:00	2011-05-10
266098	AH-2 6-6.5'	soil	2011-05-09	00:00	2011-05-10
266099	AH-2 7-7.5'	soil	2011-05-09	00:00	2011-05-10

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(ing/Kg)	(mg/Kg)
266085 - AH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<2.00
266092 - AH-2 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<2.00

Sample: 266085 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		636	mg/Kg	4

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: June 1, 2011	Work Order: 11051103	Pa	Page Number: 2 of 3	
Sample: 266086 - AH-1 1-1.5'				
Param Flag	Result	Units	RL	
Chloride	285	mg/Kg	4	
Sample: 266087 - AH-1 2-2.5'				
Param Flag	Result	Units	RL	
Chloride	<200	mg/Kg	4	
Sample: 266088 - AH-1 3-3.5'				
Param Flag	Result	Units	RL	
Chloride	<200	mg/Kg	4	
Sample: 266089 - AH-1 4-4.5'				
Param Flag	Result	Units	RL	
Chloride	215	mg/Kg	4	
Sample: 266090 - AH-1 5-5.5'				
Param Flag	Result	Units	RL	
Chloride	<200	mg/Kg	4	
Sample: 266091 - AH-1 6-6.5'				
Param Flag	Result	Units	RL	
Chloride	424	mg/Kg	4	
Sample: 266092 - AH-2 0-1'				
Param Flag	Result	Units	RL	
Chloride	7740	mg/Kg	4	
Sample: 266093 - AH-2 1-1.5'				
Param Flag	Result	Units	RL	
Chloride	<200	nıg/Kg	4	

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Report Date: June 1	, 2011	Work Order: 11051103	Page	Number: 3 of 3
Sample: 266094 -	AH-2 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 266095 -	AH-2 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		<200	nıg/Kg	4
Sample: 266096 -	AH-2 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 266097 -	AH-2 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4
Sample: 266098 -	AH-2 6-6.5'			
Param	Flag	Result	Units	\mathbf{RL}
Chloride		<200	mg/Kg	4
Sample: 266099 -	AH-2 7-7.5'			
Param	Flag	Result	Units	RL
Chloride		<200	ıng/Kg	4



 6701 Aberdeen Avenue, Suite 9
 Lubbock, Texas 79424

 200 East Sunset Road, Suite E
 El Paso, Texas 79922

 5002 Basin Street, Suite A1
 Midland, Texas 79703

 6015 Harris Parkway, Suite 110
 Et. Worth, Texas 76132

Lubbock, Texas 79424 800 • 378 • 1296 El Paso, Texas 79922 868 • 588 • 3443 Midland, Texas 79703 t. Worth, Texas 76132 E-Mail: Tab@traceanalysis.com

588+3443 915+585+3443 432+689+6301 817+201+5260

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 FAX 806•794•1298

 1443
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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: June 1, 2011

Work Order: 11051103

m:....

Project Location:Eddy Co., NMProject Name:Antelope State Tank BatteryProject Number:114-6400900

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

Deta

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
266085	AH-1 0-1'	soil	2011-05-09	00:00	2011-05-10
266086	AH-1 1-1.5'	soil	2011-05-09	00:00	2011-05-10
266087	AH-1 2-2.5'	soil	2011-05-09	00:00	2011-05-10
266088	AH-1 3-3.5'	soil	2011-05-09	00:00	2011-05-10
266089	AH-1 4-4.5'	soil	2011-05-09	00:00	2011-05-10
266090	AH-1 5-5.5'	soil	2011-05-09	00:00	2011-05-10
266091	AH-1 6-6.5'	soil	2011-05-09	00:00	2011-05-10
266092	AH-2 0-1'	soil	2011-05-09	00:00	2011-05-10
266093	AH-2 1-1.5'	soil	2011-05-09	00:00	2011-05-10
266094	AH-2 2-2.5'	soil	2011-05-09	00:00	2011-05-10
266095	AH-2 3-3.5'	soil	2011-05-09	00:00	2011-05-10
266096	AH-2 4-4.5'	soil	2011-05-09	00:00	2011-05-10
266097	AH-2 5-5.5'	soil	2011-05-09	00:00	2011-05-10
266098	AH-2 6-6.5'	soil	2011-05-09	00:00	2011-05-10
266099	AH-2 7-7.5'	soil	2011-05-09	00:00	2011-05-10

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 25 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

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Case Narrative

Samples for project Antelope State Tank Battery were received by TraceAnalysis, Inc. on 2011-05-10 and assigned to work order 11051103. Samples for work order 11051103 were received intact at a temperature of 8.4 C.

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

		Prep	Prep	\mathbf{QC}	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	68938	2011-05-12 at 08:58	81213	2011-05-12 at 21:06
Chloride (Titration)	SM 4500-Cl B	69151	2011-05-20 at 10:57	81559	2011-05-24 at 12:44
Chloride (Titration)	SM 4500-Cl B	69151	2011-05-20 at 10:57	81650	2011-05-26 at 14:22
Chloride (Titration)	SM 4500-Cl B	69151	2011-05-20 at 10:57	81651	2011-05-26 at 14:22
TPH DRO - NEW	S 8015 D	68968	2011-05-13 at 10:42	81246	2011-05-13 at 10:42
TPH GRO	S 8015 D	68938	2011-05-12 at 08:58	81214	2011-05-12 at 21:06

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 11051103 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: June 1, 2011 114-6400900

Analytical Report

Sample: 266085 - AH-1 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 81213 68938		Date Ana	l Method: lyzed: reparation:	S 80211 2011-05 2011-05	-12		Prep Method Analyzed By Prepared By	: ME
					RL				
Parameter		Flag	Cert]	Result	Unit	8	Dilution	\mathbf{RL}
Benzene			1	<).0200	mg/K	g	1	0.0200
Toluene			1	<().0200	mg/K	g	1	0.0200
Ethylbenzene	•		ı	<).0200	mg/K		1	0.0200
Xylene			1	<).0200	mg/K	g	1	0.0200
							Spike	Percent	Recovery
Surrogate		Flaş	g Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ene (TFT)			2.08	mg/Kg	1	2.00	104	52.8 - 137
4-Bromofluor	obenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	38.4 - 157

Sample: 266085 - AH-1 0-1'

Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81559	Date An	alyzed:	2011-05-24	Analyzed By:	AR
Prep Batch:	69151	Sample 1	Preparation:	2011-05-20	Prepared By:	AR.
			\mathbf{RL}			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride			636	mg/Kg	50	4.00

Sample: 266085 - AH-1 0-1'

Laboratory:	Midland					
Analysis:	TPH DRO - NEW	Anal	lytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	81246	Date	Analyzed:	2011-05-13	Analyzed By:	kg
Prep Batch:	68968	Sam	ple Preparation:	2011-05-13	Prepared By:	kg
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
DRO		1	<50.0	mg/Kg	1	50.0

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Surrogate	Flag	Cer	t	Result	Units	Dilu	ition	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane				83.3	mg/Kg	-	1	100	83	70 - 130
Sample: 266085 - A	H-1 0-1	,								
Laboratory: Midland Analysis: TPH GF QC Batch: 81214 Prep Batch: 68938	RO			Date An	cal Method: alyzed: Preparation	2011-0	05-12		Prep Meth Analyzed H Prepared F	By: ME
						\mathbf{RL}				
Parameter		Flag		Cert	R	lesult		Units	Dilution	RL
GRO				1		<2.00	m	g/Kg	1	2.00
				~	_ .			Spike	Percent	Recovery
Surrogate			Flag	Cert	Result	Units	Dilutio			Limits
Trifluorotoluene (TFT)					2.37	mg/Kg	1	2.00	118	48.5 - 152
4-Bromofluorobenzene	(4-BFB)				1.99	mg/Kg_	1	2.00	100	42 - 159

Sample: 266086 - AH-1 1-1.5'

Parameter	Flag	Cert	Result	Units	Dilution	RL
T top Daten.		Sample	RL	2011-00-20	repared by.	1110
Prep Batch:	69151		Preparation:	2011-05-20	Prepared By:	
QC Batch:	81559	Date An	alvzed:	2011-05-24	Analyzed By:	AR.
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland					

Sample: 266087 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81559	Date Analyzed:	2011-05-24	Analyzed By:	AR
Prep Batch:	69151	Sample Preparation:	2011-05-20	Prepared By:	AR.

continued ...

