'rict I
5 N. French Dr., Hobbs, NM 88240
:rict II
1 W. Grand Avenue, Artesia, NM 88210
'rict III
0 Rio Brazos Road, Aztec, NM 87410
trict IV
0 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

ame of Company *COG Operating LLC.*	Contact *Pat Ellis*
ddress *550 W. Texas, Suite 1300 Midland, TX 79701*	Telephone No. *432-686-3023*
acility Name *Bonds #1*	Facility Type *Production*

urface Owner *BLM*	Mineral Owner	Lease No. API# 30-025-25275

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	*20*	*9S*	*35E*	*1650*	*North*	*330*	*East*	*Lea*

Latitude 33 deg. 31.333' **Longitude** 103 deg. 22.513'

NATURE OF RELEASE

ype of Release *Produced Water*	Volume of Release *45 BW*	Volume Recovered *40 BW*
ource of Release *Kill switch malfunction*	Date and Hour of Occurrence *10/30/08 5:00 AM*	Date and Hour of Discovery *10/30/08 9:30 AM*
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? *Larry Johnson w/NMOCD*	
By Whom? *Kanicia Carrillo*	Date and Hour *10/30/08 2:18 PM*	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

WATER @ 150'

Describe Cause of Problem and Remedial Action Taken.*
Cause: The kill switch on the water tank did not operate properly causing the overflow.
Remedial Action: Replaced the headswitch and reset the lease kill to shut pumping unit down when tank gauge gets to 12 ft.

Describe Area Affected and Cleanup Action Taken.* *Spill Area: 30' x 50' in area, 45 bbls of produced water spilled, all contained within firewall. Picked up 40 bbls with vacuum truck = Net Loss 5 bbls. of water. Tetra Tech delineated and sampled spill site. All TPH and BTEX sample results below regulatory limits and chlorides delineated to 381 mg/kg at depth of 4 ft.*

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION
Printed Name: Ike Tavarez (agent for COG)	Approved by ~~District Supervisor:~~ ENV ENGINEER Jeffrey Loking
Title: Project Manager	Approval Date: 10/05/09 Expiration Date: —
E-mail Address: ike.tavarez@tetratech.com	Conditions of Approval: Attached ☐ IRP-2008
Date: 8/13/2009 Phone: 432-682-4559	

Attach Additional Sheets If Necessary

PGRL 0[illegible]

SITE INFORMATION

Type of Report: Closure Report

General Site Information:	
Site:	**Bonds #1 Tank Battery**
Company:	**COG Operating LLC**
Section, Township and Range	**Section 20, T9S, R35E**
Unit Letter:	H
Lease Number:	API 30-025-25275
County:	Lea
GPS:	33° 31.333' , 103° 22.513'
Surface Owner:	BLM
Mineral Owner:	Various private
Directions:	From Crossroads, NM, at the intersection of Hwy 206 and CR 170, go west on Cr 170
	for 2.0 miles. Turn right and go north for 0.6 miles to tank battery.

Release Data:	
Date Released:	10/30/2008
Type Release:	produced water
Source of Contamination:	water storage tank
Fluid Released:	45 barrels
Fluids Recovered:	40 barrels

Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating LLC		Tetra Tech
Address:	550 W. Texas, Suite 1300		1910 N. Big Spring
P.O. Box			
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682- 4559
Email:	pellis@conchoresources.com		ike.tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	**0**	*148 ft.*
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	*None*
Water Source >1,000 ft., Private >200 ft.	***0***	
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	*None*
200 ft - 1,000 ft.	10	*None*
>1,000 ft.	**0**	
Total Ranking Score:	**0**	

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

TETRA TECH

August 13, 2009

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

Re: Assessment and Closure Report for the COG Operating LLC, Bonds #1 Tank Battery, Unit H, Section 20, Township 9 South, Range 35 East, Lea County, New Mexico, NMOCD API No. 30-025-25275

Mr. Johnson:

Tetra Tech, Inc. was contacted by COG Operating LLC (COG) to assess a spill from the Bonds #1 Tank Battery, located in Unit H, Section 20, Township 9 South, Range 35 East, Lea County, New Mexico (Site). The spill site coordinates are N 33° 31.333', W 103° 22.513'. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the high level switch at the water tank malfunctioned causing an overflow on October 30, 2008. Approximately 45 barrels of produced water was released, however, all of the spill volume was contained within the firewall. A vacuum truck was used to recover 40 barrels of produced water. The initial Form C-141 is enclosed in Appendix C.

Groundwater

According to the United States Geological Survey (USGS) database, the reported depth of water in Section 20, where the spill site is located, is 148' below ground surface (bgs). The depths to water in adjoining sections ranged from 114' to 153' bgs. No published water depth data was available at the NMOSE iWaters database. Copies of available groundwater data are included in Appendix A.

Tetra Tech
1910 North Big Spring Midland, TX 79705
Tel 432 682 4559 Fax 432.682.3946 www.tetratech.com

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater (>100'), the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Results

On December 2, 2008, Tetra Tech personnel inspected and sampled the spill area. The spill area is shown on Figure 3. A total of five (5) auger holes (AH-1 through AH-5) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. All of the submitted samples were below the TPH and BTEX RRAL. The chloride concentrations ranged from a high of 1,220 mg/kg at AH-1 (2.5' to 3.0') to 274 mg/kg at AH-3 (1'-1.5'). Chloride concentrations generally showed decline with depth, but were not defined in AH-1 or AH-5. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

In order to complete delineation of the chlorides at the site, on February 11, 2009, Tetra Tech personnel were onsite to supervise the installation of two (2) backhoe trenches (T-1 and T-2). The trenches were installed in the vicinity of the auger holes AH-1 and AH-5, respectively. Samples from trench T-1 showed chloride concentrations declining to 381 mg/kg at 4.0'. Samples from trench T-2 showed chloride concentrations declining to 407 mg/kg at 4.0'. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The results of the sampling are summarized in Table 1. The excavation depths and trench locations are shown on Figure 3.

TETRA TECH

Conclusions

The depth to groundwater was reported greater than 100' bgs at the Site. The TPH and BTEX sample results were all below the regulatory levels and showed declining chloride level to 381 mg/kg. On June 12, 2009, Tetra Tech personnel met with Larry Johnson, with the NMOCD, to discuss the results of the investigation. Based on the results, Mr. Johnson approved the closure of the site. The final Form C-141 is included in Appendix C.

