

HOBBS OCD

pJXK 1608446268
4067

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

State of New Mexico
Energy Minerals and Natural Resources

MAR 13 2013

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

RECEIVED

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

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Maljamar SWD 29 #1	Facility Type	SWD

Surface Owner	Federal	Mineral Owner		Lease No. (API#)	30-025-39519
				Closest well	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	29	17	32E					Lea

Latitude 32.799583 Longitude 103.787183

NATURE OF RELEASE

Type of Release	Produced water with skim oil	Volume of Release	20bbbls	Volume Recovered	15bbbls
Source of Release	4" discharge line rotted causing pipe to unthread.	Date and Hour of Occurrence	09/27/2012	Date and Hour of Discovery	09/27/2012 2:00 a.m.
Was Immediate Notice Given?	☐ Yes ☒ No ☒ Not Required	If YES, To Whom?			
By Whom?		Date and Hour			
Was a Watercourse Reached?	☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A 4" discharge line rotted which caused pipe to come unthreaded, releasing produced fluid onto the location and pasture. We have replaced the corroded pipe with new piping.

Describe Area Affected and Cleanup Action Taken.*

Initially 20bbbls were released and we were able to recover 15bbbls with a vacuum truck. The spill area traveled west and south of the pad location. 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.

Signature: 		OIL CONSERVATION DIVISION	
Printed Name: Josh Russo		Approved by District Supervisor:	
Title: HSE Coordinator		Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com		Conditions of Approval:	
Date: 10/02/2012 Phone: 432-212-2399		Attached ☐	

* Attach Additional Sheets If Necessary

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Release Notification and Corrective Action

OPERATOR

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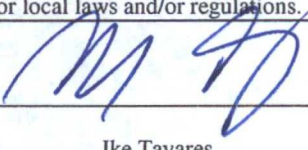
Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 685-4332
Facility Name	Maljamar SWD 29 #1	Facility Type	Tank Battery
Surface Owner: Federal	Mineral Owner	Lease No.	

LOCATION OF RELEASE

Unit Letter O	Section 29	Township 17	Range 32E	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude N32.799583 ° Longitude W103.787183 °

NATURE OF RELEASE

Type of Release: Produced water with skim oil	Volume of Release 20 bbls	Volume Recovered 15bbls
Source of Release: 4" discharge line rotted causing pipe to unthread	Date and Hour of Occurrence 09/27/2012	Date and Hour of Discovery 09/27/2010 2:00 A.M.
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* A 4" discharge line rotted which caused pipe to come unthreaded, releasing produced fluid onto the location and pasture. We have replaced the corroded pipe with new piping.		
Describe Area Affected and Cleanup Action Taken.* 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 laws and/or regulations.		
Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavares	Approved by District Supervisor:	
Title: Senior Project Manager	Approval Date:	Expiration Date:
E-mail Address: ike.tavares@tetrattech.com	Conditions of Approval:	Attached ☐
Date: 02/14/2013	Phone: (432) 682-4559	

* Attach Additional Sheets If Necessary

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Maljamar SWD 29 #1					
Company:	COG Operating LLC					
Section, Township and Range	Unit O	Sec 29	T17S	R32E		
Lease Number:	API-30-025- 4000 39519					
County:	Lea County					
GPS:	32.79974			103.78716		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From intersection of Hwy 82 and Hwy 529, go 4.5 miles SE on Hwy 529, turn left (north) and go 0.1 miles, turn right (east) and go 0.9 miles to location					

Release Data:

Date Released:	9/27/2012
Type Release:	Produced Water
Source of Contamination:	Discharge line
Fluid Released:	20 bbls
Fluids Recovered:	15 bbls

Official Communication:

Name:	Pat Ellis	Ike Tavaréz
Company:	COG Operating, LLC	Tetra Tech
Address:	One Concho Center	1910 N. Big Spring
	600 W. Illinois Ave.	
City:	Midland Texas, 79701	Midland, Texas
Phone number:	(432) 686-3023	(432) 682-4559
Fax:	(432) 684-7137	
Email:	pellis@conchoresources.com	ike.tavaréz@tetrattech.com

Ranking Criteria

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

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	5,000

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February 11, 2013

HOBBS OCD

MAR 13 2013

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

Re: Closure Report for the COG Operating LLC., Maljamar 29 #1 SWD, Unit O, Section 29, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill that occurred at the Maljamar 29 #1 SWD located in Unit O, Section 29, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.79974°, W 103.78716°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on September 27, 2012 and released approximately twenty (20) barrels of produced water with a skim of oil from a leaking 4" discharge line located on the pad near the well. Approximately fifteen (15) barrels of fluids were recovered. The spill originated on the pad and migrated southwest across the pad into the pasture. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 29. According to the NMOCD groundwater map, the depth to groundwater in this area is approximately 150' 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-

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559

Fax 432.682.3946

www.tetrattech.com



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 October 30, 2012, Tetra Tech personnel inspected and sampled the spill area. The spill area on the pad measured approximately 20' x 200' and 20' x 130' in the pasture 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. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the auger hole samples were below the RRAL for TPH and BTEX. The areas of AH-1 and AH-2 showed a shallow chloride impact and were vertically defined with chloride concentrations of 24.6 mg/kg (1-1.5') and 134 mg/kg (2-2.5'), respectively. The remaining auger holes were not vertically defined. Auger holes (AH-1, AH-5, AH-6 and AH-7) did show the chlorides concentrations declining, but spiked with depth towards the auger hole bottoms.

On November 30, 2012, Tetra Tech supervised the installation of soil borings to assess the areas not vertically defined. A total of five (5) soil borings were installed to a depth of approximately 20.0' below surface. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The soil boring locations are shown on Figure 3.

Referring to Table 1, the chloride impacted areas were vertically defined and significantly declined at 14-15' below surface. Soil borings (SB-6 and SB-7) did not show a significant impact to the upper soils (0 to 3.0') and spiked at approximately 6'-7' and 9'-10' below surface. The deeper samples at 14-15' significantly declined with depth.

Remediation and Conclusion

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. The final excavation depths of the soil remediation were met as stated in the approved work plan. The excavated areas and depths are highlighted in Table 1 and shown in Figure 4. The excavated area measured approximately 15' x 330' and the excavation depths ranged



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from 1.0' to 10.0' below surface. The area of AH-1, AH-3, and AH-4 were excavated to depths of approximately 1.0' to 2.0' below surface and approximately 4.0' in the area of AH-2. The remaining areas (AH-5, AH-6, and AH-7) were excavated to a depth of approximately 10.0' below surface and capped with a 40 mil liner at approximately 4.0' below surface.

Prior to backfilling, the BLM was contacted approved the backfilling the excavations, with no confirmation samples required. All the excavated areas were backfilled to surface with clean material. Approximately 680 cubic yards of soil were excavated and transported to the R360 facility for proper disposal.