Report Date 114-6400900	:: June 1, 2011		Order: 1105 State Tank		Page Number: 8 Eddy Co	
sample 26608	87 continued					
			\mathbf{RL}			
Parameter	Flag	Cert	Result	Units	Dilution	RL
			\mathbf{RL}			•
Parameter	Flag	Cert	Result .	Units	Dilution	RL
Chloride			<200	mg/Kg	50	4.00
Sample: 26	6088 - AH-1 3-3.5'					
Laboratory:	Midland					
Analysis:	Chloride (Titration)		al Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81650	Date An		2011-05-26	Analyzed By:	AR AR
Prep Batch:	69151	Sample 1	Preparation:	2011-05-20	Prepared By:	AR
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			<200	mg/Kg	50	4.00
Sample: 26	6089 - AH-1 4-4.5'					
Laboratory:	Midland					
Analysis:	Chloride (Titration)		al Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81650	Date An		2011-05-26	Analyzed By:	AR
Prep Batch:	69151	Sample I	Preparation:	2011-05-20	Prepared By:	AR
•			RL			
				T T : 4	Dilution	RL
Parameter Chloride	Flag	Cert	Result 215	Units mg/Kg	Dilution 50	4.00

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 81650 69151	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-05-26 2011-05-20	Prep Method: Analyzed By: Prepared By:	

Report Date: June 1, 2011 114-6400900			Order: 11051103 State Tank Batt	Page Number: 9 of 25 Eddy Co., NM		
			RL			_
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride			<200	mg/Kg	50	4.00

Sample: 266091 - AH-1 6-6.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Analysis: Chloride (Titration) QC Batch: 81650		al Method: alyzed: Preparation:	SM 4500-Cl B 2011-05-26 2011-05-20	Prep Method: Analyzed By: Prepared By:	AR
Descentor	Flor	Cert	RL Result	Units	Dilution	RL
Parameter Chloride	Flag	Cert	424	nıg/Kg	50	$\frac{RL}{4.00}$

Sample: 266092 - AH-2 0-1'

Laboratory: Midland Analysis: BTEX QC Batch: 81213 Prep Batch: 68938		Date Ana	l Method: lyzed: reparation	S 80211 2011-05 : 2011-05	5-12		Prep Methoo Analyzed By Prepared By	r: ME
				RL				
Parameter	Flag	Cert		Result	Unit	ts	Dilution	RL
Benzene		1	<	0.0200	mg/K	g	1	0.0200
Toluene		1	<	0.0200	mg/K	g	1	0.0200
Ethylbenzene		ı	<	0.0200	mg/K	g	1	0.0200
Xylene		1	<	0.0200	mg/K	g	1	0.0200
Surrogate	Flaş	g Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.80	mg/Kg	1	2.00	90	52.8 - 137
4-Bromofluorobenzene (4-BFB)			1.65	mg/Kg	1	2.00	82	38.4 - 157

Sample: 266092 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81650	Date Analyzed:	2011-05-26	Analyzed By:	AR
Prep Batch:	69151	Sample Preparation:	2011-05-20	Prepared By:	AR,

Report Date: June 1, 2011 114-6400900			Order: 11051103 State Tank Batte	Page Number: 10 of 25 Eddy Co., NM		
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			7740	mg/Kg	100	4.00

Sample: 266092 - AH-2 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	ysis: TPH DRO - NEW Batch: 81246		Date	lytical Metho e Analyzed: aple Preparat	2011-0	5-13	Prep Me Analyzec Preparec	dBy: kg
					RL			
Parameter		Flag	Cert	Res	ult	Units	Dilution	RL
DRO			ł	<5	0.0	mg/Kg	1	50.0
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	$\mathbf{A}\mathbf{mount}$	Recovery	Limits
n-Tricosane			96.9	mg/Kg	1	100 .	97	70 - 130

Sample: 266092 - AH-2 0-1'

Laboratory: Midland Analysis: TPH GRO QC Batch: 81214 Prep Batch: 68938			Date An	al Metho alyzed: Preparati	2011-0	05-12		Prep Meth Analyzed H Prepared H	By: ME
					\mathbf{RL}				
Parameter	Flag		Cert		Result	Uni	its	Dilution	\mathbf{RL}
GRO			1		<2.00	mg/ł	ζg	1	2.00
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				2.00	mg/Kg	1	2.00	100	48.5 - 152
4-Bromofluorobenzene (4-BFB)			1.71	mg/Kg	1	2.00	86	42 - 159

Sample: 266093 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81650	Date Analyzed:	2011-05-26	Analyzed By:	AR
Prep Batch:	69151	Sample Preparation:	2011-05-20	Prepared By:	AR

Report Date: Jun 114-6400900			Order: 11051103 State Tank Batte	Page Number: 11 of 25 Eddy Co., NM			
Parameter		Flag	Cert	RL Result	Units	Dilution	RL
ratameter	·	riag	Oers				
Chloride				<200	mg/Kg	50	4.00

Sample: 266094 - AH-2 2-2.5'

Laboratory:MidlandAnalysis:Chloride (Titration)QC Batch:81650Prep Batch:69151		Date An	al Method: alyzed: ?reparation:	SM 4500-Cl B 2011-05-26 2011-05-20	Prep Method: Analyzed By: Prepared By:	AR
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			<200	mg/Kg	50	4.00

Sample: 266095 - AH-2 3-3.5'

Laboratory: Analysis: QC Batch: Prep Batch:	sis: Chloride (Titration) atch: 81650		al Method: alyzed: Preparation:	SM 4500-Cl B 2011-05-26 2011-05-20	Prep Method: Analyzed By: Prepared By:	,
			\mathbf{RL}			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	······································		<200	mg/Kg	50	4.00

Sample: 266096 - AH-2 4-4.5'

Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81650	Date An	alyzed:	2011-05-26	Analyzed By:	\mathbf{AR}
Prep Batch:	69151	Sample I	Preparation:	2011-05-20	Prepared By:	\mathbf{AR}
			\mathbf{RL}			
Parameter	Flag	Cert	Result	\mathbf{Units}	Dilution	\mathbf{RL}
Chloride			<200	mg/Kg	50	4.00

114-6400900	: June 1, 2011	Work Ord Antelope Sta	der: 11051 ate Tank I	Page Number: 12 of 25 Eddy Co., NM		
Sample: 26	6097 - AH-2 5-5.5'					
Laboratory:	Midland					NT / 1
Analysis:	Chloride (Titration) 81650	Analytical I		SM 4500-Cl B 2011-05-26	Prep Method:	N/A
QC Batch: Prep Batch:	69151	Date Analy Sample Pre		2011-05-20	Analyzed By: Prepared By:	AR. AR.
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride Sample: 26	6098 - AH-2 6-6.5'	Cert	Result <200	Units mg/Kg	Dilution50	
Chloride		Cert Analytical M Date Analy Sample Pre	<200 Method: zed:			4.00
Chloride Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch:	6098 - AH-2 6-6.5' Midland Chloride (Titration) 81651 69151	Analytical M Date Analy Sample Pre	<200 Method: zed: paration: RL	mg/Kg SM 4500-Cl B 2011-05-26 2011-05-20	50 Prep Method: Analyzed By: Prepared By:	4.00 N/A AR AR
Chloride Sample: 26 Laboratory: Analysis: QC Batch:	6098 - AH-2 6-6.5' Midland Chloride (Titration) 81651	Analytical M Date Analy	<200 Method: zed: paration:	mg/Kg SM 4500-Cl B 2011-05-26	50 Prep Method: Analyzed By:	

.

Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81651	Date An	alyzed:	2011-05-26	Analyzed By:	AR.
Prep Batch:	69151	Sample 1	Preparation:	2011-05-20	Prepared By:	AR
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride			<200	mg/Kg	50	4.00

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Xylene

mg/Kg

0.02

Method Blanks

Method Bl	ank (1)	QC Batch: 81213	
QC Batch:	81213		Date Analyzed:

QC Batch:	81213	Ι	Date Analyzed:	2011-05-12	Analyzed By	: ME
Prep Batch:	68938	Q	QC Preparation:	2011-05-12	Prepared By	: ME
				MDL		
Parameter		Flag	Cert	Result	Units	\mathbf{RL}
Benzene			1	< 0.0118	mg/Kg	0.02
Toluene			1	< 0.00600	mg/Kg	0.02
Ethylbenzene	e		1	< 0.00850	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	66.6 - 122
4-Bromofluorobenzene (4-BFB)			1.46	mg/Kg	1	2.00	73	55.4 - 124

1

< 0.00613

Method Blank (1) QC Batch: 81214

QC Batch: 81214			nalyzed:	2011-05-1			Analyze	•
Prep Batch: 68938		QC Pre	eparation:	2011-05-1	2		Preparec	l By: ME
					MDL			
Parameter	Flag		Cert		Result		Units	\mathbf{RL}
GRO			1		< 0.753		mg/Kg	2
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	1	2.00	91	67.6 - 150
4-Bromofluorobenzene (4-BFB)			1.51	mg/Kg	1	2.00	76	52.4 - 130

Method Bla	unk (1)	QC Batch: 81246			
QC Batch: Prep Batch:			Date Analyzed: QC Preparation:	Analyzed By: Prepared By:	Ŷ

Report Date: June 1, 114-6400900	2011	Work Order Antelope State			Page Number: 14 of 25 Eddy Co., NM		
Parameter	Flag	Cert	MDL Result	Units	RL		
DRO	······································	1	<15.7	mg/Kg	50		
Surrogate	Flag Cert	Result Units		Spike Percent Amount Recovery	Recovery Limits		
n-Tricosane		105 mg/Kg	<u> </u>	100 105	70 - 130		
Method Blank (1)	QC Batch: 81559	I					
QC Batch: 81559 Prep Batch: 69151		Date Analyzed: QC Preparation:	2011-05-24 2011-05-20	Analyzed Prepared			
Parameter	Flag	Cert	MDL Result	Units	RL		
Chloride			<3.85	mg/Kg	4		
Method Blank (1)	QC Batch: 81650	I					
QC Batch: 81650 Prep Batch: 69151		Date Analyzed: QC Preparation:	2011-05-26 2011-05-20	Analyzed Prepared			
Parameter	Flag	Cert	MDL Result	Units	RL		
Chloride			<3.85	nıg/Kg	4		
Method Blank (1)	QC Batch: 81651						
QC Batch: 81651 Prep Batch: 69151		Date Analyzed: QC Preparation:	2011-05-26 2011-05-20	Analyzed Prepared	By: AR By: AR		
Demonster	ות		MDL	TT 11	DI		
Parameter Chloride	Flag	Cert	Result <3.85	Units	<u>RL</u>		
			<u>\3.03</u>	mg/Kg			

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Work Order: 11051103 Antelope State Tank Battery Page Number: 15 of 25 Eddy Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:	81213	Date Analyzed:	2011-05-12	Analyzed By:	ME
Prep Batch:	68938	QC Preparation:	2011-05-12	Prepared By:	ME

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	2.04	mg/Kg	1	2.00	< 0.0118	102	81.9 - 108
Toluene		1	2.18	mg/Kg	1	2.00	< 0.00600	109	81.9 - 118
Ethylbenzene		1	1.88	m mg/Kg	1	2.00	< 0.00850	94	78.4 - 115
Xylene		1	5.62	mg/Kg	1	6.00	< 0.00613	94	79.1 - 116

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	2.00	mg/Kg	1	2.00	< 0.0118	100	81.9 - 108	2	20
Toluene		1	2.13	mg/Kg	1	2.00	< 0.00600	106	81.9 - 118	2	20
Ethylbenzene		1	1.87	mg/Kg	1	2.00	. <0.00850	94	78.4 - 115	0	20
Xylene		1	5.56	mg/Kg	1	6.00	< 0.00613	93	79.1 - 116	1	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.60	1.57	mg/Kg	1	2.00	80	78	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1.59	1.56	mg/Kg	1	2.00	80	78	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:	81214 68938				zed: 2011 tion: 2011					ed By: ME ed By: ME
				LCS			Spike	Matrix		Rec.
Param		F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO			1	12.7	mg/Kg	1	20.0	< 0.753	64	60.9 - 95.4
Democrat magon	some in based and	4)	L D	DD :- 1	1 (1	1		1 1/		