If you require any additional information or have any questions or comments concerning this Closure Report, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Robert McNeill
Sr. Project Manager

cc: Pat Ellis – COG Operating LLC.

TABLES

Table 1
COG
Bonds #1 Tank Battery
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
AH-1	12/2/2008	0-1	X		63.7	1.97	65.67	-	-	-	-	780
	12/2/2008	1-1.5	X		-	-	-	-	-	-	-	801
	12/2/2008	2-2.5	X		-	-	-	-	-	-	-	1,060
	12/2/2008	2.5-3.0	X		-	-	-	-	-	-	-	1,220
T-1	2/11/2009	2.0	X									<200
	2/11/2009	3.0	X									258
	2/11/2009	4.0	X									381
AH-2	12/2/2008	0-1	X		159	63.2	222.2	<0.0100	<0.0100	<0.0100	<0.0100	1,530
	12/2/2008	1-1.5	X		-	-	-	-	-	-	-	310
AH-3	12/2/2008	0-1	X		<50.0	13.8	13.8	-	-	-	-	652
	12/2/2008	1-1.5	X		-	-	-	-	-	-	-	274
	12/2/2008	2-2.5	X		-	-	-	-	-	-	-	341
AH-4	12/2/2008	0-1	X		135	88.0	223	<0.0200	0.175	0.366	0.343	692
	12/2/2008	1-1.5	X		-	-	-	-	-	-	-	470
	12/2/2008	2-2.5	X		-	-	-	-	-	-	-	368
AH-5	12/2/2008	0-1	X		<50.0	4.30	4.30	-	-	-	-	409
	12/2/2008	1-1.5	X		-	-	-	-	-	-	-	552
T-2	2/11/2009	4.0	X									521
	2/11/2009	5.0	X									407

T-1, T-2 (trench - backhole samples)