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

Respectfully submitted,
TETRA TECH



Ike Tavaréz, PG
Senior Project Manager

cc: Pat Ellis – COG
cc: Jennifer Van Curen – BLM

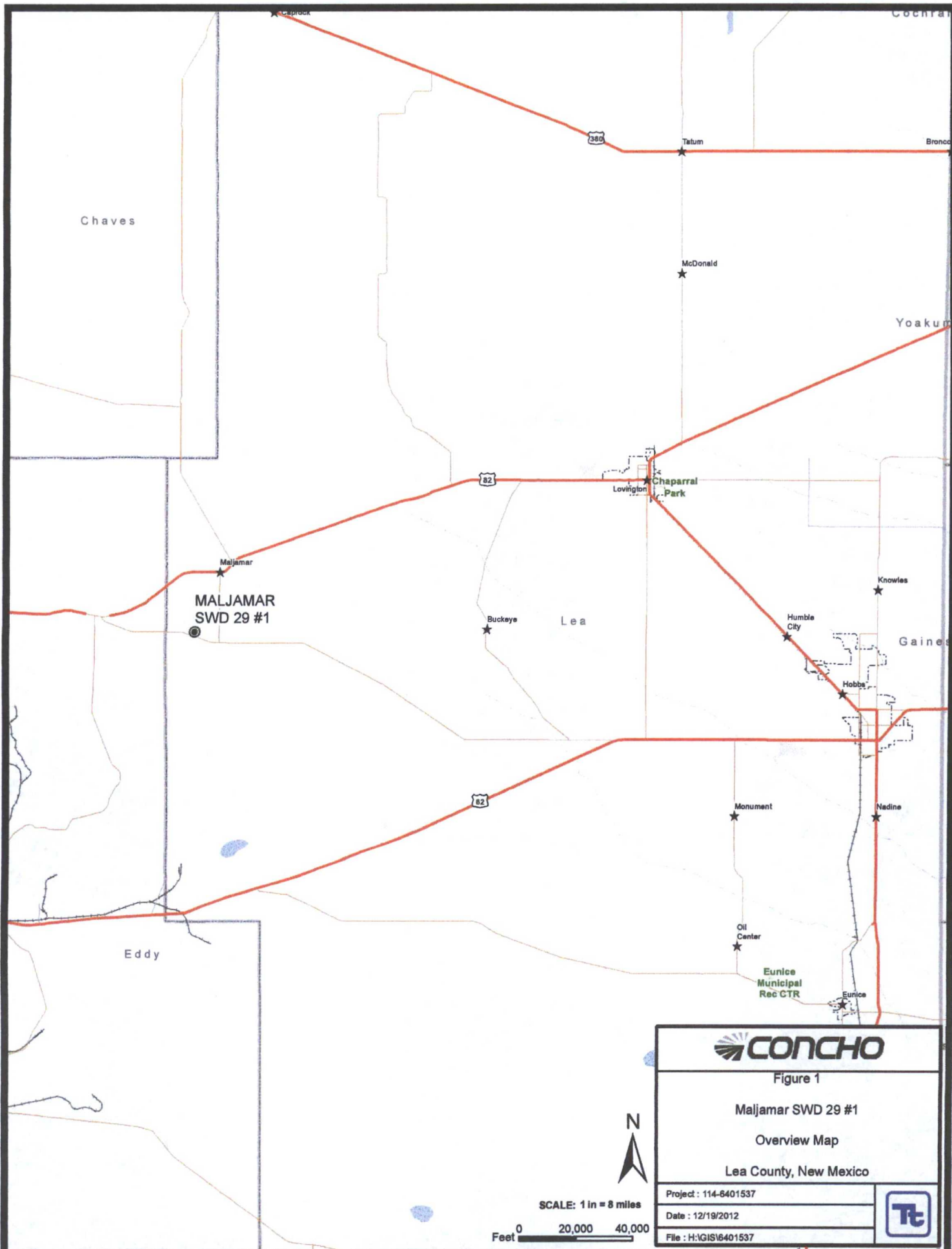
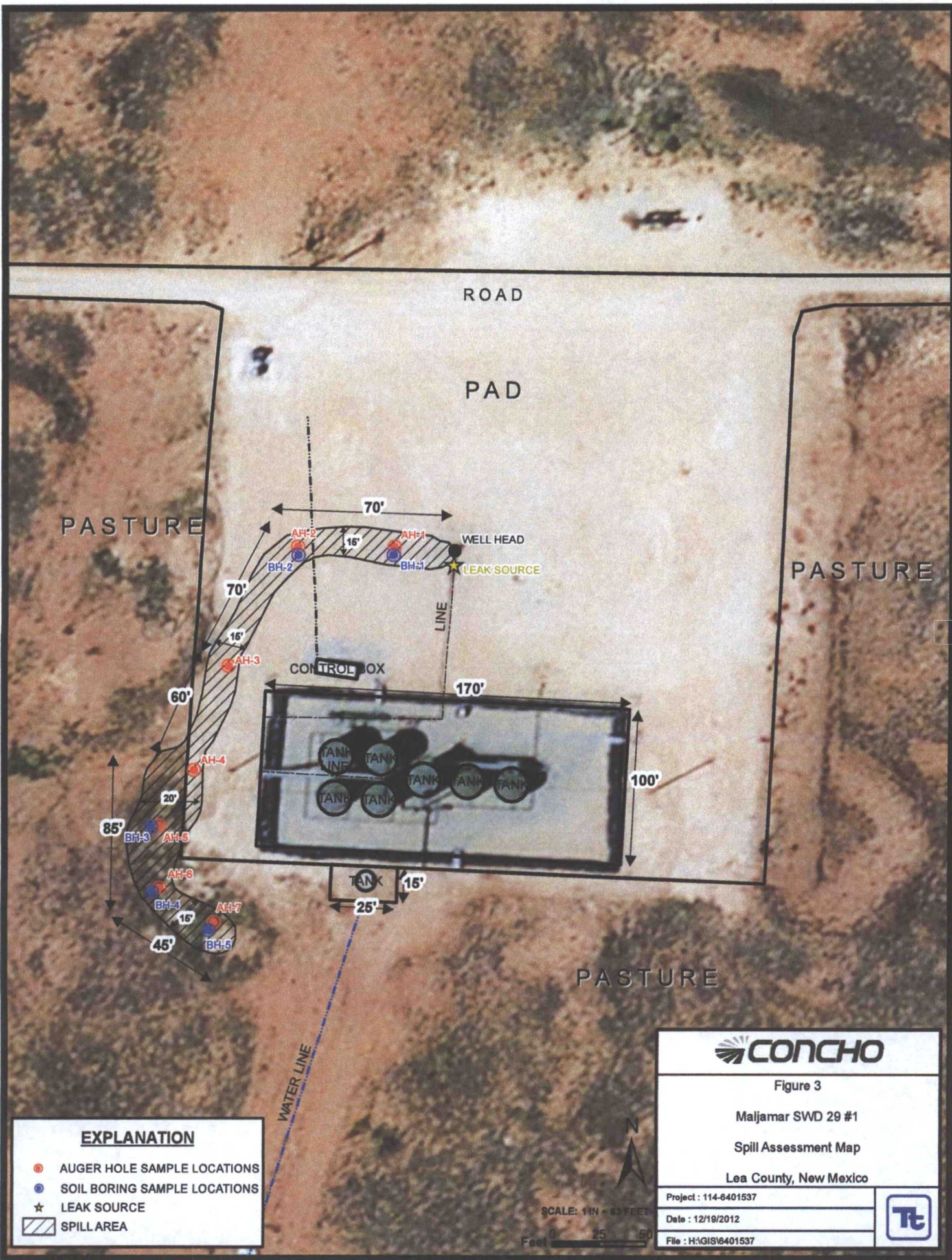
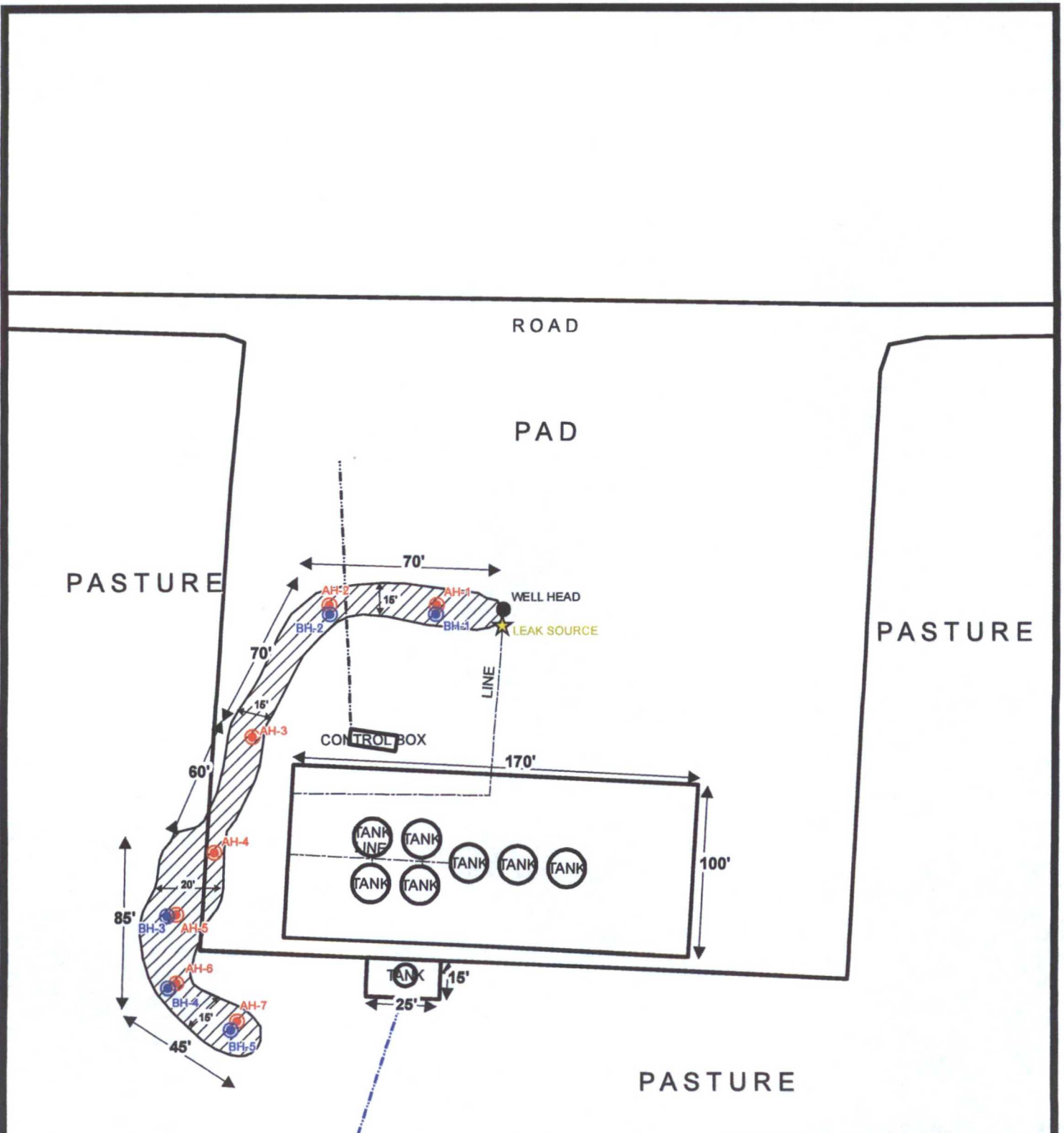


	
Figure 1	
Maljamar SWD 29 #1	
Overview Map	
Lea County, New Mexico	
Project : 114-6401537	
Date : 12/19/2012	
File : H:\GIS\6401537	





EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- SOIL BORING SAMPLE LOCATIONS
- ★ LEAK SOURCE
- ▨ SPILL AREA

CONCHO

Figure 3

Maljamar SWD 29 #1

Spill Assessment Map

Lea County, New Mexico

Project : 114-6401537

Date : 12/19/2012

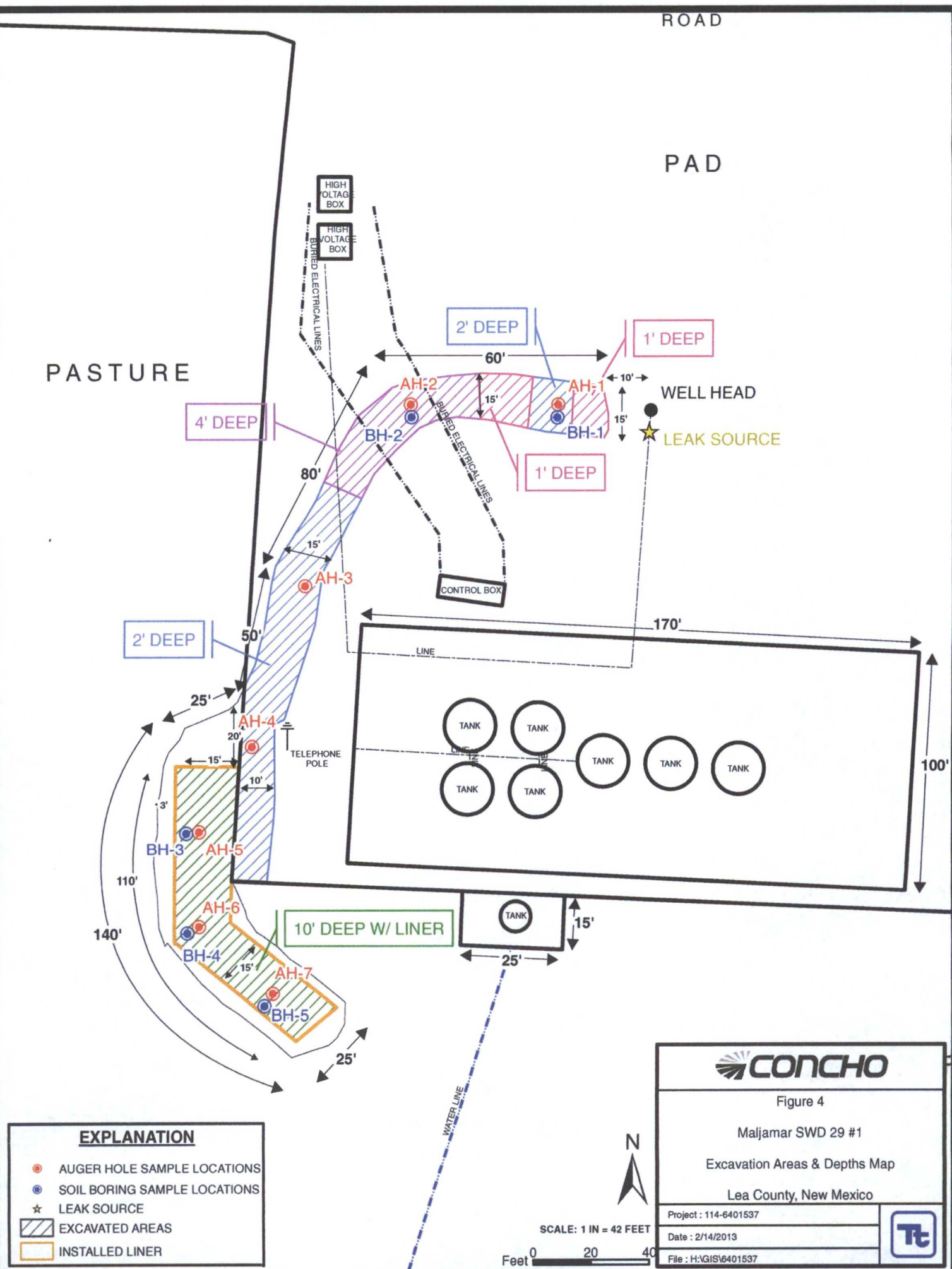
File : H:\GIS\6401537

Tt

N

SCALE: 1 IN = 63 FEET

Feet 0 25 50



Lea County, New Mexico

[illegible]

Table 1

[illegible]