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

aramFCResultUnitsDil.AmountMatrix ResultRec.Ref. LimitRPDaramFCResultUnitsDil.AmountResultResultRec.RPIaramFCResultUnitsDil.AmountResultRec.RPIROi12.3mg/Kg120.0<0.7536260.995.4320ercent recovery is based on the spike result.RPD is based on the spike duplicate result.LCSLCSDSpikeLCSLCSDRec.urrogateResultResultUnitsDil.AmountRec.Rec.Linitrifluorotoluene (TFT)1.991.95mg/Kg12.001009861.9-14Bornofluorobenzene (4-BFB)1.781.79mg/Kg12.00899068.2-13CBatch:81246DateAnalyzed:2011-05-13Analyzed By: kgrep Batch:68968QCPreparation:2011-05-13Prepared By: kgROi206mg/Kg1250<15.78247.5ROi206mg/Kg1250<15.78247.5144.4ROi200mg/Kg1250<15.78047.5144.1320ercent recovery is based on the spike result.RPDIsitsDil.AmountRec.LimitRPD </th <th>Report Date: June 1, 2011 114-6400900</th> <th colspan="12">Work Order: 11051103Page Number: 16 of 25Antelope State Tank BatteryEddy Co., NM</th>	Report Date: June 1, 2011 114-6400900	Work Order: 11051103Page Number: 16 of 25Antelope State Tank BatteryEddy Co., NM											
aramFCResultUnitsDil.AmountResultRec.LimitRPDLimitaramFCResultUnitsDil.AmountResultRec.LimitRPDLimitRO112.3mg/Kg120.0<0.7536260.9 - 95.4320ercent recovery is based on the spike result.RPD is based on the spike and spike duplicate result.RPDLimitRPDLimitarrogateResultResultResultUnitsDil.AmountRec.Rec.Limitrifiborotoluene (TFT)1.991.95mg/Kg12.001009861.9 - 14Bromofluorobenzene (4-BFB)1.781.79mg/Kg12.00899068.2 - 13aboratory Control Spike (LCS-1)I.781.79mg/Kg12.00899068.2 - 13C Batch:81246Date Analyzed:2011-05-13Analyzed By:kgrep Batch:68968QC Preparation:2011-05-13Prepared By:kgRO-206mg/Kg1250<15.78247.5 - 144.ercent recovery is based on the spike result.RPD is based on the spike and spike duplicate result.Rec.LimitRO-200mg/Kg1250<15.78047.5 - 144.1320ercent recovery is based on the spike result.RPD is based on the spike and spike duplicate result.RPD is ba	control spikes continued								-				
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Denom	F · C		Unito	Б	-					חסס		
aramFCResultUnitsDil.AmountResultRec.LimitRPDLimitRO112.3mg/Kg120.0<0.753	Param	FC	Result	Units	Dil.	Amount	Result	nec.		<u>11110</u>	RPD		
ROi12.3mg/Kg120.0 < 0.753 62 $60.9 - 95.4$ 320ercent recovery is based on the spike result.RPD is based on the spike and spike duplicate result.urrogateResultResultUnitsDil.AmountRec.Rec.LCSDRec.rifluorotoluene (TFT)1.991.95mg/Kg12.0010098 $61.9 - 14$ Bromofluorobenzene (4-BFB)1.781.79mg/Kg12.008990 $68.2 - 13$ aboratory Control Spike (LCS-1)C Batch:81246Date Analyzed:2011-05-13Analyzed By:kgrep Batch:68968QC Preparation:2011-05-13Prepared By:kgaramFCResultUnitsDil.AmountResultRec.LimitROi206mg/Kg1250<15.7			LCSD			-		2				RPD	
arcent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.LCSLCSDSpikeLCSDRec.urrogateLCSLCSDSpikeLCSDRec.Limitright colspan="2">LCSLCSDSpikeLCSDRec.Limitaboratory Control Spike (LCS-1)LCSSpikeMatrixRec.LCSSpikeMatrixRec.LCSSpikeMatrixRec.aboratory Control Spike (LCS-1)CBatch:81246Date Analyzed:2011-05-13Analyzed By:kgaramFCResultUnitsDil.AmountResultReLCSSpikeMatrixRec.LCSSpikeMatrixRec.LCSSpikeMatrixReLCSSpikeMatrixRec.LimitRO1 <td>Param</td> <td>F C</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Limit</td>	Param	F C										Limit	
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mrrogateResultResultUnitsDil.AmountRec.Rec.Limitrifluorotoluene (TFT) 1.99 1.95 mg/Kg 1 2.00 100 98 $61.9 - 14$ Bromofluorobenzene (4-BFB) 1.78 1.79 mg/Kg 1 2.00 89 90 $68.2 - 13$ aboratory Control Spike (LCS-1) 1.78 1.79 mg/Kg 1 2.00 89 90 $68.2 - 13$ (C Batch: 81246 Date Analyzed: $2011-05-13$ Analyzed By: kg rep Batch: 68968 QC Preparation: $2011-05-13$ Prepared By: kg aramFCResultUnitsDil.AmountResultRec.LimitROi 206 mg/Kg 1 250 <15.7 82 $47.5 - 144.$ aramFCResultUnitsDil.AmountResultRec.RPIaramFCResultUnitsDil.AmountResultRec.RPIaramFCResultUnitsDil.AmountResultRPDLimitROi 200 mg/Kg 1 250 <15.7 80 $47.5 - 144.1$ 3 20 ercent recovery is based on the spike result.RPDLimitRPDLimitRPDLimitRPDLimitROi 200 mg/Kg 1 250 <15.7 80 $47.5 - 144.1$ 3	Percent recovery is based on the	spike res	ult. RPD i	is based of	n the	spike and	spike du	plicate 1	esult.				
mrrogateResultResultUnitsDil.AmountRec.Rec.Limitrifluorotoluene (TFT) 1.99 1.95 mg/Kg 1 2.00 100 98 $61.9 - 14$ Bromofluorobenzene (4-BFB) 1.78 1.79 mg/Kg 1 2.00 89 90 $68.2 - 13$ aboratory Control Spike (LCS-1) 1.78 1.79 mg/Kg 1 2.00 89 90 $68.2 - 13$ (C Batch: 81246 Date Analyzed: $2011-05-13$ Analyzed By: kg rep Batch: 68968 QC Preparation: $2011-05-13$ Prepared By: kg aramFCResultUnitsDil.AmountResultRec.LimitROi 206 mg/Kg 1 250 <15.7 82 $47.5 - 144.$ aramFCResultUnitsDil.AmountResultRec.RPIaramFCResultUnitsDil.AmountResultRec.RPIaramFCResultUnitsDil.AmountResultRPDLimitROi 200 mg/Kg 1 250 <15.7 80 $47.5 - 144.1$ 3 20 ercent recovery is based on the spike result.RPDLimitRPDLimitRPDLimitRPDLimitROi 200 mg/Kg 1 250 <15.7 80 $47.5 - 144.1$ 3			LCS	LCS	D		£	Spike	LCS	LCSE	•	Rec.	
rifluorotoluene (TFT) 1.99 1.95 mg/Kg 1 2.00 100 98 $61.9 - 14$ Bromoffuorobenzene (4-BFB) 1.78 1.79 mg/Kg 1 2.00 89 90 $68.2 - 13$ aboratory Control Spike (LCS-1) IC Batch: 81246 Date Analyzed: $2011-05-13$ Analyzed By: kg $rep Batch:68968QC Preparation:2011-05-13Prepared By:kgLCSSpikeMatrixRec.aramFCResultUnitsDil.AmountResultRec.RO\iota206mg/Kg1250<15.78247.5 - 144.ercent recovery is based on the spike result.RPD is based on the spike and spike duplicate result.ICSDSpikeMatrixRec.RPIaramFCResultUnitsDil.AmountResultRec.RPIaramFCResultUnitsDil.AmountResultRec.RPIaramFCResultUnitsDil.AmountResultRec.RPIICSDSpikeMatrixRec.Ref.RPIaramFCResultUnitsDil.AmountResultRef.LimitRO\iota200mg/Kg1250$	Surrogate					Units		-					
aboratory Control Spike (LCS-1) IC Batch:81246Date Analyzed:2011-05-13Analyzed By:kgrep Batch:68968QC Preparation:2011-05-13Prepared By:kgaramFCResultUnitsDil.AmountResultRec.LimitROi206mg/Kg1250<15.7	Trifluorotoluene (TFT)			1.95	5 n	ng/Kg					61	.9 - 142	
C Batch: 81246 rep Batch:Date Analyzed: $2011-05-13$ QC Preparation:Analyzed By: Rec.kgaramFCResultUnitsDil.AmountResultRec.LimitRO1206mg/Kg1250<15.7	4-Bromofluorobenzene (4-BFB)		1.78	3 1.79) n	ng/Kg	1	2.00	89	90	68	.2 - 132	
ercent recovery is based on the spike result. RPD is based on the spike and spike duplicate result. LCSD Spike Matrix Rec. RPI aram F C Result Units Dil. Amount Result Rec. Limit RPD Limit RO 1 200 mg/Kg 1 250 <15.7 80 47.5 - 144.1 3 20 ercent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.													
LCSDSpikeMatrixRec.RPIaramFCResultUnitsDil.AmountResultRec.LimitRPDLimitRO1200mg/Kg1250<15.7	Param	F	C Re	sult (Units		Amoun	ıt Re	sult		L	imit	
aramFCResultUnitsDil.AmountResultRec.LimitRPDLimitRO1200mg/Kg1250<15.7	Param DRO		C Re	sult U 06 m	Units 1g/Kg	1	Amoun 250	t Re	esult 15.7		L	imit	
RO1200mg/Kg1250<15.78047.5- 144.1320ercent recovery is based on the spike result.RPD is based on the spike and spike duplicate result.	Param DRO		C Re 1 2 ult. RPD	sult U 06 m	Units 1g/Kg	1	Amoun 250	t Re	esult 15.7		L	imit	
ercent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.	Param DRO Percent recovery is based on the	spike res	C Re 1 2 ult. RPD i LCSD	sult U 06 m is based o	Units ng/Kg n the s	1 spike and Spike	Amoun 250 spike du Matrix	t Re < plicate r	esult 15.7 result. Ro	82 ec.	L 47.5	imit - 144.1 RPD	