FIGURES

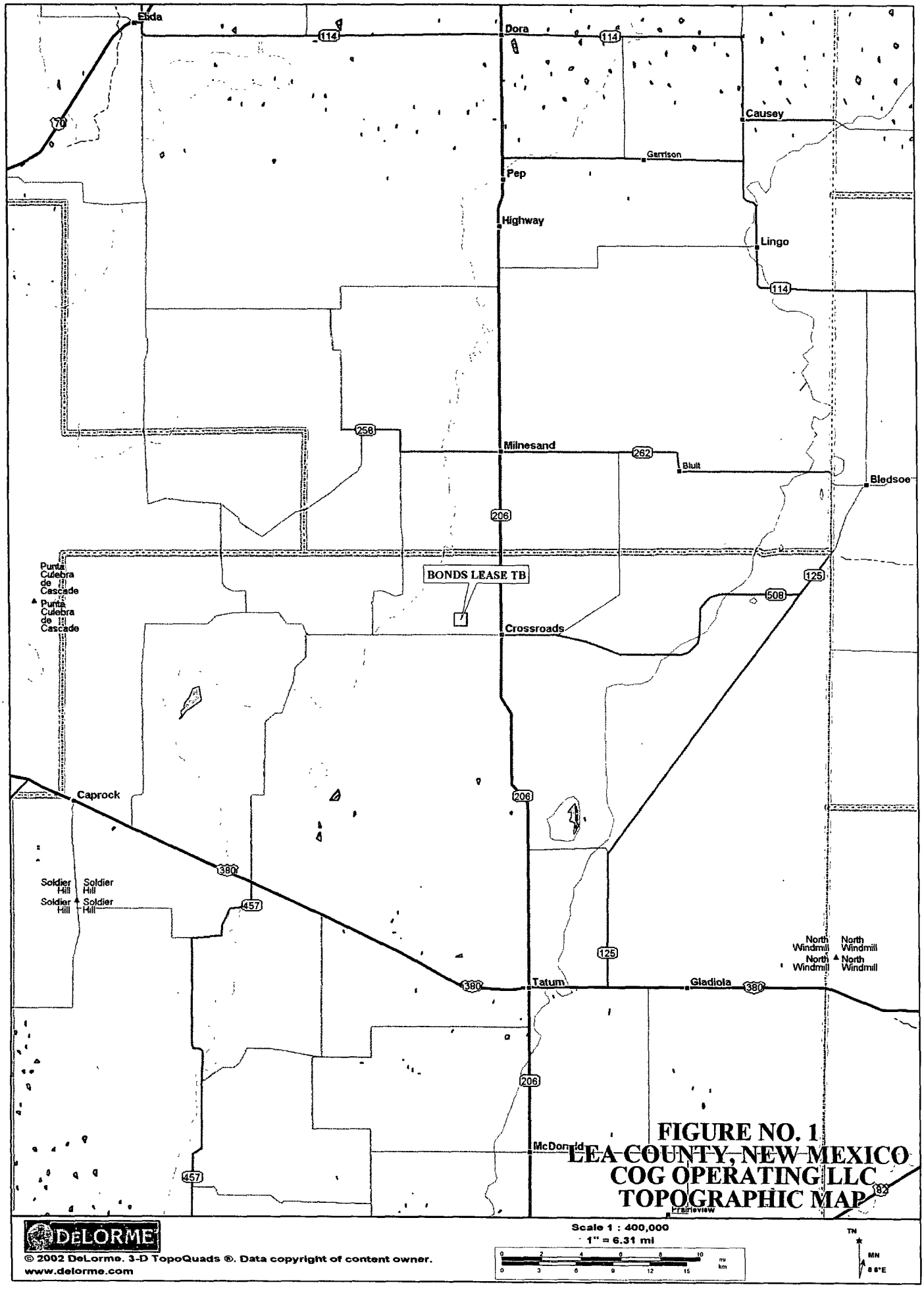


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

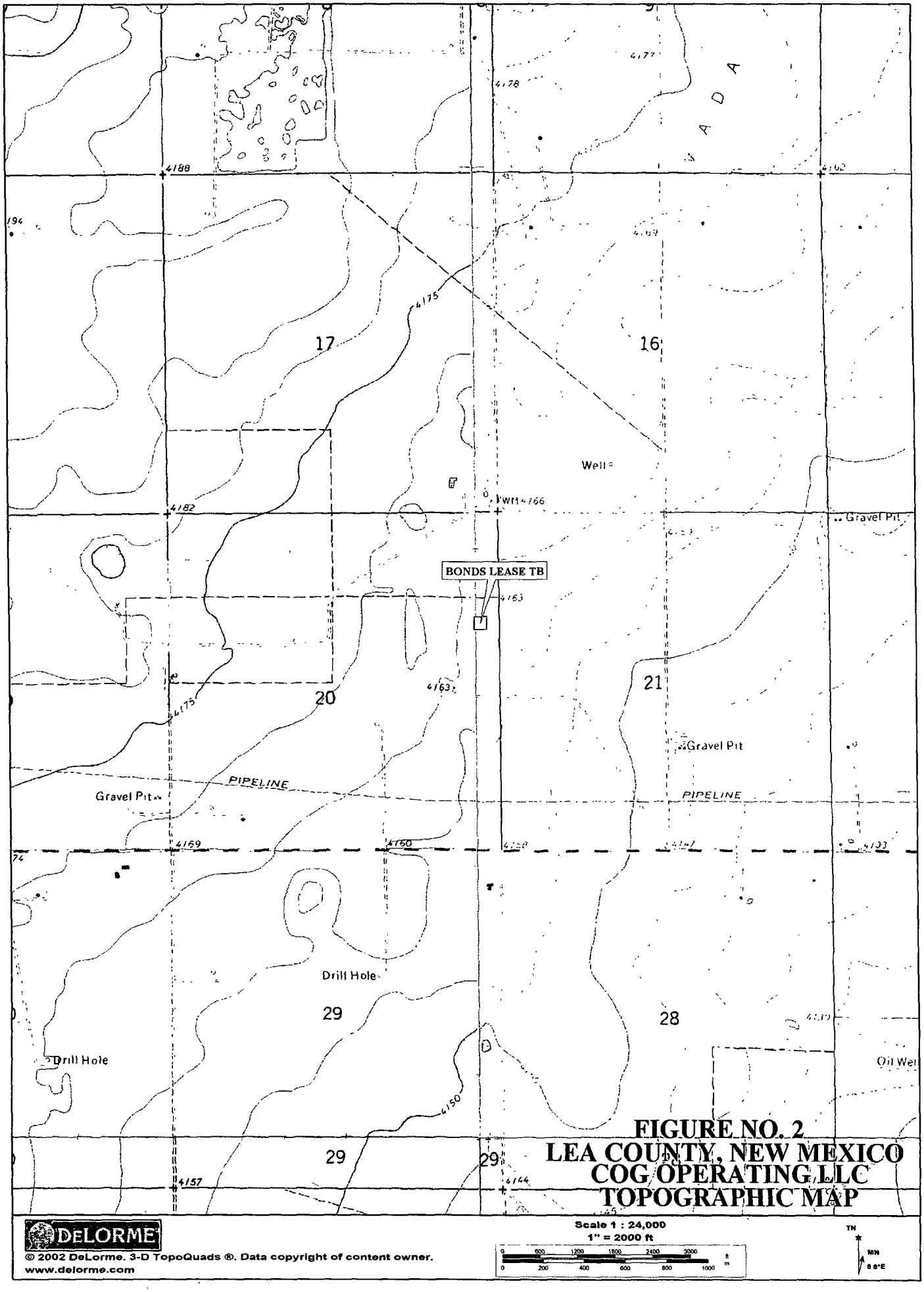
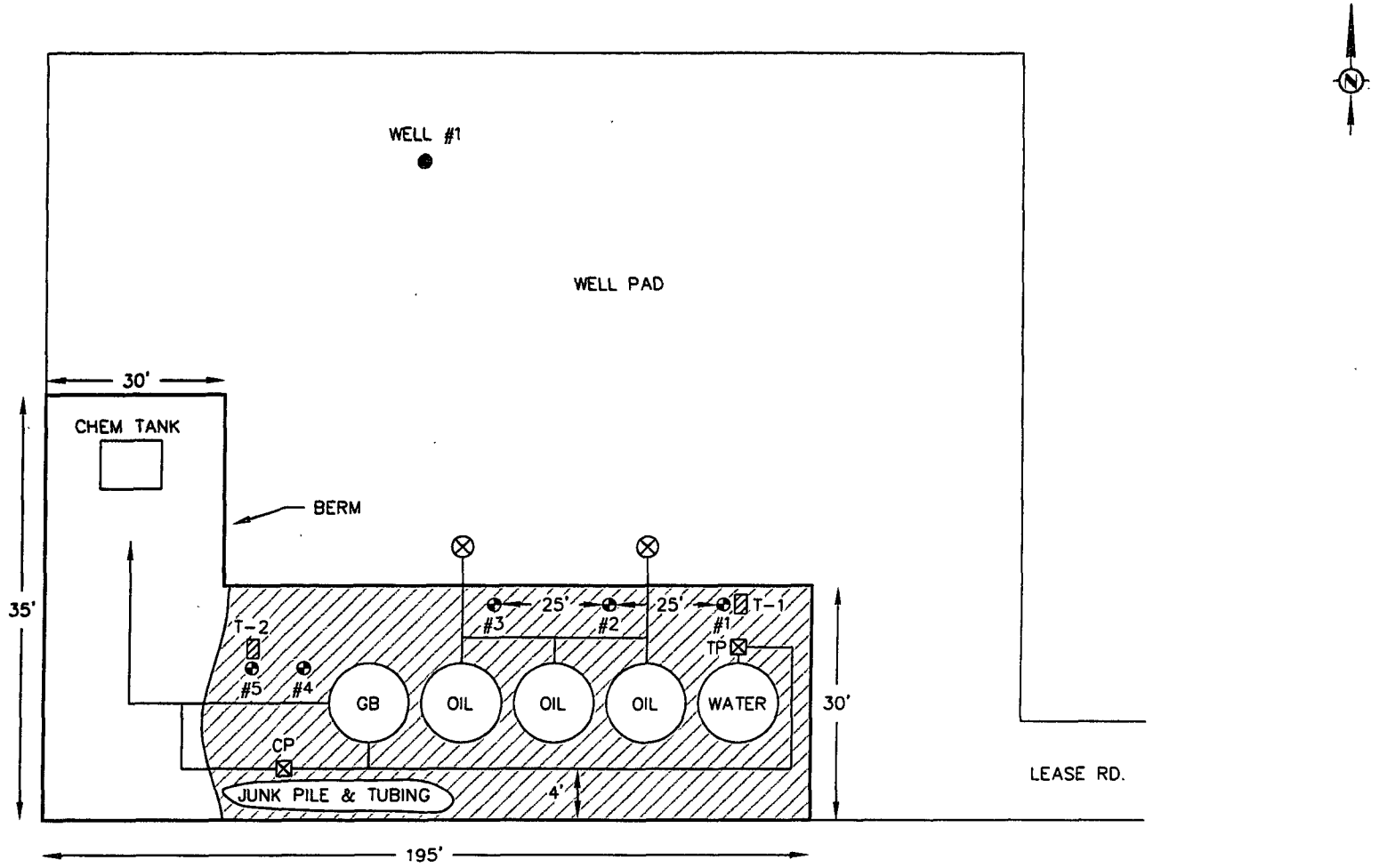