Table 1
COG Operating LLC.
Maljamar Salt Water Disposal 29 #1
Lea County, New Mexico

[illegible]

Table 1
COG Operating LLC.
Maljamar Salt Water Disposal 29 #1
Lea County, New Mexico

[illegible]

Table 1
COG Operating LLC.
Maljamar Salt Water Disposal 29 #1
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total					
AH-7	10/30/2012	0-1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	798
	"	1-1.5		X	-	-	-	-	-	-	-	587
	"	2-2.5		X	-	-	-	-	-	-	-	2,770
	"	3-3.5		X	-	-	-	-	-	-	-	471
	"	4-4.5		X	-	-	-	-	-	-	-	2,840
	"	5-5.5		X	-	-	-	-	-	-	-	7,380
SB-5	11/30/2012	0-1		X	-	-	-	-	-	-	-	1,090
	"	2-3		X	-	-	-	-	-	-	-	1,030
	"	4-5		X	-	-	-	-	-	-	-	<20.0
	"	6-7		X	-	-	-	-	-	-	-	6,330
	"	9-10		X	-	-	-	-	-	-	-	3,770
	"	14-15	X		-	-	-	-	-	-	-	106
	"	19-20	X		-	-	-	-	-	-	-	139

(-) Not Analyzed

 excavated depths

 liner installed

COG Operating LLC
Maljamar SWD 29 #1
Lea County, New Mexico



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View West – Area of AH-1 and AH-2



View South – Area of AH-3 and AH-4

COG Operating LLC
Maljamar SWD 29 #1
Lea County, New Mexico



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View Southeast – View AH-5, AH-6 and AH-7



View South - Liner

COG Operating LLC
Maljamar SWD 29 #1
Lea County, New Mexico



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View Northwest - Liner



View Southwest - Backfill

COG Operating LLC
Maljamar SWD 29 #1
Lea County, New Mexico



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View South – Backfill and Rip



View West - Backfill

Water Well Data
Average Depth to Groundwater (ft)
COG - Maljamar SWD 29 #1
Lea County, New Mexico

16 South 31 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
290					

17 South 31 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
					271

18 South 31 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
					261

16 South 32 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
					260

17 South 32 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

18 South 32 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 33 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

17 South 33 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

18 South 33 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

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

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

178 Temporary monitor well installed - 178' dry well

34 NMOCD - Groundwater Data

123 Field water level

143 NMOCD Groundwater map well location

Summary Report

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

Report Date: December 12, 2012

Work Order: 12120313



Project Location: Lea Co., NM
Project Name: COG/Maljamar SWD 29 #1
Project Number: 114-6401537

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
315507	SB-1 0-1'	soil	2012-11-29	00:00	2012-12-03
315508	SB-1 2-3'	soil	2012-11-29	00:00	2012-12-03
315509	SB-1 4-5'	soil	2012-11-29	00:00	2012-12-03
315510	SB-1 6-7'	soil	2012-11-29	00:00	2012-12-03
315511	SB-1 9-10'	soil	2012-11-29	00:00	2012-12-03
315512	SB-1 14-15'	soil	2012-11-29	00:00	2012-12-03
315513	SB-1 19-20'	soil	2012-11-29	00:00	2012-12-03
315514	SB-2 0-1'	soil	2012-11-30	00:00	2012-12-03
315515	SB-2 2-3'	soil	2012-11-30	00:00	2012-12-03
315516	SB-2 4-5'	soil	2012-11-30	00:00	2012-12-03
315517	SB-2 6-7'	soil	2012-11-30	00:00	2012-12-03
315518	SB-2 9-10'	soil	2012-11-30	00:00	2012-12-03
315519	SB-2 14-15'	soil	2012-11-30	00:00	2012-12-03
315520	SB-2 19-20'	soil	2012-11-30	00:00	2012-12-03
315521	SB-3 0-1'	soil	2012-11-30	00:00	2012-12-03
315522	SB-3 2-3'	soil	2012-11-30	00:00	2012-12-03
315523	SB-3 4-5'	soil	2012-11-30	00:00	2012-12-03
315524	SB-3 6-7'	soil	2012-11-30	00:00	2012-12-03
315525	SB-3 9-10'	soil	2012-11-30	00:00	2012-12-03
315526	SB-3 14-15'	soil	2012-11-30	00:00	2012-12-03
315527	SB-3 19-20'	soil	2012-11-30	00:00	2012-12-03
315528	SB-4 0-1'	soil	2012-11-30	00:00	2012-12-03
315529	SB-4 2-3'	soil	2012-11-30	00:00	2012-12-03
315530	SB-4 4-5'	soil	2012-11-30	00:00	2012-12-03
315531	SB-4 6-7'	soil	2012-11-30	00:00	2012-12-03
315532	SB-4 9-10'	soil	2012-11-30	00:00	2012-12-03
315533	SB-4 14-15'	soil	2012-11-30	00:00	2012-12-03
315534	SB-4 19-20'	soil	2012-11-30	00:00	2012-12-03
315535	SB-5 0-1'	soil	2012-11-30	00:00	2012-12-03
315536	SB-5 2-3'	soil	2012-11-30	00:00	2012-12-03

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.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
315537	SB-5 4-5'	soil	2012-11-30	00:00	2012-12-03
315538	SB-5 6-7'	soil	2012-11-30	00:00	2012-12-03
315539	SB-5 9-10'	soil	2012-11-30	00:00	2012-12-03
315540	SB-5 14-15'	soil	2012-11-30	00:00	2012-12-03
315541	SB-5 19-20'	soil	2012-11-30	00:00	2012-12-03

Sample: 315507 - SB-1 0-1'

Param	Flag	Result	Units	RL
Chloride		22100	mg/Kg	4

Sample: 315508 - SB-1 2-3'

Param	Flag	Result	Units	RL
Chloride		14800	mg/Kg	4

Sample: 315509 - SB-1 4-5'

Param	Flag	Result	Units	RL
Chloride		2210	mg/Kg	4

Sample: 315510 - SB-1 6-7'

Param	Flag	Result	Units	RL
Chloride		1470	mg/Kg	4

Sample: 315511 - SB-1 9-10'

Param	Flag	Result	Units	RL
Chloride		2510	mg/Kg	4

Sample: 315512 - SB-1 14-15'

Param	Flag	Result	Units	RL
Chloride		310	mg/Kg	4

Sample: 315513 - SB-1 19-20'

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

Sample: 315514 - SB-2 0-1'

Param	Flag	Result	Units	RL
Chloride		5380	mg/Kg	4

Sample: 315515 - SB-2 2-3'

Param	Flag	Result	Units	RL
Chloride		4030	mg/Kg	4

Sample: 315516 - SB-2 4-5'

Param	Flag	Result	Units	RL
Chloride		2340	mg/Kg	4

Sample: 315517 - SB-2 6-7'

Param	Flag	Result	Units	RL
Chloride		2110	mg/Kg	4

Sample: 315518 - SB-2 9-10'

Param	Flag	Result	Units	RL
Chloride		722	mg/Kg	4

Sample: 315519 - SB-2 14-15'

Param	Flag	Result	Units	RL
Chloride		82.3	mg/Kg	4

Sample: 315520 - SB-2 19-20'

Param	Flag	Result	Units	RL
Chloride		82.3	mg/Kg	4

Sample: 315521 - SB-3 0-1'

Param	Flag	Result	Units	RL
Chloride		363	mg/Kg	4

Sample: 315522 - SB-3 2-3'

Param	Flag	Result	Units	RL
Chloride		5270	mg/Kg	4

Sample: 315523 - SB-3 4-5'

Param	Flag	Result	Units	RL
Chloride		2780	mg/Kg	4

Sample: 315524 - SB-3 6-7'

Param	Flag	Result	Units	RL
Chloride		5490	mg/Kg	4

Sample: 315525 - SB-3 9-10'

Param	Flag	Result	Units	RL
Chloride		6960	mg/Kg	4

Sample: 315526 - SB-3 14-15'

Param	Flag	Result	Units	RL
Chloride		293	mg/Kg	4

Sample: 315527 - SB-3 19-20'

Param	Flag	Result	Units	RL
Chloride		288	mg/Kg	4

Sample: 315528 - SB-4 0-1'

Param	Flag	Result	Units	RL
Chloride		254	mg/Kg	4

Sample: 315529 - SB-4 2-3'

Param	Flag	Result	Units	RL
Chloride		235	mg/Kg	4

Sample: 315530 - SB-4 4-5'

Param	Flag	Result	Units	RL
Chloride		466	mg/Kg	4

Sample: 315531 - SB-4 6-7'

Param	Flag	Result	Units	RL
Chloride		6160	mg/Kg	4

Sample: 315532 - SB-4 9-10'

Param	Flag	Result	Units	RL
Chloride		2870	mg/Kg	4

Sample: 315533 - SB-4 14-15'

Param	Flag	Result	Units	RL
Chloride		48.0	mg/Kg	4

Sample: 315534 - SB-4 19-20'

Param	Flag	Result	Units	RL
Chloride		298	mg/Kg	4

Sample: 315535 - SB-5 0-1'

Param	Flag	Result	Units	RL
Chloride		1090	mg/Kg	4

Sample: 315536 - SB-5 2-3'

Param	Flag	Result	Units	RL
Chloride		1030	mg/Kg	4

Sample: 315537 - SB-5 4-5'

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

Sample: 315538 - SB-5 6-7'

Param	Flag	Result	Units	RL
Chloride		6330	mg/Kg	4

Sample: 315539 - SB-5 9-10'

Param	Flag	Result	Units	RL
Chloride		3770	mg/Kg	4

Sample: 315540 - SB-5 14-15'

Param	Flag	Result	Units	RL
Chloride		106	mg/Kg	4

Sample: 315541 - SB-5 19-20'

Param	Flag	Result	Units	RL
Chloride		139	mg/Kg	4



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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: December 12, 2012

Work Order: 12120313



Project Location: Lea Co., NM
Project Name: COG/Maljamar SWD 29 #1
Project Number: 114-6401537

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
315507	SB-1 0-1'	soil	2012-11-29	00:00	2012-12-03
315508	SB-1 2-3'	soil	2012-11-29	00:00	2012-12-03
315509	SB-1 4-5'	soil	2012-11-29	00:00	2012-12-03
315510	SB-1 6-7'	soil	2012-11-29	00:00	2012-12-03
315511	SB-1 9-10'	soil	2012-11-29	00:00	2012-12-03
315512	SB-1 14-15'	soil	2012-11-29	00:00	2012-12-03
315513	SB-1 19-20'	soil	2012-11-29	00:00	2012-12-03
315514	SB-2 0-1'	soil	2012-11-30	00:00	2012-12-03
315515	SB-2 2-3'	soil	2012-11-30	00:00	2012-12-03
315516	SB-2 4-5'	soil	2012-11-30	00:00	2012-12-03
315517	SB-2 6-7'	soil	2012-11-30	00:00	2012-12-03
315518	SB-2 9-10'	soil	2012-11-30	00:00	2012-12-03
315519	SB-2 14-15'	soil	2012-11-30	00:00	2012-12-03
315520	SB-2 19-20'	soil	2012-11-30	00:00	2012-12-03
315521	SB-3 0-1'	soil	2012-11-30	00:00	2012-12-03
315522	SB-3 2-3'	soil	2012-11-30	00:00	2012-12-03
315523	SB-3 4-5'	soil	2012-11-30	00:00	2012-12-03
315524	SB-3 6-7'	soil	2012-11-30	00:00	2012-12-03