	Param DRO Percent recovery is based on the Param	spike res F C	C Re 1 2 ult. RPD 1 LCSD Result	sult U 06 m is based of Units	Units ng/Kg n the s Dil.	1 spike and Spike Amount	Amoun 250 spike du Matrix Result	t Re c plicate r Rec.	esult 15.7 result. Ra Lin	82 ec. nit	L 47.5 RPD	imit - 144.1 RPD Limit	
	Param DRO Percent recovery is based on the Param DRO	spike res F C	CRei2ult.RPDLCSDResult200	sult U 06 m is based o Units mg/Kg	Units ng/Kg n the s Dil. 1	1 spike and Spike Amount 250	Amoun 250 spike du Matrix Result <15.7	t Re c plicate r Rec. 80	esult 15.7 result. Ra Lin 47.5 -	82 ec. nit	L 47.5 RPD	imit - 144.1 RPD Limit	
LCS LCSD Spike LCS LCSD Rec.	Param DRO Percent recovery is based on the Param DRO	spike res F C	CRei2ult.RPDLCSDResult200	sult U 06 m is based o Units mg/Kg	Units ng/Kg n the s Dil. 1	1 spike and Spike Amount 250	Amoun 250 spike du Matrix Result <15.7	t Re c plicate r Rec. 80	esult 15.7 result. Ra Lin 47.5 -	82 ec. nit	L 47.5 RPD	imit - 144.1 RPD Limit	
urrogate Result Result Units Dil. Amount Rec. Rec. Limit	Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the	spike res	C Re 1 2 ult. RPD CSD Result 200 ult. RPD LCSI	sult U 06 m is based o Units mg/Kg is based o	$\frac{\text{Units}}{\text{ng/Kg}}$ n the s $\frac{\text{Dil.}}{1}$ n the s	1 spike and Amount 250 spike and	Amoun 250 spike du Matrix Result <15.7 spike du Spike	t Rec. Plicate r Rec. 80 plicate r	esult 15.7 result. Lin 47.5 - result.	82 ec. nit 144.1 LCSD	L 47.5 RPD 3	imit - 144.1 RPD Limit 20 Rec.	
0	Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the Surrogate	spike res <u>F</u> C i spike res LCS Result	C Re 1 2 ult. RPD CSD Result 200 ult. RPD LCSI Resul	sult U 06 m is based o Units mg/Kg is based o O t Ur	Units $\frac{1}{1}$ Dil. 1 n the s n the s	1 spike and Amount 250 spike and Dil.	Amoun 250 spike du Matrix Result <15.7 spike du Spike Amou	t Re c c c c c c c c c c c c c c c c c c c	sult 15.7 result. Lin 47.5 - result. LCS Rec.	82 ec. nit 144.1 LCSD Rec.	L 47.5 RPD 3	imit - 144.1 RPD Limit 20 Rec. Limit	
•	Param DRO Percent recovery is based on the	spike res	C Re 1 2 ult. RPD i LCSD	sult U 06 m is based o	Units ng/Kg n the s	1 spike and Spike	Amoun 250 spike du Matrix	t Re < plicate r	esult 15.7 result. Ro	82 ec.	L 47.5	im - 1 F	
arrogate mesant onits Dit. Amount nec. Rec. Limit	Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the	spike res	C Re 1 2 ult. RPD CSD Result 200 ult. RPD LCSI	sult U 06 m is based o Units mg/Kg is based o	$\frac{\text{Units}}{\text{ng/Kg}}$ n the s $\frac{\text{Dil.}}{1}$ n the s	1 spike and Amount 250 spike and	Amoun 250 spike du Matrix Result <15.7 spike du Spike	t Rec. Plicate r Rec. 80 plicate r	esult 15.7 result. Lin 47.5 - result.	82 ec. nit 144.1 LCSD	L 47.5 RPD 3	imit - 144. RPE Limi 20 Rec.	
	Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the Surrogate	spike res <u>F</u> C i spike res LCS Result	C Re 1 2 ult. RPD CSD Result 200 ult. RPD LCSI Resul	sult U 06 m is based o Units mg/Kg is based o O t Ur	Units $\frac{1}{1}$ Dil. 1 n the s n the s	1 spike and Amount 250 spike and Dil.	Amoun 250 spike du Matrix Result <15.7 spike du Spike Amou	t Re c c c c c c c c c c c c c c c c c c c	sult 15.7 result. Lin 47.5 - result. LCS Rec.	82 ec. nit 144.1 LCSD Rec.	L 47.5 RPD 3	imit - 144. RPI Limi 20 Rec. Limit	
0	Param DRO Percent recovery is based on the Param DRO	spike res <u>F</u> C i spike res LCS Result	C Re 1 2 ult. RPD CSD Result 200 ult. RPD LCSI Resul	sult U 06 m is based o Units mg/Kg is based o O t Ur	Units $\frac{1}{1}$ Dil. 1 n the s n the s	1 spike and Amount 250 spike and Dil.	Amoun 250 spike du Matrix Result <15.7 spike du Spike Amou	t Re c c c c c c c c c c c c c c c c c c c	sult 15.7 result. Lin 47.5 - result. LCS Rec.	82 ec. nit 144.1 LCSD Rec.	L 47.5 RPD 3	imit - 144. RPI Lim 20 Rec. Limit	
0	Param DRO Percent recovery is based on the DRO Percent recovery is based on the Surrogate n-Tricosane	spike res <u>F</u> C spike res LCS Result 114	C Re 1 2 ult. RPD CSD Result 200 ult. RPD LCSI Resul	sult U 06 m is based o Units mg/Kg is based o O t Ur	Units $\frac{1}{1}$ Dil. 1 n the s n the s	1 spike and Amount 250 spike and Dil.	Amoun 250 spike du Matrix Result <15.7 spike du Spike Amou	t Re c c c c c c c c c c c c c c c c c c c	sult 15.7 result. Lin 47.5 - result. LCS Rec.	82 ec. nit 144.1 LCSD Rec.	L 47.5 RPD 3	imit - 144. RPE Limi 20 Rec. Limit	
Tricosane 114 110 mg/Kg 1 100 114 110 70 - 13 aboratory Control Spike (LCS-1)	Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the Surrogate n-Tricosane Laboratory Control Spike (L	spike res <u>F</u> C spike res LCS Result 114	C Re 1 2 ult. RPD LCSD Result 200 ult. RPD LCSI Resul 110	sult U 06 m is based o Units mg/Kg is based o 0 t Ur mg	Units ng/Kg n the s Dil. 1 n the s nits /Kg	1 spike and Amount 250 spike and Dil. 1	Amoun 250 spike du Matrix Result <15.7 spike du Spike Amou	t Re c c c c c c c c c c c c c c c c c c c	sult 15.7 result. Lin 47.5 - result. LCS Rec.	82 nit 144.1 LCSD Rec. 110	L 47.5 RPD 3	imit - 144. RPC Limi 20 Rec. Limit 0 - 130	
Tricosane 114 110 mg/Kg 1 100 114 110 70 - 13 aboratory Control Spike (LCS-1) C Batch: 81559 Date Analyzed: 2011-05-24 Analyzed By: AR	Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the Surrogate n-Tricosane Laboratory Control Spike (L QC Batch: 81559	spike res <u>F</u> C spike res LCS Result 114	C Re 1 2 ult. RPD LCSD Result 200 ult. RPD LCSI Resul 110 Date	sult U 06 m is based o Units mg/Kg is based o 0 t Ur mg Analyzed:	Units ng/Kg n the s Dil. 1 n the s nits /Kg	1 spike and Amount 250 spike and Dil. 1	Amoun 250 spike du Matrix Result <15.7 spike du Spike Amou	t Re c c c c c c c c c c c c c c c c c c c	sult 15.7 result. Lin 47.5 - result. LCS Rec.	82 nit 144.1 LCSD Rec. 110	L 47.5 RPD 3 7	imit - 144.1 RPD Limit 20 Rec. Limit 0 - 130 : AR	
Tricosane 114 110 mg/Kg 1 100 114 110 70 - 13 aboratory Control Spike (LCS-1) C Batch: 81559 Date Analyzed: 2011-05-24 Analyzed By: AR	Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the Surrogate n-Tricosane Laboratory Control Spike (L QC Batch: 81559	spike res <u>F</u> C spike res LCS Result 114	C Re 1 2 ult. RPD LCSD Result 200 ult. RPD LCSI Resul 110 Date QC P	sult U 06 m is based o Units mg/Kg is based o 0 1 Ur mg Analyzed: reparation	Units ng/Kg n the s Dil. 1 n the s nits /Kg	1 spike and Amount 250 spike and Dil. 1	Amoun 250 spike du Matrix Result <15.7 spike du Spike Amou 100	t Re Rec.80plicate reIntI	sult 15.7 esult. A7.5 - esult. ACS Rec. 114	82 nit 144.1 LCSD Rec. 110 Analyz Prepar	L 47.5 RPD 3 7	imit - 144.1 RPD Limit 20 Rec. Limit 0 - 130 : AR AR	
Tricosane 114 110 mg/Kg 1 100 114 110 70 - 13 aboratory Control Spike (LCS-1) Image: C	Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the Surrogate n-Tricosane Laboratory Control Spike (L QC Batch: 81559	spike res <u>F</u> C spike res LCS Result 114	C Re 1 2 ult. RPD Result 200 ult. RPD LCSI Result 110 Date QC P	sult U 06 m is based o Units mg/Kg is based o 0 1t Ur mg Analyzed: reparation LCS	Units ng/Kg n the s Dil. 1 n the s nits /Kg 20 n: 20	1spike andAmount250spike andDil.1111-05-2411-05-20	Amoun 250 spike du Matrix Result <15.7 spike du Spike Amou 100	t Re Rec.80plicate re1nt1ke	sult 15.7 result. Ra Lin 47.5 - result. LCS Rec. 114 Matrix	82 nit 144.1 LCSD Rec. 110 Analyz Prepar	L 47.5 RPD 3 7 ed By:	imit - 144.1 RPD Limit 20 Rec. Limit 0 - 130 - 130 - AR AR AR Rec.	