FIGURE NO. 2
LEA COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP



SPILL AREA
SAMPLE TRENCH
SAMPLE LOCATIONS

NOT TO SCALE

FIGURE NO. 3

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

BONDS LEASE TB

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 12/29/08
DWN. BY: JJ
FILE: H:\COG\3637 BONDS LEASE TB

APPENDIX A

Water Well Data
COG - Bonds #1 Tank Battery
Average Depth to Groundwater (ft)

9 South 34 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17 **47**	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

9 South 35 East

6	5	4	3	2	1 **178**
7	8	9	10	11	12
18	17 **153**	16	15	14	13
19	20 Site **148**	21	22 **112**	23	24 **134**
30	29	28 **114**	27	26 **139**	25
31	32	33	34	35 **137**	36

9 South 36 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

10 South 34 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20 **31**	21	22	23	24
30	29	28	27	26	25
31	32 **68**	33	34	35	36 **43**

10 South 35 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

10 South 36 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)

34 NMOCD - Groundwater Data

123 Field water level

National Water Information System: Web Interface

USGS Water Resources

Data Category: Ground Water | Geographic Area: New Mexico | GO

News: Recent changes

Ground-water levels for New Mexico

Search Results -- 1 sites found

Search Criteria

site_no list = • 333057103232401
Minimum number of levels = 1

Save file of selected sites to local disk for future upload

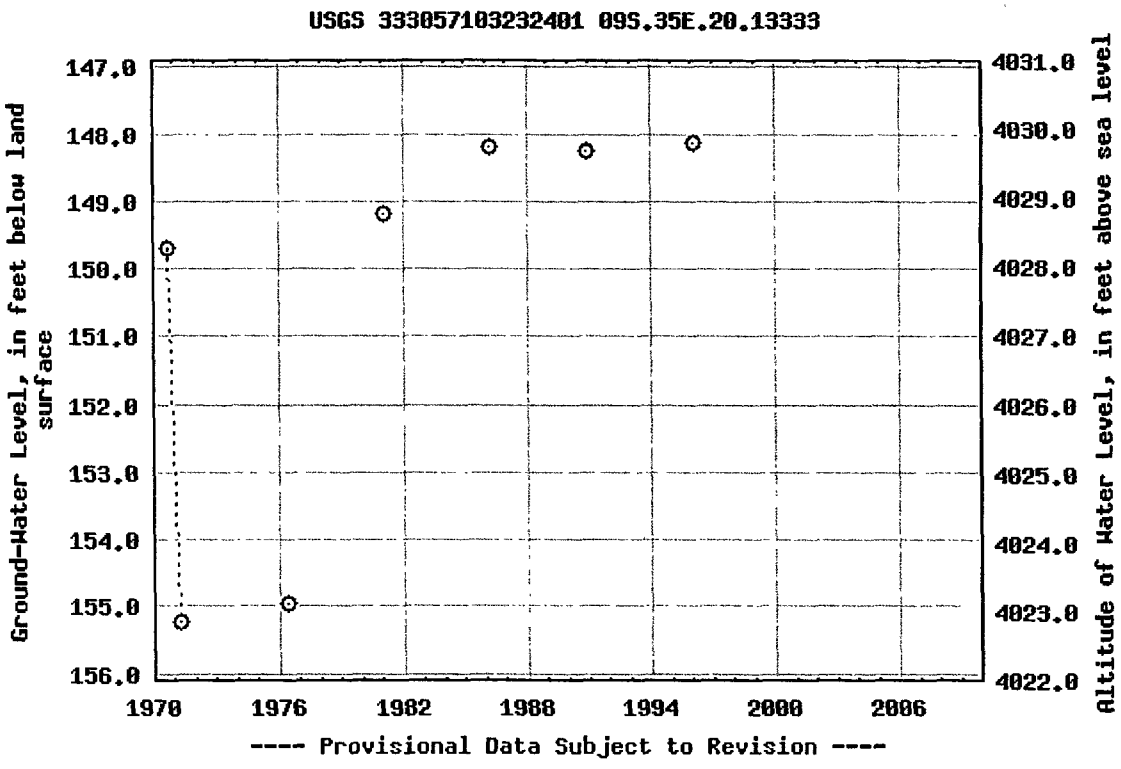
USGS 333057103232401 09S.35E.20.13333

Available data for this site Ground-water: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 12080001
Latitude 33°31'11", Longitude 103°23'27" NAD27
Land-surface elevation 4,178.00 feet above sea level
NGVD29
This well is completed in the OGALLALA FORMATION (121OGLL) local aquifer.

Output formats

- Table of data
- Tab-separated data
- Graph of data
- Reselect period



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USGS Water Resources

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site_no list = • 333123103222401
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USGS 333123103222401 09S.35E.17.44440