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
315525	SB-3 9-10'	soil	2012-11-30	00:00	2012-12-03
315526	SB-3 14-15'	soil	2012-11-30	00:00	2012-12-03
315527	SB-3 19-20'	soil	2012-11-30	00:00	2012-12-03
315528	SB-4 0-1'	soil	2012-11-30	00:00	2012-12-03
315529	SB-4 2-3'	soil	2012-11-30	00:00	2012-12-03
315530	SB-4 4-5'	soil	2012-11-30	00:00	2012-12-03
315531	SB-4 6-7'	soil	2012-11-30	00:00	2012-12-03
315532	SB-4 9-10'	soil	2012-11-30	00:00	2012-12-03
315533	SB-4 14-15'	soil	2012-11-30	00:00	2012-12-03
315534	SB-4 19-20'	soil	2012-11-30	00:00	2012-12-03
315535	SB-5 0-1'	soil	2012-11-30	00:00	2012-12-03
315536	SB-5 2-3'	soil	2012-11-30	00:00	2012-12-03
315537	SB-5 4-5'	soil	2012-11-30	00:00	2012-12-03
315538	SB-5 6-7'	soil	2012-11-30	00:00	2012-12-03
315539	SB-5 9-10'	soil	2012-11-30	00:00	2012-12-03
315540	SB-5 14-15'	soil	2012-11-30	00:00	2012-12-03
315541	SB-5 19-20'	soil	2012-11-30	00:00	2012-12-03

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



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

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Case Narrative

Samples for project COG/Maljamar SWD 29 #1 were received by TraceAnalysis, Inc. on 2012-12-03 and assigned to work order 12120313. Samples for work order 12120313 were received intact at a temperature of 19.9 C. Samples were received without ice.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	82300	2012-12-04 at 10:10	97234	2012-12-10 at 09:44
Chloride (Titration)	SM 4500-Cl B	82300	2012-12-04 at 10:10	97235	2012-12-10 at 09:45
Chloride (Titration)	SM 4500-Cl B	82300	2012-12-04 at 10:10	97329	2012-12-11 at 16:53
Chloride (Titration)	SM 4500-Cl B	82300	2012-12-04 at 10:10	97330	2012-12-11 at 16:57

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 12120313 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.

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114-6401537

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Analytical Report

Sample: 315507 - SB-1 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-10	Analyzed By:	AR
QC Batch:	97234	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			22100	mg/Kg	10	4.00

Sample: 315508 - SB-1 2-3'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-10	Analyzed By:	AR
QC Batch:	97234	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			14800	mg/Kg	10	4.00

Sample: 315509 - SB-1 4-5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-10	Analyzed By:	AR
QC Batch:	97234	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2210	mg/Kg	10	4.00

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Sample: 315510 - SB-1 6-7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-10	Analyzed By:	AR
QC Batch:	97234	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1470	mg/Kg	10	4.00

Sample: 315511 - SB-1 9-10'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-10	Analyzed By:	AR
QC Batch:	97234	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2510	mg/Kg	10	4.00

Sample: 315512 - SB-1 14-15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-10	Analyzed By:	AR
QC Batch:	97235	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			310	mg/Kg	5	4.00

Sample: 315513 - SB-1 19-20'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-10	Analyzed By:	AR
QC Batch:	97235	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

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

Sample: 315514 - SB-2 0-1'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-12-10	Analyzed By: AR
QC Batch: 97235	Sample Preparation: 2012-12-04	Prepared By: AR
Prep Batch: 82300		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			5380	mg/Kg	10	4.00

Sample: 315515 - SB-2 2-3'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-12-10	Analyzed By: AR
QC Batch: 97235	Sample Preparation: 2012-12-04	Prepared By: AR
Prep Batch: 82300		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			4030	mg/Kg	10	4.00

Sample: 315516 - SB-2 4-5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-12-10	Analyzed By: AR
QC Batch: 97235	Sample Preparation: 2012-12-04	Prepared By: AR
Prep Batch: 82300		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2340	mg/Kg	10	4.00

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Sample: 315517 - SB-2 6-7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-10	Analyzed By:	AR
QC Batch:	97235	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2110	mg/Kg	10	4.00

Sample: 315518 - SB-2 9-10'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-10	Analyzed By:	AR
QC Batch:	97235	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			722	mg/Kg	5	4.00

Sample: 315519 - SB-2 14-15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-10	Analyzed By:	AR
QC Batch:	97235	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			82.3	mg/Kg	5	4.00

Sample: 315520 - SB-2 19-20'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-10	Analyzed By:	AR
QC Batch:	97235	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			82.3	mg/Kg	5	4.00

Sample: 315521 - SB-3 0-1'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-12-10	Analyzed By: AR
QC Batch: 97235	Sample Preparation: 2012-12-04	Prepared By: AR
Prep Batch: 82300		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			363	mg/Kg	5	4.00

Sample: 315522 - SB-3 2-3'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-12-11	Analyzed By: AR
QC Batch: 97329	Sample Preparation: 2012-12-04	Prepared By: AR
Prep Batch: 82300		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			5270	mg/Kg	10	4.00

Sample: 315523 - SB-3 4-5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-12-11	Analyzed By: AR
QC Batch: 97329	Sample Preparation: 2012-12-04	Prepared By: AR
Prep Batch: 82300		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2780	mg/Kg	10	4.00

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Sample: 315524 - SB-3 6-7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97329	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			5490	mg/Kg	10	4.00

Sample: 315525 - SB-3 9-10'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97329	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			6960	mg/Kg	10	4.00

Sample: 315526 - SB-3 14-15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97329	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			293	mg/Kg	5	4.00

Sample: 315527 - SB-3 19-20'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97329	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			288	mg/Kg	5	4.00

Sample: 315528 - SB-4 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 97329
Prep Batch: 82300

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-12-11
Sample Preparation: 2012-12-04

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			254	mg/Kg	5	4.00

Sample: 315529 - SB-4 2-3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 97329
Prep Batch: 82300

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-12-11
Sample Preparation: 2012-12-04

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			235	mg/Kg	5	4.00

Sample: 315530 - SB-4 4-5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 97329
Prep Batch: 82300

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-12-11
Sample Preparation: 2012-12-04

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			466	mg/Kg	5	4.00

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Sample: 315531 - SB-4 6-7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97329	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			6160	mg/Kg	5	4.00

Sample: 315532 - SB-4 9-10'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97330	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2870	mg/Kg	10	4.00

Sample: 315533 - SB-4 14-15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97330	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			48.0	mg/Kg	5	4.00

Sample: 315534 - SB-4 19-20'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97330	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			298	mg/Kg	5	4.00

Sample: 315535 - SB-5 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97330	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1090	mg/Kg	10	4.00

Sample: 315536 - SB-5 2-3'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97330	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1030	mg/Kg	10	4.00

Sample: 315537 - SB-5 4-5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97330	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

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

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Sample: 315538 - SB-5 6-7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97330	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			6330	mg/Kg	10	4.00

Sample: 315539 - SB-5 9-10'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97330	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			3770	mg/Kg	10	4.00

Sample: 315540 - SB-5 14-15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97330	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			106	mg/Kg	5	4.00

Sample: 315541 - SB-5 19-20'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-12-11	Analyzed By:	AR
QC Batch:	97330	Sample Preparation:	2012-12-04	Prepared By:	AR
Prep Batch:	82300				

Report Date: December 12, 2012
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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			139	mg/Kg	5	4.00

Report Date: December 12, 2012
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Method Blanks

Method Blank (1) QC Batch: 97234

QC Batch: 97234
Prep Batch: 82300

Date Analyzed: 2012-12-10
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 97235

QC Batch: 97235
Prep Batch: 82300

Date Analyzed: 2012-12-10
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 97329

QC Batch: 97329
Prep Batch: 82300

Date Analyzed: 2012-12-11
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 97330

QC Batch: 97330
Prep Batch: 82300

Date Analyzed: 2012-12-11
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

Report Date: December 12, 2012
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Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Report Date: December 12, 2012
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COG/Maljamar SWD 29 #1

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 97234
Prep Batch: 82300

Date Analyzed: 2012-12-10
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2420	mg/Kg	1	2500	<3.85	97	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2510	mg/Kg	1	2500	<3.85	100	85 - 115	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 97235
Prep Batch: 82300

Date Analyzed: 2012-12-10
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2590	mg/Kg	1	2500	<3.85	104	85 - 115	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 97329
Prep Batch: 82300

Date Analyzed: 2012-12-11
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

Report Date: December 12, 2012
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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2460	mg/Kg	1	2500	<3.85	98	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2620	mg/Kg	1	2500	<3.85	105	85 - 115	6	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 97330
Prep Batch: 82300

Date Analyzed: 2012-12-11
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2680	mg/Kg	1	2500	<3.85	107	85 - 115	0	20

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

Matrix Spike (MS-1) Spiked Sample: 315511

QC Batch: 97234
Prep Batch: 82300

Date Analyzed: 2012-12-10
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			5110	mg/Kg	10	2500	2510	104	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			5370	mg/Kg	10	2500	2510	114	78.9 - 121	5	20

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

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Matrix Spike (MS-1) Spiked Sample: 315521

QC Batch: 97235
Prep Batch: 82300

Date Analyzed: 2012-12-10
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2840	mg/Kg	5	2500	363	99	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2940	mg/Kg	5	2500	363	103	78.9 - 121	4	20

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

Matrix Spike (MS-1) Spiked Sample: 315531

QC Batch: 97329
Prep Batch: 82300

Date Analyzed: 2012-12-11
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			8640	mg/Kg	5	2500	6160	99	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			8500	mg/Kg	5	2500	6160	94	78.9 - 121	2	20

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

Matrix Spike (MS-1) Spiked Sample: 315541

QC Batch: 97330
Prep Batch: 82300

Date Analyzed: 2012-12-11
QC Preparation: 2012-12-04

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2660	mg/Kg	5	2500	139	101	78.9 - 121

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2840	mg/Kg	5	2500	139	108	78.9 - 121	6	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 97234

Date Analyzed: 2012-12-10

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-12-10

Standard (CCV-2)

QC Batch: 97234

Date Analyzed: 2012-12-10

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.6	100	85 - 115	2012-12-10

Standard (CCV-1)

QC Batch: 97235

Date Analyzed: 2012-12-10

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-12-10

Standard (CCV-2)

QC Batch: 97235

Date Analyzed: 2012-12-10

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.1	99	85 - 115	2012-12-10

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114-6401537

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Standard (CCV-1)

QC Batch: 97329

Date Analyzed: 2012-12-11

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.0	98	85 - 115	2012-12-11

Standard (CCV-2)

QC Batch: 97329

Date Analyzed: 2012-12-11

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	102	102	85 - 115	2012-12-11

Standard (CCV-1)

QC Batch: 97330

Date Analyzed: 2012-12-11

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	102	102	85 - 115	2012-12-11

Standard (CCV-2)

QC Batch: 97330

Date Analyzed: 2012-12-11

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.0	98	85 - 115	2012-12-11

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

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 than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

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114-6401537

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

Analysis Request of Chain of Custody Record

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OF: 4

ANALYSIS REQUEST

(Circle or Specify Method No.)