Report Date: June 1, 2011 114-6400900			An		Page Number: 17 of 2 Eddy Co.; NN						
Percent recovery is based on th	e spike r	esult.	RPD	is based o	n the sp	oike and sp	ike duplica	ate resu	ılt.		
]	LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	C I	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			103	$\mathrm{mg/Kg}$	1	100	<3.85	103	85 - 115	6	20
Percent recovery is based on th	e spike 1	esult.	RPD	is based of	n the sp	oike and sp	ike duplica	ate resu	ılt.		
Laboratory Control Spike (LCS-1)										
QC Batch: 81650			Date	Analyzed:	201	1-05-26			Anal	yzed By	: AR
Prep Batch: 69151				reparation		1-05-20				ared By	
			- v	- • P • • • • • •							
				1.00			a 1	• • • •	, .		D
	,			LCS	T T ! 4	D:1	Spike		atrix D		Rec.
Param Chloride		<u>-</u>		lesult 97.6	Units	 	Amount 100			ec.)8 - 8	Limit 85 - 115
					mg/Kg					00 0	50 - 110
Percent recovery is based on th	e spike i	esult.	RPD	is based of	n the sp	orke and sp	ike duplica	ate resu	ılt.		
]	LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	C I	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			104	mg/Kg	1	100	<3.85	104	85 - 115	6	20
Percent recovery is based on th	e spike 1	result.	RPD	is based o	n the sp	ike and sp	ike duplica	ate resi	ılt.		
Laboratory Control Spike ((LCS-1)										
QC Batch: 81651			Date	Analyzed:	201	1-05-26			Anal	yzed By	z: AR
Prep Batch: 69151				reparation		1-05-20				ared By	
•			•	*					1	U	
				1.00			0. 11	3. <i>1</i>			D
Param	1	2 (LCS	T Tax 64 -	Dil	Spike		atrix		Rec.
Farall	1	2 1		Result	Units	Dil.	Amount			.ec.	Limit
Chloride				98.0	mg/Kg	1	100		3.85 9)8 (85 - 115

LCSD RPD Spike Rec. Matrix F C Result Limit Param Units Dil. Amount Result Rec. Limit RPD Chloride 104 mg/Kg 100 <3.8585 - 115 20 1 104 6