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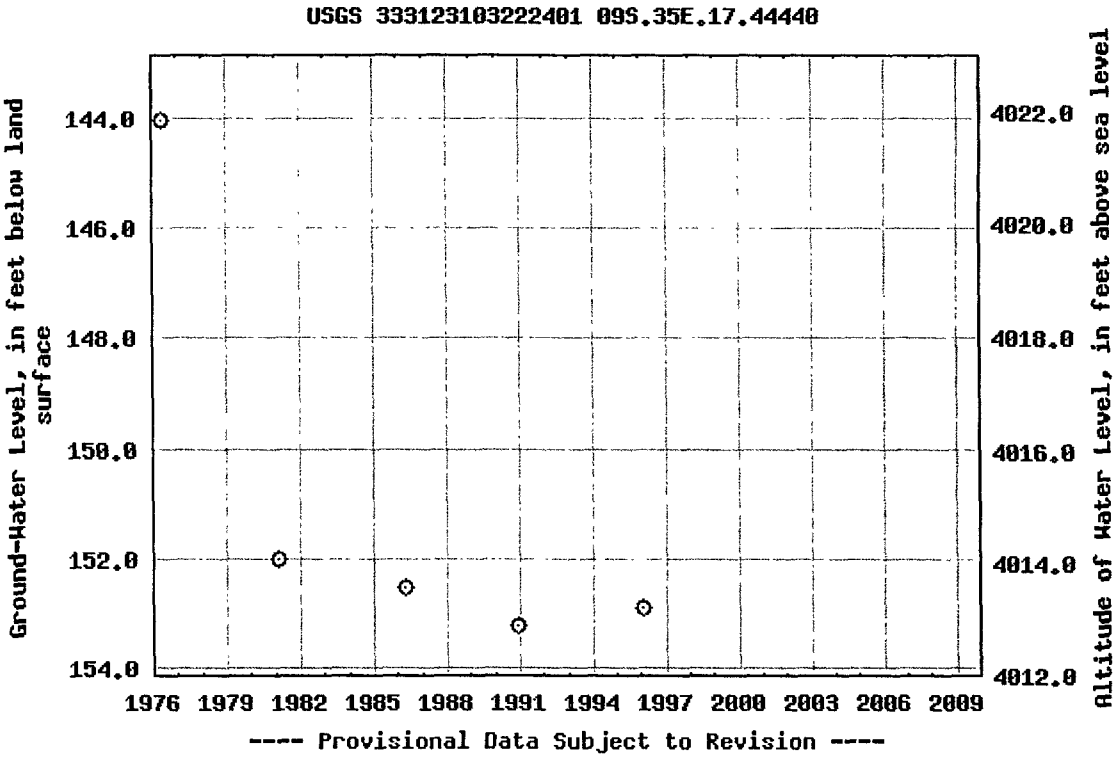
Lea County, New Mexico
Hydrologic Unit Code 12080001
Latitude 33°31'38", Longitude 103°22'28" NAD27
Land-surface elevation 4,166.00 feet above sea level NGVD29
This well is completed in the CHINLE FORMATION (231CHNL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



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USGS 333023103213601 09S.35E.28.21422

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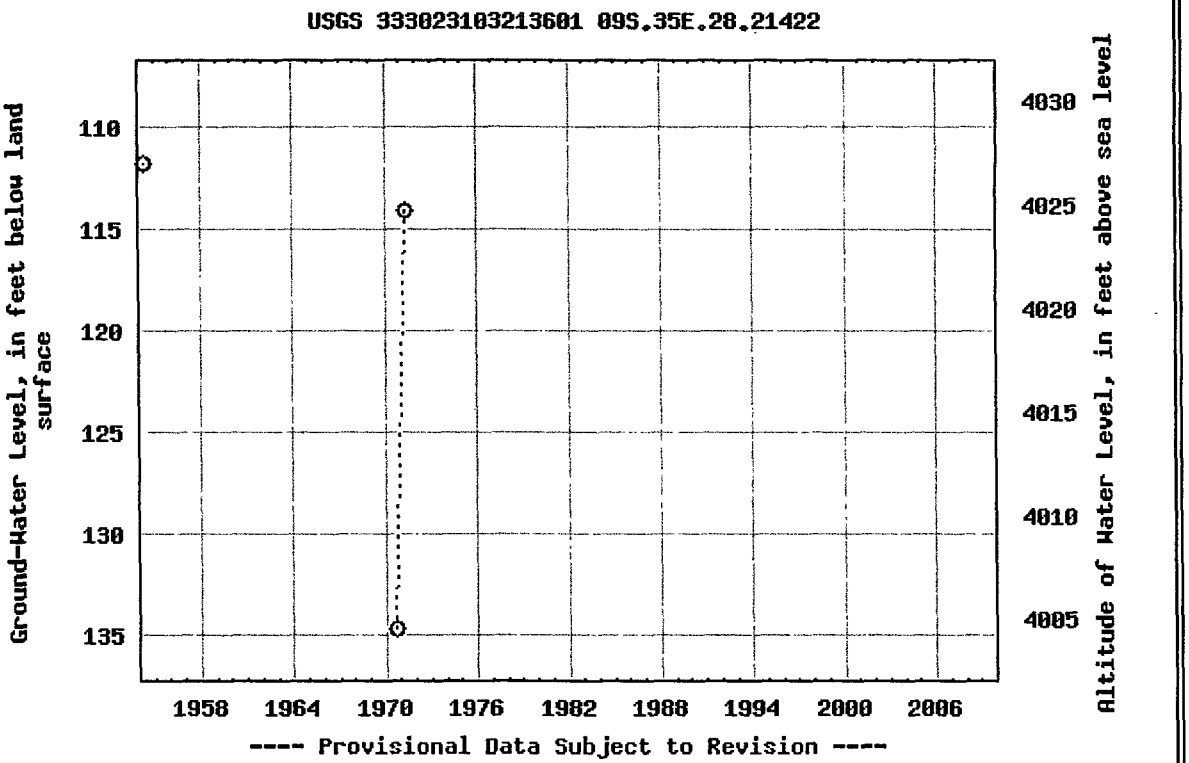
Lea County, New Mexico
Hydrologic Unit Code 12080001
Latitude 33°30'37", Longitude 103°21'40" NAD27
Land-surface elevation 4,139.00 feet above sea level NGVD29
This well is completed in the OGALLALA FORMATION (121OGLL) local aquifer.