TETRA TECH

**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946**

SITE MANAGER:

Ike Tavaraz

PROJECT NAME:

Malignance SWD 29 #1

Lea Co NM
SAMPLE IDENTIFICATION

PRESERVATIVE METHOD	
	HCL
	HNO3
	ICE
	NONE
FILTERED (Y/N)	
NUMBER OF CONTAINERS	

315507	11/29		S	K	SB-1	0-1'
508						2-3'
509						4-5'
510						6-7'
511						9-10'
512						11-15'
513						19-20'
514	11/30				SB-2	0-1'
515						2-3'
516						4-5'

RELINQUISHED BY: (Signature)	Date: 11-3-12	RECEIVED BY: (Signature)	Date: 11-3-12
	Time: 1037		Time: 10:37
RELINQUISHED BY: (Signature)	Date: _____	RECEIVED BY: (Signature)	Date: _____
	Time: _____		Time: _____
RELINQUISHED BY: (Signature)	Date: _____	RECEIVED BY: (Signature)	Date: _____
	Time: _____		Time: _____
RECEIVING LABORATORY: <u>Trace</u>	RECEIVED BY: (Signature)		
ADDRESS: _____			
CITY: <u>Midland</u> STATE: <u>TX</u> ZIP: _____			
CONTACT: _____ PHONE: _____	DATE: _____ TIME: _____		

SAMPLE CONDITION WHEN RECEIVED: 1.9	REMARKS: : Muland - all AT
--	-------------------------------

[illegible]

REMARKS: 00

REMARKS: Muland - all A/H

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12/20313

Analysis Request of Custody Record

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ANALYSIS REQUEST
(Circle or Specify Method No.)



TETRA TECH

1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME:		SITE MANAGER:		PROJECT NAME:		PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HNO3		ICE		NONE	
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION													
517	11/30					517	5B-2	6-7'	1										
518						518		9-10'											
519						519		14-15'											
520						520		19-20'											
521						521	5B-3	0-1'											
522						522		2-3'											
523						523		4-5'											
524						524		6-7'											
525						525		9-10'											
526						526		14-15'											
RELINQUISHED BY: (Signature)		Date: 12-3-12		Time: 10:37		RECEIVED BY: (Signature)		Date: 12/3/12		Time: 10:37		SAMPLED BY: (Print & Initial)		Date: 12-30-12		Time:			
RELINQUISHED BY: (Signature)		Date:		Time:		RECEIVED BY: (Signature)		Date:		Time:		SAMPLE SHIPPED BY: (Circle)		AIRBILL #:		OTHER:			
RELINQUISHED BY: (Signature)		Date:		Time:		RECEIVED BY: (Signature)		Date:		Time:		HAND DELIVERED		BUS		UPS			
RECEIVING LABORATORY:		Address:		City:		State:		ZIP:		DATE:		TIME:		TETRA TECH CONTACT PERSON:		Results by:			
1990		Midland		TX		PHONE:		REMARKS:		AH									
SAMPLE CONDITION WHEN RECEIVED:		1990		Midland		TX		PHONE:		REMARKS:									
RUSH Charges Authorized:		Yes		No															

Analysis Request of Chain of Custody Record

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OF:

ANALYSIS REQUEST

(Circle or Specify Method No.)



TETRA TECH

1910 N. Big Spring St.

Midland, Texas 79705

(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: <u>COC</u>						SITE MANAGER: <u>Ike Tawater</u>							
PROJECT NO.: <u>114-6201537</u>			PROJECT NAME: <u>Mallam SWD 29 #1</u>										
LAB I.D. NUMBER	DATE <u>2012</u>	TIME <u>11/20</u>	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION <u>Lea Co NM</u>	NUMBER OF CONTAINERS <u>FILTERED (Y/N)</u>	PRESERVATIVE METHOD					
								HCL	HNO3	ICE	NONE		
527					X	SB-3 19-20'	1						
528						SB-4 0-1'							
529						2-3'							
530						4-5'							
531						6-7'							
532						9-10'							
533						14-15'							
534						19-20'							
535						SB-5 0-1'							
536						23'							
RELINQUISHED BY: (Signature) <u>[Signature]</u>						RECEIVED BY: (Signature) <u>[Signature]</u>							
Date: <u>12-3-12</u> Time: <u>10:37</u>						Date: _____ Time: _____							
RELINQUISHED BY: (Signature) _____						RECEIVED BY: (Signature) _____							
Date: _____ Time: _____						Date: _____ Time: _____							
RELINQUISHED BY: (Signature) _____						RECEIVED BY: (Signature) _____							
Date: _____ Time: _____						Date: _____ Time: _____							
RECEIVING LABORATORY: <u>Trae</u>						RECEIVED BY: (Signature) _____							
ADDRESS: <u>Midland</u>						DATE: _____							
CITY: <u>STATE:</u>						PHONE: _____							
CONTACT: _____						ZIP: _____							

PAH

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12120313

Analysis Request of Chain of Custody Record

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ANALYSIS REQUEST
(Circle or Specify Method No.)**TETRA TECH**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COT		SITE MANAGER: Ike Tavares		PROJECT NAME: Mojave SWD 29 #1		PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HNO3		ICE		NONE	
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMR	GRAB	SAMPLE IDENTIFICATION													
537	11/30					5 X	SB-5	4-5'	1										
538								6-7'											
539								9-10'											
540								14-15'											
541								19-20'											

RELINQUISHED BY: (Signature)		Date:	Time:	RECEIVED BY: (Signature)		Date:	Time:
[Signature]		11-3-12	10:57	[Signature]		12/3/12	10:57

RELINQUISHED BY: (Signature)		Date:	Time:	RECEIVED BY: (Signature)		Date:	Time:
[Signature]				[Signature]			

RELINQUISHED BY: (Signature)		Date:	Time:	RECEIVED BY: (Signature)		Date:	Time:
[Signature]				[Signature]			

RECEIVING LABORATORY:		Address:	City:	State:	Zip:	Phone:	Date:	Time:
[Signature]		Midland	TX					

SAMPLE CONDITION WHEN RECEIVED:		REMARKS:
[Signature]		XX

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Summary Report

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

Report Date: November 8, 2012

Work Order: 12110209



Project Location: Lea Co., NM
Project Name: COG/Maljamar SWD 29 #1
Project Number: 114-6401537

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
313240	AH 1 0-1'	soil	2012-10-30	00:00	2012-11-02
313241	AH 1 1-1.5'	soil	2012-10-30	00:00	2012-11-02
313242	AH 1 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313243	AH 1 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313244	AH 1 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313245	AH 1 5-5.5'	soil	2012-10-30	00:00	2012-11-02
313246	AH 1 6-6.5'	soil	2012-10-30	00:00	2012-11-02
313247	AH 1 7-7.5'	soil	2012-10-30	00:00	2012-11-02
313248	AH 1 8-8.5'	soil	2012-10-30	00:00	2012-11-02
313249	AH 1 9-9.5'	soil	2012-10-30	00:00	2012-11-02
313250	AH 2 0-6 in.	soil	2012-10-30	00:00	2012-11-02
313251	AH 3 0-1'	soil	2012-10-30	00:00	2012-11-02
313252	AH 3 1-1.5'	soil	2012-10-30	00:00	2012-11-02
313253	AH 3 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313254	AH 3 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313255	AH 3 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313256	AH 4 0-1'	soil	2012-10-30	00:00	2012-11-02
313257	AH 4 1-1.5'	soil	2012-10-30	00:00	2012-11-02
313258	AH 4 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313259	AH 4 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313260	AH 4 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313261	AH 5 0-1'	soil	2012-10-30	00:00	2012-11-02
313262	AH 5 1-1.5'	soil	2012-10-30	00:00	2012-11-02
313263	AH 5 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313264	AH 5 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313265	AH 5 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313266	AH 5 5-5.5'	soil	2012-10-30	00:00	2012-11-02
313267	AH 5 6-6.5'	soil	2012-10-30	00:00	2012-11-02
313268	AH 5 7-7.5'	soil	2012-10-30	00:00	2012-11-02
313269	AH 5 8-8.5'	soil	2012-10-30	00:00	2012-11-02

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
313270	AH 6 0-1'	soil	2012-10-30	00:00	2012-11-02
313271	AH 6 1-1.5'	soil	2012-10-30	00:00	2012-11-02
313272	AH 6 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313273	AH 6 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313274	AH 6 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313275	AH 6 5-5.5'	soil	2012-10-30	00:00	2012-11-02
313276	AH 6 6-6.5'	soil	2012-10-30	00:00	2012-11-02
313277	AH 6 7-7.5'	soil	2012-10-30	00:00	2012-11-02
313278	AH 7 0-1'	soil	2012-10-30	00:00	2012-11-02
313279	AH 7 1-1.5'	soil	2012-10-30	00:00	2012-11-02
313280	AH 7 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313281	AH 7 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313282	AH 7 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313283	AH 7 5-5.5'	soil	2012-10-30	00:00	2012-11-02

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
313240 - AH 1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
313250 - AH 2 0-6 in.	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
313251 - AH 3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
313256 - AH 4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
313261 - AH 5 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
313270 - AH 6 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	107	<4.00
313278 - AH 7 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00

Sample: 313240 - AH 1 0-1'

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4

Sample: 313241 - AH 1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1680	mg/Kg	4

Sample: 313242 - AH 1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1370	mg/Kg	4

Sample: 313243 - AH 1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		1730	mg/Kg	4

Sample: 313244 - AH 1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		882	mg/Kg	4

Sample: 313245 - AH 1 5-5.5'

Param	Flag	Result	Units	RL
Chloride		1550	mg/Kg	4

Sample: 313246 - AH 1 6-6.5'

Param	Flag	Result	Units	RL
Chloride		1300	mg/Kg	4

Sample: 313247 - AH 1 7-7.5'

Param	Flag	Result	Units	RL
Chloride		157	mg/Kg	4

Sample: 313248 - AH 1 8-8.5'

Param	Flag	Result	Units	RL
Chloride		1910	mg/Kg	4

Sample: 313249 - AH 1 9-9.5'

Param	Flag	Result	Units	RL
Chloride		1780	mg/Kg	4

Sample: 313250 - AH 2 0-6 in.