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

Report Date: June 1, 2011 114-6400900			A		order: 11 State Tar	051103 1k Battery	7		Page Number: 18 of Eddy Co., N			
Matrix Spike (MS-1) Spi	ked Sa	mple	e: 266100)								
QC Batch: 81213 Prep Batch: 68938				e Analyze Preparati		11-05-12 11-05-12				Analyz Prepar	ied By: ed By:	ME ME
				MS			Spike	М	atrix		1	Rec.
Param		F	С	Result	Units	Dil.	Amount		esult	Rec.		imit
Benzene		-	1	10.3	mg/Kg		10.0		0.118	103		5 - 112
Toluene			1	11.4	mg/Kg		10.0		8359	106		4 - 113
Ethylbenzene			1	9.94	mg/Kg		10.0		7886	92		9 - 114
Xylene			1	30.5	mg/Kg		30.0		7118	93		- 114
Percent recovery is based on th	e spik	e rest		······								
			MSD			Spike	Matrix		Re			RPD
Param	F	С	Result		Dil.	Amount	Result	Rec.	Lir		RPD	Limit
Benzene		1	10.1	mg/Kg	; 10	10.0	< 0.118	101	80.5		2	20
Toluene		ı	11.0	mg/Kg	<u>;</u> 10	10.0	0.8359	102	82.4	- 113	4	20
Ethylbenzene		1	9.63	mg/Kg	g 10	10.0	0.7886	88	83.9	- 114	3	20
Xylene		3	29.9	mg/Kg	; 10	30.0	2.7118	91	84 -	114	2	20
Percent recovery is based on th	e spike	e rest				spike and						
					ISD		-	ike	MS	MSE		Rec.
Surrogate								ount	Rec.	Rec.		imit
Irifluorotoluene (TFT)						ng/Kg		.0	112	102		3 - 117
4-Bromofluorobenzene (4-BFB)			12	2.4 1	1.2 r	ng/Kg	10 1	.0	124	112	35.	5 - 129
Matrix Spike (MS-1) Spil QC Batch: 81214 Prep Batch: 68938	ked Sa	mple		2 e Analyze Preparati		11-05-12 11-05-12				Analyz Prepar	zed By: red By:	ME ME
Param		F	С	MS Result	Units	Dil.	Spike Amount		atrix esult	Rec.		Rec. Jimit
GRO				12.8	mg/Kg		20.0		0.753	64		8 - 114
Percent recovery is based on the	e spike	e rest		······								
_			MSD			Spike	Matrix	_	Re			RPD
Param	F	С	Result	Units	Dil.	Amount	Result	Rec.	Lir		RPD	Limit
GRO		1	12.4	mg/Kg	; 1	20.0	< 0.753	62	61.8	- 114	3	20
Percent recovery is based on the	e spike	e resu	<u>llt. RPI</u>) is based	on the s	spike and		<u>cate re</u> ontinu		·····		

	Work Order: 11051103 Antelope State Tank Battery								Page Number: 19 of 2 Eddy Co., NM			
matrix spikes continued												
Querosto			MS Result	MSD Result	Units	Dil.	Spike Amount	MS			Rec. Limit	
Surrogate			nesuit	nesuit	Omts	DII.	Amount	Rec	. nec			
			MS	MSD			Spike	MS	MS	D	Rec.	
Surrogate			Result .	Result	Units	Dil.	Amount				Limit	
Trifluorotoluene (TFT)			2.22	2.20	mg/Kg	1	2	111) - 162	
4-Bromofluorobenzene (4-BFB)		2.06	2.01	mg/Kg	1	2	103	100) 50) - 162	
Matrix Spike (MS-1) Spi QC Batch: 81246 Prep Batch: 68968	ked Sample	Ι)92 Date Anal QC Prepa		2011-05-13 2011-05-13					zed By red By	4,5	
			MS			Spik		atrix			ec.	
Param	F	С	Result	Units		Amou		sult	Rec.		mit	
DRO		1	184	mg/K	g 1	250	<	15.7	74	11.7 -	- 152.3	
Percent recovery is based on the	ne spike resu	ılt. R	PD is bas	sed on th	e spike and	spike d	uplicate r	esult.				
		MSI	ר ר		Spike	Matri	x	Re	c		RPD	
Param	FC	Resu		ts Dil.	Amount	Result		Lim		RPD	Limit	
DRO		181			250	<15.7		11.7 -		2	20	
Percent recovery is based on th	e spike resu	ılt. R			e spike and	spike d	uplicate r	esult.				
·	-				-	-	-		MOD		D	
Gumorata	MS Result		MSD Result	Units	Dil.	Spi Amo		MS Bee	MSD		Rec. Limit	
Surrogate n-Tricosane	<u>106</u>		$\frac{112}{112}$	mg/Kg				Rec. 106	Rec. 112) - 130	
				0/0								
Matrix Spike (MS-1) Spi	ked Sample	: 2660)87									
QC Batch: 81559		Ľ	ate Anal	yzed: 2	2011-05-24				Analyz	ed By:	\mathbf{AR}	
Prep Batch: 69151					2011-05-20				Prepar			
	-	~	MS	~ * -				Matrix			Rec.	
Param	F	C	Result				ount	Result	Rec		Limit	
Chloride			10400				000	<385	104	80) - 120	
Percent recovery is based on th	ie spike resu	ılt. R							104	01) - 12	

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			10800	mg/Kg	100	10000	<385	108	80 - 120	4	20

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

Matrix Spike (MS-1)	Spiked Sample	: 266097							
QC Batch: 81650 Prep Batch: 69151		Date An QC Prep	v	1-05-26 1-05-20			•	yzed By ared By	
5	5	MS			Spike		trix		Rec.
Param Chloride	F	C Rest 1020		Dil. 100	Amount 10000		sult Re 385 10		Limit 80 - 120
Percent recovery is based of	on the spike resu		0/0						
		MSD	-	Spike	Matrix		Rec.		RPD
Param	F C		Inits Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		10600 m	g/Kg 100	10000	<385	106	80 - 120	4	20
Percent recovery is based of	on the spike resu	ılt. RPD is b	ased on the sp	oike and sp	ike duplica	ate resu	ılt.		
·									
Matrix Spike (MS-1)	Spiked Sample	: 266107							
QC Batch: 81651		Date An	lyzed: 201	1-05-26			Anal	yzed By	7: AR.
Prep Batch: 69151		QC Prep	aration: 201	1-05-20			Prepa	ared By	r: AR.

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			10400	mg/Kg	100	10000	397	100	80 - 120

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

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			10800	mg/Kg	100	10000	397	104	80 - 120	4	20

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

Report Date: June 1, 2011 114-6400900

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Calibration Standards

Standard (CCV-1)

QC Batch: 81213	enzene oluene		Date Ana	Analyzed By: M						
				CCVs	CCVs	CCVs	Percent			
				True	Found	Percent	Recovery	Date		
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Benzene		1	mg/Kg	0.100	0.0983	98	80 - 120	2011-05-12		
Toluene		1	mg/Kg	0.100	0.102	102	80 - 120	2011-05-12		
Ethylbenzene		ı	mg/Kg	0.100	0.0900	90	80 - 120	2011 - 05 - 12		
Xylene		1	mg/Kg	0.300	0.268	89	80 - 120	2011-05-12		

Standard (CCV-2)

QC Batch: 81213			Date Ana	lyzed: 201	1-05-12		Analy	zed By: ME
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/Kg	0.100	0.0982	98	80 - 120	2011-05-12
Toluene		1	mg/Kg	0.100	0.106	106	80 - 120	2011 - 05 - 12
Ethylbenzene		1	mg/Kg	0.100	0.0912	91	80 - 120	2011-05-12
Xylene		1	mg/Kg	0.300	0.273	91	80 - 120	2011-05-12

Standard (CCV-1)

QC Batch:	81214		Date	Analyzed:	2011-05-12		Analy	zed By: ME
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	0.845	84	80 - 120	2011-05-12

Standard (CCV-2)