Output formats

- Table of data
- Tab-separated data
- Graph of data
- Reselect period



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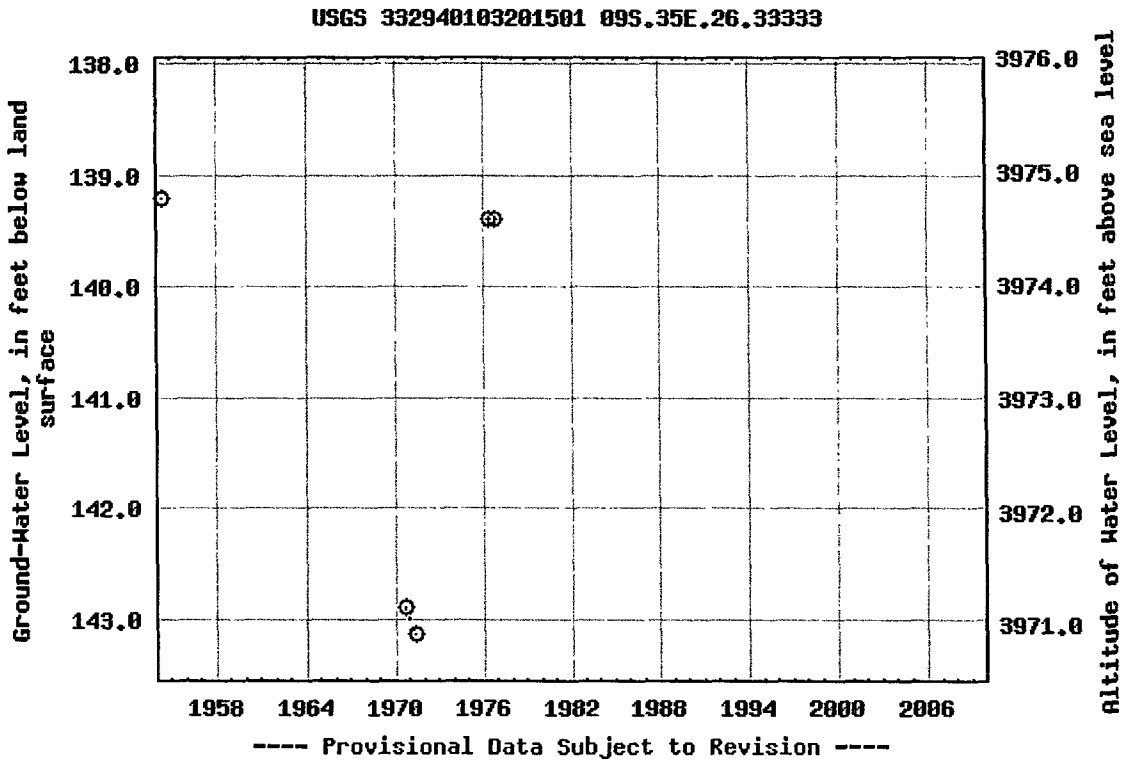
USGS 332940103201501 09S.35E.26.33333

Available data for this site Ground-water: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 12080001
Latitude 33°29'53", Longitude 103°20'20" NAD27
Land-surface elevation 4,114.00 feet above sea level
NGVD29
This well is completed in the OGALLALA FORMATION (121OGLL) local aquifer.

Output formats

- Table of data
- Tab-separated data
- Graph of data
- Reselect period



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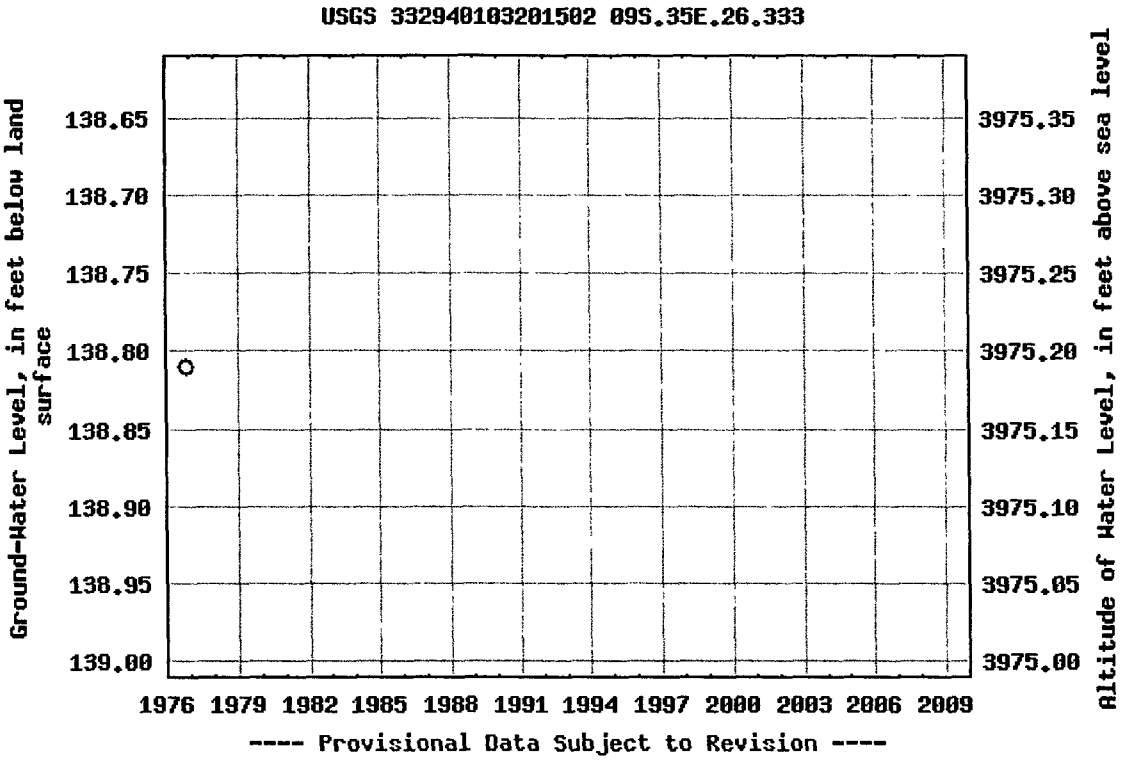
USGS 332940103201502 09S.35E.26.333

Available data for this site Ground-water: Field measurements GO

Lea County, New Mexico
Hydrologic Unit Code 12080001
Latitude 33°29'56", Longitude 103°20'16" NAD27
Land-surface elevation
4,114.00 feet above sea level NGVD29

Output formats

- Table of data
- Tab-separated data
- Graph of data
- Reselect period



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site_no list = • 332931103201501
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USGS 332931103201501 09S.35E.35.11313