Param	Flag	Result	Units	RL
Chloride		2230	mg/Kg	4

Sample: 313251 - AH 3 0-1'

Param	Flag	Result	Units	RL
Chloride		4750	mg/Kg	4

Sample: 313252 - AH 3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		24.6	mg/Kg	4

Sample: 313253 - AH 3 2-2.5'

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

Sample: 313254 - AH 3 3-3.5'

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

Sample: 313255 - AH 3 4-4.5'

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

Sample: 313256 - AH 4 0-1'

Param	Flag	Result	Units	RL
Chloride		5880	mg/Kg	4

Sample: 313257 - AH 4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		3450	mg/Kg	4

Sample: 313258 - AH 4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		134	mg/Kg	4

Sample: 313259 - AH 4 3-3.5'

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

Sample: 313260 - AH 4 4-4.5'

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

Sample: 313261 - AH 5 0-1'

Param	Flag	Result	Units	RL
Chloride		1820	mg/Kg	4

Sample: 313262 - AH 5 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1260	mg/Kg	4

Sample: 313263 - AH 5 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1300	mg/Kg	4

Sample: 313264 - AH 5 3-3.5'

Param	Flag	Result	Units	RL
Chloride		1080	mg/Kg	4

Sample: 313265 - AH 5 4-4.5'

Param	Flag	Result	Units	RL
Chloride		1100	mg/Kg	4

Sample: 313266 - AH 5 5-5.5'

Param	Flag	Result	Units	RL
Chloride		1530	mg/Kg	4

Sample: 313267 - AH 5 6-6.5'

Param	Flag	Result	Units	RL
Chloride		6160	mg/Kg	4

Sample: 313268 - AH 5 7-7.5'

Param	Flag	Result	Units	RL
Chloride		5890	mg/Kg	4

Sample: 313269 - AH 5 8-8.5'

Param	Flag	Result	Units	RL
Chloride		5420	mg/Kg	4

Sample: 313270 - AH 6 0-1'

Param	Flag	Result	Units	RL
Chloride		176	mg/Kg	4

Sample: 313271 - AH 6 1-1.5'

Param	Flag	Result	Units	RL
Chloride		117	mg/Kg	4

Sample: 313272 - AH 6 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1290	mg/Kg	4

Sample: 313273 - AH 6 3-3.5'

Param	Flag	Result	Units	RL
Chloride		357	mg/Kg	4

Sample: 313274 - AH 6 4-4.5'

Param	Flag	Result	Units	RL
Chloride		2020	mg/Kg	4

Sample: 313275 - AH 6 5-5.5'

Param	Flag	Result	Units	RL
Chloride		7510	mg/Kg	4

Sample: 313276 - AH 6 6-6.5'

Param	Flag	Result	Units	RL
Chloride		8820	mg/Kg	4

Sample: 313277 - AH 6 7-7.5'

Param	Flag	Result	Units	RL
Chloride		18600	mg/Kg	4

Sample: 313278 - AH 7 0-1'

Param	Flag	Result	Units	RL
Chloride		798	mg/Kg	4

Sample: 313279 - AH 7 1-1.5'

Param	Flag	Result	Units	RL
Chloride		587	mg/Kg	4

Sample: 313280 - AH 7 2-2.5'

Param	Flag	Result	Units	RL
Chloride		2770	mg/Kg	4

Sample: 313281 - AH 7 3-3.5'

Param	Flag	Result	Units	RL
Chloride		471	mg/Kg	4

Sample: 313282 - AH 7 4-4.5'

Param	Flag	Result	Units	RL
Chloride		2840	mg/Kg	4

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Sample: 313283 - AH 7 5-5.5'

Param	Flag	Result	Units	RL
Chloride		7380	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail lab@traceanalysis.com WEB www.traceanalysis.com

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: November 8, 2012

Work Order: 12110209



Project Location: Lea Co., NM
Project Name: COG/Maljamar SWD 29 #1
Project Number: 114-6401537

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
313240	AH 1 0-1'	soil	2012-10-30	00:00	2012-11-02
313241	AH 1 1-1.5'	soil	2012-10-30	00:00	2012-11-02
313242	AH 1 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313243	AH 1 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313244	AH 1 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313245	AH 1 5-5.5'	soil	2012-10-30	00:00	2012-11-02
313246	AH 1 6-6.5'	soil	2012-10-30	00:00	2012-11-02
313247	AH 1 7-7.5'	soil	2012-10-30	00:00	2012-11-02
313248	AH 1 8-8.5'	soil	2012-10-30	00:00	2012-11-02
313249	AH 1 9-9.5'	soil	2012-10-30	00:00	2012-11-02
313250	AH 2 0-6 in.	soil	2012-10-30	00:00	2012-11-02
313251	AH 3 0-1'	soil	2012-10-30	00:00	2012-11-02
313252	AH 3 1-1.5'	soil	2012-10-30	00:00	2012-11-02
313253	AH 3 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313254	AH 3 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313255	AH 3 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313256	AH 4 0-1'	soil	2012-10-30	00:00	2012-11-02
313257	AH 4 1-1.5'	soil	2012-10-30	00:00	2012-11-02

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
313258	AH 4 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313259	AH 4 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313260	AH 4 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313261	AH 5 0-1'	soil	2012-10-30	00:00	2012-11-02
313262	AH 5 1-1.5'	soil	2012-10-30	00:00	2012-11-02
313263	AH 5 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313264	AH 5 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313265	AH 5 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313266	AH 5 5-5.5'	soil	2012-10-30	00:00	2012-11-02
313267	AH 5 6-6.5'	soil	2012-10-30	00:00	2012-11-02
313268	AH 5 7-7.5'	soil	2012-10-30	00:00	2012-11-02
313269	AH 5 8-8.5'	soil	2012-10-30	00:00	2012-11-02
313270	AH 6 0-1'	soil	2012-10-30	00:00	2012-11-02
313271	AH 6 1-1.5'	soil	2012-10-30	00:00	2012-11-02
313272	AH 6 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313273	AH 6 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313274	AH 6 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313275	AH 6 5-5.5'	soil	2012-10-30	00:00	2012-11-02
313276	AH 6 6-6.5'	soil	2012-10-30	00:00	2012-11-02
313277	AH 6 7-7.5'	soil	2012-10-30	00:00	2012-11-02
313278	AH 7 0-1'	soil	2012-10-30	00:00	2012-11-02
313279	AH 7 1-1.5'	soil	2012-10-30	00:00	2012-11-02
313280	AH 7 2-2.5'	soil	2012-10-30	00:00	2012-11-02
313281	AH 7 3-3.5'	soil	2012-10-30	00:00	2012-11-02
313282	AH 7 4-4.5'	soil	2012-10-30	00:00	2012-11-02
313283	AH 7 5-5.5'	soil	2012-10-30	00:00	2012-11-02

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



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

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Sample 313261 (AH 5 0-1')	18
Sample 313262 (AH 5 1-1.5')	19
Sample 313263 (AH 5 2-2.5')	19
Sample 313264 (AH 5 3-3.5')	20
Sample 313265 (AH 5 4-4.5')	20
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Sample 313268 (AH 5 7-7.5')	21
Sample 313269 (AH 5 8-8.5')	21
Sample 313270 (AH 6 0-1')	21
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Sample 313272 (AH 6 2-2.5')	23
Sample 313273 (AH 6 3-3.5')	24
Sample 313274 (AH 6 4-4.5')	24
Sample 313275 (AH 6 5-5.5')	24
Sample 313276 (AH 6 6-6.5')	24
Sample 313277 (AH 6 7-7.5')	25
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Case Narrative

Samples for project COG/Maljamar SWD 29 #1 were received by TraceAnalysis, Inc. on 2012-11-02 and assigned to work order 12110209. Samples for work order 12110209 were received intact at a temperature of 1.4 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	81655	2012-11-06 at 13:40	96348	2012-11-06 at 13:40
Chloride (Titration)	SM 4500-Cl B	81654	2012-11-06 at 12:38	96376	2012-11-07 at 11:43
Chloride (Titration)	SM 4500-Cl B	81654	2012-11-06 at 12:38	96377	2012-11-07 at 11:43
Chloride (Titration)	SM 4500-Cl B	81654	2012-11-06 at 12:38	96378	2012-11-07 at 11:44
Chloride (Titration)	SM 4500-Cl B	81654	2012-11-06 at 12:38	96379	2012-11-07 at 11:45
Chloride (Titration)	SM 4500-Cl B	81654	2012-11-06 at 12:38	96380	2012-11-07 at 11:46
TPH DRO - NEW	S 8015 D	81632	2012-11-05 at 08:00	96324	2012-11-06 at 08:27
TPH GRO	S 8015 D	81655	2012-11-06 at 13:40	96350	2012-11-06 at 13:40

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 12110209 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: November 8, 2012
114-6401537

Work Order: 12110209
COG/Maljamar SWD 29 #1

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Lea Co., NM

Analytical Report

Sample: 313240 - AH 1 0-1'

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 96348

Prep Batch: 81655

Analytical Method: S 8021B

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-06

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	1	<0.0200	mg/Kg	1	0.0200
Xylene	u	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	73.1 - 120
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	71.5 - 120

Sample: 313240 - AH 1 0-1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96376

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			11600	mg/Kg	10	4.00

Sample: 313240 - AH 1 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 96324

Prep Batch: 81632

Analytical Method: S 8015 D

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-05

Prep Method: N/A

Analyzed By: CW

Prepared By: CW

Report Date: November 8, 2012
114-6401537

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	jb	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	55.1 - 135.7

Sample: 313240 - AH 1 0-1'

Laboratory: Lubbock

Analysis: TPH GRO

QC Batch: 96350

Prep Batch: 81655

Analytical Method: S 8015 D

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-06

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	u	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	74.4 - 120
4-Bromofluorobenzene (4-BFB)			2.01	mg/Kg	1	2.00	100	74 - 120

Sample: 313241 - AH 1 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96376

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1680	mg/Kg	10	4.00

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Sample: 313242 - AH 1 2-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96376	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1370	mg/Kg	10	4.00

Sample: 313243 - AH 1 3-3.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96376	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1730	mg/Kg	10	4.00

Sample: 313244 - AH 1 4-4.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96376	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			882	mg/Kg	5	4.00

Sample: 313245 - AH 1 5-5.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96377	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1550	mg/Kg	10	4.00

Sample: 313246 - AH 1 6-6.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-11-07	Analyzed By: AR
QC Batch: 96377	Sample Preparation: 2012-11-06	Prepared By: AR
Prep Batch: 81654		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1300	mg/Kg	10	4.00

Sample: 313247 - AH 1 7-7.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-11-07	Analyzed By: AR
QC Batch: 96377	Sample Preparation: 2012-11-06	Prepared By: AR
Prep Batch: 81654		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			157	mg/Kg	5	4.00

Sample: 313248 - AH 1 8-8.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-11-07	Analyzed By: AR
QC Batch: 96377	Sample Preparation: 2012-11-06	Prepared By: AR
Prep Batch: 81654		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1910	mg/Kg	10	4.00

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Sample: 313249 - AH 1 9-9.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96377

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1780	mg/Kg	10	4.00

Sample: 313250 - AH 2 0-6 in.

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 96348

Prep Batch: 81655

Analytical Method: S 8021B

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-06

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	1	<0.0200	mg/Kg	1	0.0200
Xylene	u	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.75	mg/Kg	1	2.00	88	73.1 - 120
4-Bromofluorobenzene (4-BFB)			2.16	mg/Kg	1	2.00	108	71.5 - 120

Sample: 313250 - AH 2 0-6 in.

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96377

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2230	mg/Kg	10	4.00

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Sample: 313250 - AH 2 0-6 in.

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 96324

Prep Batch: 81632

Analytical Method: S 8015 D

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-05

Prep Method: N/A

Analyzed By: CW

Prepared By: CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	jb	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			116	mg/Kg	1	100	116	55.1 - 135.7

Sample: 313250 - AH 2 0-6 in.