QC Batch: 81214

Date Analyzed: 2011-05-12

Analyzed By: ME

GRO Standard (CO QC Batch: 81 Param DRO Standard (CO QC Batch: 81 Param	June 1, 2011		An	Page Number: 22 of Eddy Co., N						
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed		
GRO		1	mg/Kg	1.00	0.857	86	80 - 120	2011-05-12		
Standard (C	CV-2)									
QC Batch: 8	1246		Date	Analyzed:	2011-05-13		Anal	yzed By: kg		
				CCVs	CCVs	CCVs	Percent			
				True	Found	Percent	Recovery	Date		
-	101	a .	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Param	Flag	Cert	omus							
DRO			mg/Kg	250	203	81	80 - 120	2011-05-13		
DRO Standard (C	CV-3)		mg/Kg		203 2011-05-13			2011-05-13 yzed By: kg		
DRO Standard (C	CV-3)		mg/Kg	250 Analyzed: CCVs			Anal Percent			
DRO Standard (C QC Batch: 8	CV-3) 31246	1	mg/Kg	250 Analyzed: CCVs True	2011-05-13 CCVs Found	81 CCVs Percent	Anal Percent Recovery	yzed By: kg Date		
DRO Standard (C QC Batch: 8 Param	CV-3)		mg/Kg Date Units	250 Analyzed: CCVs True Conc.	2011-05-13 CCVs Found Conc.	81 CCVs Percent Recovery	Anal Percent Recovery Limits	yzed By: kg Date Analyzed		
DRO Standard (C	CV-3) 31246	1	mg/Kg Date	250 Analyzed: CCVs True	2011-05-13 CCVs Found	81 CCVs Percent	Anal Percent Recovery	Date		
DRO Standard (C QC Batch: 8 Param DRO	CV-3) 1246 Flag	Cert	mg/Kg Date Units	250 Analyzed: CCVs True Conc.	2011-05-13 CCVs Found Conc.	81 CCVs Percent Recovery	Anal Percent Recovery Limits	yzed By: kg Date Analyzed		
DRO Standard (C QC Batch: 8 Param DRO	CV-3) 1246 Flag	Cert	mg/Kg Date Units mg/Kg	250 Analyzed: CCVs True Conc.	2011-05-13 CCVs Found Conc.	81 CCVs Percent Recovery	Anal Percent Recovery Limits 80 - 120	yzed By: kg Date Analyzed		
DRO Standard (C QC Batch: 8 Param DRO Standard (C	CV-3) 1246 Flag	Cert	mg/Kg Date Units mg/Kg	250 Analyzed: CCVs True Conc. 250	2011-05-13 CCVs Found Conc. 208	81 CCVs Percent Recovery	Anal Percent Recovery Limits 80 - 120	yzed By: kg Date Analyzed 2011-05-13		
DRO Standard (C QC Batch: 8 Param DRO Standard (C	CV-3) 1246 Flag	Cert	mg/Kg Date Units mg/Kg	250 Analyzed: CCVs True Conc. 250 Analyzed:	2011-05-13 CCVs Found Conc. 208 2011-05-13	81 CCVs Percent Recovery 83	Anal Percent Recovery Limits 80 - 120 Anal	yzed By: kg Date Analyzed 2011-05-13		
DRO Standard (C QC Batch: 8 Param DRO Standard (C	CV-3) 1246 Flag	Cert	mg/Kg Date Units mg/Kg	250 Analyzed: CCVs True Conc. 250 Analyzed: CCVs	2011-05-13 CCVs Found Conc. 208 2011-05-13 CCVs	81 CCVs Percent Recovery 83 CCVs	Anal Percent Recovery Limits 80 - 120 Anal Percent	yzed By: kg Date Analyzed 2011-05-13 yzed By: kg		

Standard (ICV-1)

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QC Batch: 81559

Date Analyzed: 2011-05-24

Analyzed By: AR

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Report Date: June 1, 114-6400900	2011			Vork Order: elope State 7	Page Number: 23 of 25 Eddy Co., NM					
	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed		
Chloride			mg/Kg	100	99.7	100	85 - 115	2011-05-24		
Standard (CCV-1)										
QC Batch: 81559			Date A	nalyzed: 2	011-05-24		Analy	zed By: AR		
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed		
Chloride	0		mg/Kg	100	100	100	85 - 115	2011-05-24		
Standard (ICV-1) QC Batch: 81650			Date A	nalyzed: 2	011-05-26		Analy	zed By: AR.		
				ICVs	ICVs	ICVs	Percent			
Param	Flag	Cert	Units	True Conc.	Found Conc.	Percent Recovery	Recovery Limits	Date Analyzed		
Chloride			mg/Kg	100	101	101	85 - 115	2011-05-26		
Standard (CCV-1)										
QC Batch: 81650			Date A	nalyzed: 2	011-05-26		Analy	zed By: AR		
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date		
	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Chloride			mg/Kg	100	99.2	99	85 - 115	2011-05-26		

Standard (ICV-1)

QC Batch: 81651

Date Analyzed: 2011-05-26

Analyzed By: AR

Report Date: Ju 114-6400900	ine 1, 2011		V Ante	Page Number: 24 of Eddy Co., N					
Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
Chloride			mg/Kg	100	99.3	99	85 - 115	2011-05-26	
Standard (CC)	V-1)								
QC Batch: 816	51		Date A	.nalvzed: 2	011-05-26		Analy	zed By: AR	
QO Bastan Olo			2000 1	•			1110013	bod Dy. 1110	
				CCVs	CCVs	CCVs	Percent		
				True	Found	Percent	Recovery	Date	
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Chloride			mg/Kg	100	101	101	85 - 115	2011-05-26	

Report Date: June 1, 2011 114-6400900

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Appendix

Laboratory Certifications

	Certifying	Certification	Laboratory
\mathbf{C}	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-10-TX	Midland

Standard Flags

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

Attachments

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

<u> </u>	03	\bigcap							
Analysis Reque	est of Chain of Custo	dy Record	Ĺ			PAG	E:	OF	2
7 analysis noque			_		-		REQUEST		
Te	TETRATECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946		is fext to C35	b :	es BH D- A				
CLIENT NAME:	SITE MANAGER:	PRESERVATIV		8	8	8260/624 8270/625		Ha	
COG PROJECT NO.: PROJECT N	IAME.				. 1 1 1	8260		ions.	
114-6400900 Antel				۳.		3240/ 1. Vol.			
LAB I.D. NUMBER JON	Eddy Co NW SAMPLE IDENTIFICATION	NUMBER OF COI FILTERED (Y/N) HICL HINO3 ICE NONE	BLEX 8021B	PAH 8270 RCRA Metals Ag	TCLP Volatiles TCLP Semi Volatiles	RCI GC.MS Vol. 8240/8260/62 GC.MS Semi. Vol. 8270/62 PCR's Anan/608	Pest. 808/608 Chloride Gamma Spec.	PLM (Asbestos) Major Anions/Cations, pH, TDS	
266085 5/4 5 K	kH-1 0-1	1 X	۶, ۲	4			X		
086	4H-1 (-1.5								
087	44-1 2-2.5'								
880	AH-1 3-3.5						\downarrow		
089	44-1 4-4.5								
090	44-1 5-5-5'						\square		
091	<u>44-1 6.5'</u>						╧╢╧╧		
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093	44-2 1-1.5								
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the fell 1	Date: 5-10-11 RECEIVED 8Y: (Signature)	Time: _1 (0:3		T				Date: _ <u>5 </u> Time:	
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CITY: Maland STATE: 98 CONTACT:PHONE:	ZIP: DATE:	TIME:		I	le Tau	orez.		RUSH Ch Authorize Yes	d: No
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Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

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CLIENT NAM	ME:		l		1910 N. Bi Midland, T (432) 682-458	A TECH ig Spring St. Fexas 79705 59 • Fax (432) 682-3946 GER:	NERS				RVAT		TVIONE (Eut to Cast		cd Cr Pb	Ba Cd Vr Pd Hg			24	8210/625					ons, pH, TDS		
PROJECT N			PR		T NAME:		INTAL		T	Т	Τ	Т			₹ 9	Ag As	atiles		10/82	9.0					12		
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