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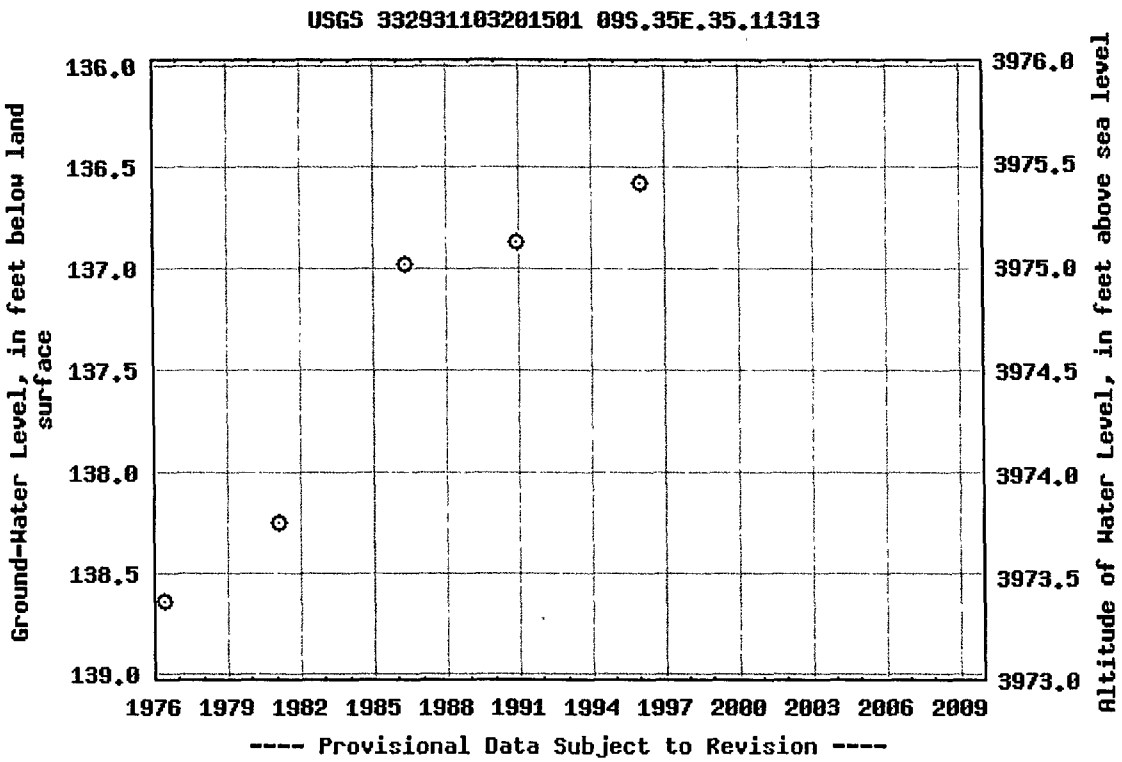
Lea County, New Mexico
Hydrologic Unit Code 12080001
Latitude 33°29'43", Longitude 103°20'19" NAD27
Land-surface elevation 4,112.00 feet above sea level NGVD29
This well is completed in the OGALLALA FORMATION (121OGLL) local aquifer.

Output formats

- Table of data
- Tab-separated data
- Graph of data
- Reselect period



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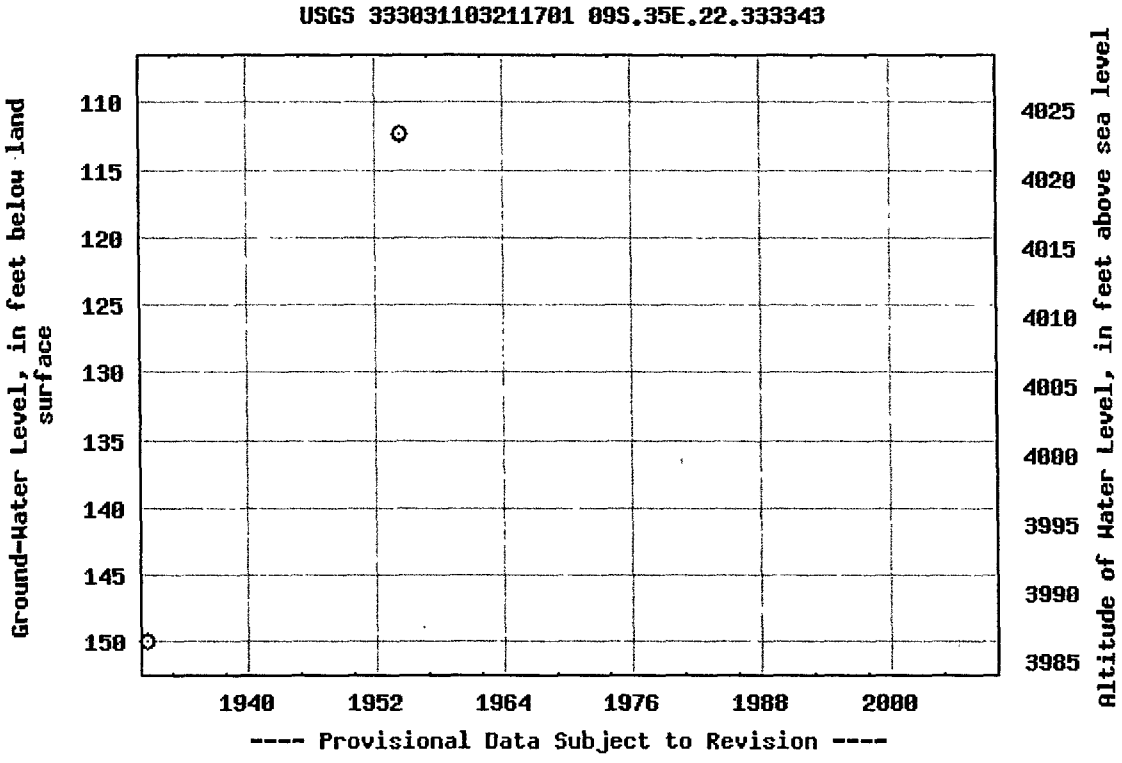
USGS 333031103211701 09S.35E.22.333343

Available data for this site Ground-water: Field measurements GO

Lea County, New Mexico
Hydrologic Unit Code 12080001
Latitude 33°30'45", Longitude 103°21'20" NAD27
Land-surface elevation 4,136.00 feet above sea level
NGVD29
The depth of the well is 156 feet below land surface.
This well is completed in the OGALLALA FORMATION (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.

Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site

Top
Explanation of terms
Subscribe for NWISWeb changes

Automated retrievals

Accessibility FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey
Title: Ground water for New Mexico: Water Levels
URL: http://waterdata.usgs.gov/nm/nwis/gwlevels?