Laboratory: Lubbock

Analysis: TPH GRO

QC Batch: 96350

Prep Batch: 81655

Analytical Method: S 8015 D

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-06

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	u	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	74.4 - 120
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	74 - 120

Sample: 313251 - AH 3 0-1'

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 96348

Prep Batch: 81655

Analytical Method: S 8021B

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-06

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	1	<0.0200	mg/Kg	1	0.0200
Xylene	u	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	73.1 - 120
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	71.5 - 120

Sample: 313251 - AH 3 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 96377
Prep Batch: 81654

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-11-07
Sample Preparation: 2012-11-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			4750	mg/Kg	10	4.00

Sample: 313251 - AH 3 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 96324
Prep Batch: 81632

Analytical Method: S 8015 D
Date Analyzed: 2012-11-06
Sample Preparation: 2012-11-05

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	jb	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			110	mg/Kg	1	100	110	55.1 - 135.7

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Sample: 313251 - AH 3 0-1'

Laboratory: Lubbock

Analysis: TPH GRO

QC Batch: 96350

Prep Batch: 81655

Analytical Method: S 8015 D

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-06

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	u	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.81	mg/Kg	1	2.00	90	74.4 - 120
4-Bromofluorobenzene (4-BFB)			1.96	mg/Kg	1	2.00	98	74 - 120

Sample: 313252 - AH 3 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96377

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			24.6	mg/Kg	5	4.00

Sample: 313253 - AH 3 2-2.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96377

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

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Sample: 313254 - AH 3 3-3.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 96377 Date Analyzed: 2012-11-07 Analyzed By: AR
Prep Batch: 81654 Sample Preparation: 2012-11-06 Prepared By: AR

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

Sample: 313255 - AH 3 4-4.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 96378 Date Analyzed: 2012-11-07 Analyzed By: AR
Prep Batch: 81654 Sample Preparation: 2012-11-06 Prepared By: AR

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

Sample: 313256 - AH 4 0-1'

Laboratory: Lubbock
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 96348 Date Analyzed: 2012-11-06 Analyzed By: MT
Prep Batch: 81655 Sample Preparation: 2012-11-06 Prepared By: MT

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	1	<0.0200	mg/Kg	1	0.0200
Xylene	u	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	73.1 - 120
4-Bromofluorobenzene (4-BFB)			2.19	mg/Kg	1	2.00	110	71.5 - 120

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Sample: 313256 - AH 4 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 96378
Prep Batch: 81654

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-11-07
Sample Preparation: 2012-11-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			5880	mg/Kg	10	4.00

Sample: 313256 - AH 4 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 96324
Prep Batch: 81632

Analytical Method: S 8015 D
Date Analyzed: 2012-11-06
Sample Preparation: 2012-11-05

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	jb	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	55.1 - 135.7

Sample: 313256 - AH 4 0-1'

Laboratory: Lubbock
Analysis: TPH GRO
QC Batch: 96350
Prep Batch: 81655

Analytical Method: S 8015 D
Date Analyzed: 2012-11-06
Sample Preparation: 2012-11-06

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

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	u	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.83	mg/Kg	1	2.00	92	74.4 - 120
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	74 - 120

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Sample: 313257 - AH 4 1-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96378	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			3450	mg/Kg	10	4.00

Sample: 313258 - AH 4 2-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96378	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			134	mg/Kg	5	4.00

Sample: 313259 - AH 4 3-3.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96378	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

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

Sample: 313260 - AH 4 4-4.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96378	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

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

Sample: 313261 - AH 5 0-1'

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 96348

Prep Batch: 81655

Analytical Method: S 8021B

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-06

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	1	<0.0200	mg/Kg	1	0.0200
Xylene	u	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.62	mg/Kg	1	2.00	81	73.1 - 120
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	71.5 - 120

Sample: 313261 - AH 5 0-1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96378

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1820	mg/Kg	10	4.00

Sample: 313261 - AH 5 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 96324

Prep Batch: 81632

Analytical Method: S 8015 D

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-05

Prep Method: N/A

Analyzed By: CW

Prepared By: CW

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	jb	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			125	mg/Kg	1	100	125	55.1 - 135.7

Sample: 313261 - AH 5 0-1'

Laboratory: Lubbock

Analysis: TPH GRO

QC Batch: 96350

Prep Batch: 81655

Analytical Method: S 8015 D

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-06

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	u	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.60	mg/Kg	1	2.00	80	74.4 - 120
4-Bromofluorobenzene (4-BFB)			1.86	mg/Kg	1	2.00	93	74 - 120

Sample: 313262 - AH 5 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96378

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1260	mg/Kg	10	4.00

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Sample: 313263 - AH 5 2-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96378	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1300	mg/Kg	10	4.00

Sample: 313264 - AH 5 3-3.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96378	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1080	mg/Kg	5	4.00

Sample: 313265 - AH 5 4-4.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96379	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1100	mg/Kg	10	4.00

Sample: 313266 - AH 5 5-5.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96379	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1530	mg/Kg	10	4.00

Sample: 313267 - AH 5 6-6.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 96379
Prep Batch: 81654

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-11-07
Sample Preparation: 2012-11-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			6160	mg/Kg	10	4.00

Sample: 313268 - AH 5 7-7.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 96379
Prep Batch: 81654

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-11-07
Sample Preparation: 2012-11-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			5890	mg/Kg	10	4.00

Sample: 313269 - AH 5 8-8.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 96379
Prep Batch: 81654

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-11-07
Sample Preparation: 2012-11-06

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			5420	mg/Kg	10	4.00

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Sample: 313270 - AH 6 0-1'

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 96348

Prep Batch: 81655

Analytical Method: S 8021B

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-06

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	1	<0.0200	mg/Kg	1	0.0200
Xylene	u	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.87	mg/Kg	1	2.00	94	73.1 - 120
4-Bromofluorobenzene (4-BFB)			2.20	mg/Kg	1	2.00	110	71.5 - 120

Sample: 313270 - AH 6 0-1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96379

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			176	mg/Kg	5	4.00

Sample: 313270 - AH 6 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 96324

Prep Batch: 81632

Analytical Method: S 8015 D

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-05

Prep Method: N/A

Analyzed By: CW

Prepared By: CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B	2	107	mg/Kg	1	50.0

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			133	mg/Kg	1	100	133	55.1 - 135.7

Sample: 313270 - AH 6 0-1'

Laboratory: Lubbock

Analysis: TPH GRO

QC Batch: 96350

Prep Batch: 81655

Analytical Method: S 8015 D

Date Analyzed: 2012-11-06

Sample Preparation: 2012-11-06

Prep Method: S 5035

Analyzed By: MT

Prepared By: MT

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	74.4 - 120
4-Bromofluorobenzene (4-BFB)			2.07	mg/Kg	1	2.00	104	74 - 120

Sample: 313271 - AH 6 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96379

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			117	mg/Kg	5	4.00

Sample: 313272 - AH 6 2-2.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96379

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1290	mg/Kg	10	4.00

Sample: 313273 - AH 6 3-3.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-11-07	Analyzed By: AR
QC Batch: 96379	Sample Preparation: 2012-11-06	Prepared By: AR
Prep Batch: 81654		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			357	mg/Kg	5	4.00

Sample: 313274 - AH 6 4-4.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-11-07	Analyzed By: AR
QC Batch: 96379	Sample Preparation: 2012-11-06	Prepared By: AR
Prep Batch: 81654		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2020	mg/Kg	10	4.00

Sample: 313275 - AH 6 5-5.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2012-11-07	Analyzed By: AR
QC Batch: 96380	Sample Preparation: 2012-11-06	Prepared By: AR
Prep Batch: 81654		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			7510	mg/Kg	10	4.00

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Sample: 313276 - AH 6 6-6.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96380	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			8820	mg/Kg	10	4.00

Sample: 313277 - AH 6 7-7.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96380	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			18600	mg/Kg	10	4.00

Sample: 313278 - AH 7 0-1'

Laboratory:	Lubbock	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2012-11-06	Analyzed By:	MT
QC Batch:	96348	Sample Preparation:	2012-11-06	Prepared By:	MT
Prep Batch:	81655				

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	1	<0.0200	mg/Kg	1	0.0200
Xylene	u	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	73.1 - 120
4-Bromofluorobenzene (4-BFB)			1.94	mg/Kg	1	2.00	97	71.5 - 120

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Sample: 313278 - AH 7 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96380	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			798	mg/Kg	5	4.00

Sample: 313278 - AH 7 0-1'

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2012-11-06	Analyzed By:	CW
QC Batch:	96324	Sample Preparation:	2012-11-05	Prepared By:	CW
Prep Batch:	81632				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	jb	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			129	mg/Kg	1	100	129	55.1 - 135.7

Sample: 313278 - AH 7 0-1'

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2012-11-06	Analyzed By:	MT
QC Batch:	96350	Sample Preparation:	2012-11-06	Prepared By:	MT
Prep Batch:	81655				

Comment: Tetra Tech! In transit, arrive 11/6, due 11/9

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	u	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	74.4 - 120
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	74 - 120

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Sample: 313279 - AH 7 1-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96380	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			587	mg/Kg	5	4.00

Sample: 313280 - AH 7 2-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96380	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2770	mg/Kg	10	4.00

Sample: 313281 - AH 7 3-3.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96380	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			471	mg/Kg	5	4.00

Sample: 313282 - AH 7 4-4.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-11-07	Analyzed By:	AR
QC Batch:	96380	Sample Preparation:	2012-11-06	Prepared By:	AR
Prep Batch:	81654				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2840	mg/Kg	10	4.00

Sample: 313283 - AH 7 5-5.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 96380

Prep Batch: 81654

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-11-07

Sample Preparation: 2012-11-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			7380	mg/Kg	10	4.00

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Method Blanks

Method Blank (1) QC Batch: 96324

QC Batch: 96324
Prep Batch: 81632

Date Analyzed: 2012-11-06
QC Preparation: 2012-11-05

Analyzed By: CW
Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		2	29.6	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			122	mg/Kg	1	100	122	55.1 - 135.7

Method Blank (1) QC Batch: 96348

QC Batch: 96348
Prep Batch: 81655

Date Analyzed: 2012-11-06
QC Preparation: 2012-11-06

Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00365	mg/Kg	0.02
Toluene		1	<0.00816	mg/Kg	0.02
Ethylbenzene		1	<0.00560	mg/Kg	0.02
Xylene		1	<0.00460	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	73.1 - 120
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	71.5 - 120

Method Blank (1) QC Batch: 96350

QC Batch: 96350
Prep Batch: 81655

Date Analyzed: 2012-11-06
QC Preparation: 2012-11-06

Analyzed By: MT
Prepared By: MT

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Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.359	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.06	mg/Kg	1	2.00	103	74.4 - 120
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	74 - 120

Method Blank (1) QC Batch: 96376

QC Batch: 96376
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 96377

QC Batch: 96377
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 96378

QC Batch: 96378
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

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Method Blank (1) QC Batch: 96379

QC Batch: 96379
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 96380

QC Batch: 96380
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 96324
Prep Batch: 81632

Date Analyzed: 2012-11-06
QC Preparation: 2012-11-05

Analyzed By: CW
Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	221	mg/Kg	1	250	29.6	76	66.9 - 119.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	209	mg/Kg	1	250	29.6	72	66.9 - 119.9	6	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	132	110	mg/Kg	1	100	132	110	76.8 - 140.2

Laboratory Control Spike (LCS-1)

QC Batch: 96348
Prep Batch: 81655

Date Analyzed: 2012-11-06
QC Preparation: 2012-11-06

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.81	mg/Kg	1	2.00	<0.00365	91	78.4 - 120
Toluene		1	1.86	mg/Kg	1	2.00	<0.00816	93	78.3 - 120
Ethylbenzene		1	1.88	mg/Kg	1	2.00	<0.00560	94	77.4 - 120
Xylene		1	5.64	mg/Kg	1	6.00	<0.00460	94	77 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.82	mg/Kg	1	2.00	<0.00365	91	78.4 - 120	1	20
Toluene		1	1.83	mg/Kg	1	2.00	<0.00816	92	78.3 - 120	2	20
Ethylbenzene		1	1.88	mg/Kg	1	2.00	<0.00560	94	77.4 - 120	0	20
Xylene		1	5.64	mg/Kg	1	6.00	<0.00460	94	77 - 120	0	20

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

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.88	1.79	mg/Kg	1	2.00	94	90	73.1 - 120
4-Bromofluorobenzene (4-BFB)	1.92	1.88	mg/Kg	1	2.00	96	94	71.5 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 96350
Prep Batch: 81655

Date Analyzed: 2012-11-06
QC Preparation: 2012-11-06

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.359	88	66.3 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.6	mg/Kg	1	20.0	<0.359	93	66.3 - 120	6	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.80	1.84	mg/Kg	1	2.00	90	92	74.4 - 120
4-Bromofluorobenzene (4-BFB)	1.85	1.87	mg/Kg	1	2.00	92	94	74 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 96376
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2720	mg/Kg	1	2500	<3.85	109	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2670	mg/Kg	1	2500	<3.85	107	85 - 115	2	20

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

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Laboratory Control Spike (LCS-1)

QC Batch: 96377
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	mg/Kg	1	2500	<3.85	105	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2700	mg/Kg	1	2500	<3.85	108	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 96378
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	mg/Kg	1	2500	<3.85	105	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2710	mg/Kg	1	2500	<3.85	108	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 96379
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2610	mg/Kg	1	2500	<3.85	104	85 - 115

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

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Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2560	mg/Kg	1	2500	<3.85	102	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 96380
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2460	mg/Kg	1	2500	<3.85	98	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2510	mg/Kg	1	2500	<3.85	100	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 313223

QC Batch: 96324
Prep Batch: 81632

Date Analyzed: 2012-11-06
QC Preparation: 2012-11-05

Analyzed By: CW
Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	226	mg/Kg	1	250	27.8	79	36.1 - 147.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	252	mg/Kg	1	250	27.8	90	36.1 - 147.2	11	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	130	140	mg/Kg	1	100	130	140	78.3 - 131.6

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Matrix Spike (MS-1) Spiked Sample: 313428

QC Batch: 96348
Prep Batch: 81655

Date Analyzed: 2012-11-06
QC Preparation: 2012-11-06

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.85	mg/Kg	1	2.00	<0.00365	92	64.4 - 121
Toluene		1	2.03	mg/Kg	1	2.00	<0.00816	102	67.8 - 129
Ethylbenzene		1	2.17	mg/Kg	1	2.00	<0.00560	108	62.6 - 142
Xylene		1	6.55	mg/Kg	1	6.00	<0.00460	109	57.2 - 147

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.87	mg/Kg	1	2.00	<0.00365	94	64.4 - 121	1	20
Toluene		1	2.05	mg/Kg	1	2.00	<0.00816	102	67.8 - 129	1	20
Ethylbenzene		1	2.20	mg/Kg	1	2.00	<0.00560	110	62.6 - 142	1	20
Xylene		1	6.62	mg/Kg	1	6.00	<0.00460	110	57.2 - 147	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.95	2.11	mg/Kg	1	2	98	106	73.1 - 120
4-Bromofluorobenzene (4-BFB)	2.13	2.10	mg/Kg	1	2	106	105	71.5 - 120

Matrix Spike (MS-1) Spiked Sample: 313428

QC Batch: 96350
Prep Batch: 81655

Date Analyzed: 2012-11-06
QC Preparation: 2012-11-06

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.0	mg/Kg	1	20.0	<0.359	70	46 - 122

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.5	mg/Kg	1	20.0	<0.359	78	46 - 122	10	20

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

continued ...

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matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.87	1.83	mg/Kg	1	2	94	92	74.4 - 120
4-Bromofluorobenzene (4-BFB)	2.10	2.22	mg/Kg	1	2	105	111	74 - 120

Matrix Spike (MS-1) Spiked Sample: 313244

QC Batch: 96376
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3290	mg/Kg	5	2500	882	96	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3410	mg/Kg	5	2500	882	101	78.9 - 121	4	20

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

Matrix Spike (MS-1) Spiked Sample: 313254

QC Batch: 96377
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2670	mg/Kg	5	2500	<19.2	107	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2740	mg/Kg	5	2500	<19.2	110	78.9 - 121	3	20

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

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Matrix Spike (MS-1) Spiked Sample: 313264

QC Batch: 96378
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3200	mg/Kg	5	2500	1080	85	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3260	mg/Kg	5	2500	1080	87	78.9 - 121	2	20

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

Matrix Spike (MS-1) Spiked Sample: 313274

QC Batch: 96379
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4410	mg/Kg	10	2500	2020	96	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			4600	mg/Kg	10	2500	2020	103	78.9 - 121	4	20

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

Matrix Spike (MS-1) Spiked Sample: 313283

QC Batch: 96380
Prep Batch: 81654

Date Analyzed: 2012-11-07
QC Preparation: 2012-11-06

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			9520	mg/Kg	10	2500	7380	86	78.9 - 121

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			9790	mg/Kg	10	2500	7380	96	78.9 - 121	3	20

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

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Calibration Standards

Standard (CCV-1)

QC Batch: 96324

Date Analyzed: 2012-11-06

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	227	91	80 - 120	2012-11-06

Standard (CCV-2)

QC Batch: 96324

Date Analyzed: 2012-11-06

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	204	82	80 - 120	2012-11-06

Standard (CCV-3)

QC Batch: 96324

Date Analyzed: 2012-11-06

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	208	83	80 - 120	2012-11-06

Standard (CCV-4)

QC Batch: 96324

Date Analyzed: 2012-11-06

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	208	83	80 - 120	2012-11-06

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Standard (CCV-1)

QC Batch: 96348

Date Analyzed: 2012-11-06

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0877	88	80 - 120	2012-11-06
Toluene		1	mg/kg	0.100	0.0904	90	80 - 120	2012-11-06
Ethylbenzene		1	mg/kg	0.100	0.0922	92	80 - 120	2012-11-06
Xylene		1	mg/kg	0.300	0.276	92	80 - 120	2012-11-06

Standard (CCV-2)

QC Batch: 96348

Date Analyzed: 2012-11-06

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0887	89	80 - 120	2012-11-06
Toluene		1	mg/kg	0.100	0.0913	91	80 - 120	2012-11-06
Ethylbenzene		1	mg/kg	0.100	0.0927	93	80 - 120	2012-11-06
Xylene		1	mg/kg	0.300	0.277	92	80 - 120	2012-11-06

Standard (CCV-3)

QC Batch: 96348

Date Analyzed: 2012-11-06

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0876	88	80 - 120	2012-11-06
Toluene		1	mg/kg	0.100	0.0895	90	80 - 120	2012-11-06
Ethylbenzene		1	mg/kg	0.100	0.0911	91	80 - 120	2012-11-06
Xylene		1	mg/kg	0.300	0.272	91	80 - 120	2012-11-06

Standard (CCV-1)

QC Batch: 96350

Date Analyzed: 2012-11-06

Analyzed By: MT

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.863	86	80 - 120	2012-11-06

Standard (CCV-2)

QC Batch: 96350

Date Analyzed: 2012-11-06

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.913	91	80 - 120	2012-11-06

Standard (CCV-3)

QC Batch: 96350

Date Analyzed: 2012-11-06

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.910	91	80 - 120	2012-11-06

Standard (CCV-1)

QC Batch: 96376

Date Analyzed: 2012-11-07

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.9	100	85 - 115	2012-11-07

Standard (CCV-2)

QC Batch: 96376

Date Analyzed: 2012-11-07

Analyzed By: AR

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-11-07

Standard (CCV-1)

QC Batch: 96377

Date Analyzed: 2012-11-07

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.7	100	85 - 115	2012-11-07

Standard (CCV-2)

QC Batch: 96377

Date Analyzed: 2012-11-07

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-11-07

Standard (CCV-1)

QC Batch: 96378

Date Analyzed: 2012-11-07

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-11-07

Standard (CCV-2)

QC Batch: 96378

Date Analyzed: 2012-11-07

Analyzed By: AR

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.8	99	85 - 115	2012-11-07

Standard (CCV-1)

QC Batch: 96379

Date Analyzed: 2012-11-07

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.0	99	85 - 115	2012-11-07

Standard (CCV-2)

QC Batch: 96379

Date Analyzed: 2012-11-07

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-11-07

Standard (CCV-1)

QC Batch: 96380

Date Analyzed: 2012-11-07

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.3	99	85 - 115	2012-11-07

Standard (CCV-2)

QC Batch: 96380

Date Analyzed: 2012-11-07

Analyzed By: AR

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-11-07

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-12-8	Lubbock
2	NELAP	T104704392-12-4	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than 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.

12110209

Analysis Request of Chain of Custody Record

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ANALYSIS REQUEST
(Circle or Specify Method No.)**TETRA TECH**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: <u>Q61</u>		SITE MANAGER: <u>He Tavaraz</u>		PRESERVATIVE METHOD		NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD				BTX 8021B	TPH 8015 MOD TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCBs 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS			
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMR	GRAB			HCL	HNO3	ICE	NONE																				
PROJECT NO.: 114-640 1537		PROJECT NAME: <u>Q61 Majister SWD 29 #1</u>		SAMPLE IDENTIFICATION		1																									
260	10/30		S	X		1																									
261			S	X		1																									
262			S	X		1																									
263			S	X		1																									
264			S	X		1																									
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266			S	X		1																									
267			S	X		1																									
268			S	X		1																									
269			S	X		1																									

RELINQUISHED BY: (Signature) <u>[Signature]</u> Date: <u>11/12/02</u> Time: <u>11:50</u>		RECEIVED BY: (Signature) <u>[Signature]</u> Date: <u>11/12/02</u> Time: <u>11:50</u>	
RELINQUISHED BY: (Signature) <u>[Signature]</u> Date: <u>11/12/02</u> Time: <u>11:50</u>		RECEIVED BY: (Signature) <u>[Signature]</u> Date: <u>11/12/02</u> Time: <u>11:50</u>	
RELINQUISHED BY: (Signature) <u>[Signature]</u> Date: <u>11/12/02</u> Time: <u>11:50</u>		RECEIVED BY: (Signature) <u>[Signature]</u> Date: <u>11/12/02</u> Time: <u>11:50</u>	
RECEIVING LABORATORY: <u>Tetra</u>		REMARKS: <u>Same as first lot</u>	
ADDRESS: <u>Midland</u> STATE: <u>TX</u> ZIP: <u>79701</u>		PHONE: <u>682-4559</u>	
CONTACT: <u>He Tavaraz</u>		SAMPLE CONDITION WHEN RECEIVED: <u>1.40</u>	

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Analysis Request of Chain of Custody Record

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ANALYSIS REQUEST
(Circle or Specify Method No.)

TETRA TECH

**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946**

[illegible]

RELINQUISHED BY: (Signature)	Date: 12-12	RECEIVED BY: (Signature)	Date: 11/2/12	SAMPLED BY: (Print & Initial)	Date: _____
RELINQUISHED BY: (Signature)	Time: 0950	RECEIVED BY: (Signature)	Time: 9:50	Time: _____	Time: _____
RELINQUISHED BY: (Signature)	Date: _____	RECEIVED BY: (Signature)	Date: _____	AIRBILL #: _____	_____
RELINQUISHED BY: (Signature)	Time: _____	RECEIVED BY: (Signature)	Time: _____	OTHER: _____	_____
RECEIVING LABORATORY: True	Date: _____	RECEIVED BY: (Signature)	Date: _____	TETRA TECH CONTACT PERSON: Ike Tauriez	Results by: _____
ADDRESS: _____	_____	_____	_____	_____	_____
CITY: Highland	STATE: _____	_____	_____	_____	RUSH Charges Authorized: _____
PHONE: _____	ZIP: _____	_____	_____	_____	Yes _____ No _____

ON WHEN RECEIVED:	REMARKS:
	Same as first cop.
Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech	

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.