Page Contact Information: New Mexico NWISWeb Maintainer
Page Last Modified: 2009-04-02 14:24:05 EDT
1.95 1.91 nadww01

National Water Information System: Web Interface

USGS Water Resources

Data Category: Ground Water | Geographic Area: New Mexico | GO

News: Recent changes

Ground-water levels for New Mexico

Search Results -- 1 sites found

Search Criteria

site_no list = • 333408103184101
Minimum number of levels = 1

Save file of selected sites to local disk for future upload

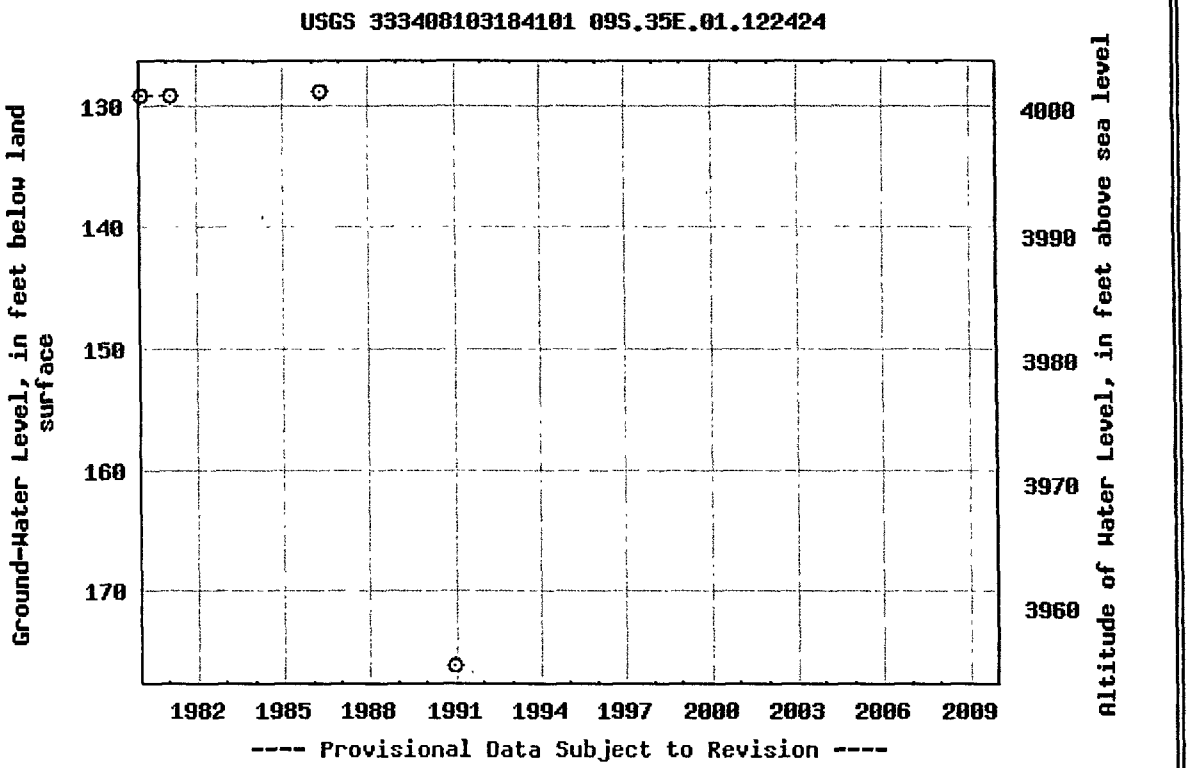
USGS 333408103184101 09S.35E.01.122424

Available data for this site Ground-water: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code
Latitude 33°34'09", Longitude 103°18'49" NAD27
Land-surface elevation 4,131.00 feet above sea level NGVD29
This well is completed in the CRETACEOUS SYSTEM (210CRCS) local aquifer.

Output formats

- Table of data
- Tab-separated data
- Graph of data
- Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.

Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site

Top
Explanation of terms
Subscribe for NWISWeb changes

Automated retrievals

Accessibility FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey
Title: Ground water for New Mexico: Water Levels
URL: http://waterdata.usgs.gov/nm/nwis/gwlevels?

Page Contact Information: New Mexico NWISWeb Maintainer
Page Last Modified: 2009-04-02 14:25:41 EDT
1.98 1.92 nadww01

National Water Information System: Web Interface

USGS Water Resources

Data Category: Ground Water | Geographic Area: New Mexico | GO

News: Recent changes

Ground-water levels for New Mexico

Search Results -- 1 sites found

Search Criteria

site_no list = • 333032103184301
Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 333032103184301 09S.35E.24.344441

Available data for this site Ground-water: Field measurements GO

Lea County, New Mexico
Hydrologic Unit Code 12080001
Latitude 33°30'46", Longitude 103°18'49" NAD27
Land-surface elevation 4,092.00 feet above sea level
NGVD29
The depth of the well is 156 feet below land surface.
This well is completed in the OGALLALA FORMATION (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

APPENDIX B

Summary Report

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

Report Date: February 16, 2009

Work Order: 9021134

Project Location: Lea County, NM
Project Name: COG/Bonds #1 Tank Battery
Project Number: 115-6403637

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
187208	T-1 2.0'	soil	2009-02-11	00:00	2009-02-11
187209	T-1 3.0'	soil	2009-02-11	00:00	2009-02-11
187210	T-1 4.0'	soil	2009-02-11	00:00	2009-02-11
187211	T-2 4.0'	soil	2009-02-11	00:00	2009-02-11
187212	T-2 5.0'	soil	2009-02-11	00:00	2009-02-11

Sample: 187208 - T-1 2.0'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 187209 - T-1 3.0'

Param	Flag	Result	Units	RL
Chloride		**258**	mg/Kg	4.00

Sample: 187210 - T-1 4.0'

Param	Flag	Result	Units	RL
Chloride		**381**	mg/Kg	4.00

Sample: 187211 - T-2 4.0'

Param	Flag	Result	Units	RL
Chloride		**521**	mg/Kg	4.00

Sample: 187212 - T-2 5.0'

Param	Flag	Result	Units	RL
Chloride		**407**	mg/Kg	4.00

TRACEANALYSIS, INC.

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 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft Worth Texas 76132 817•201•5260
E-Mail lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: February 16, 2009

Work Order: 9021134

Project Location: Lea County, NM
Project Name: COG/Bonds #1 Tank Battery
Project Number: 115-6403637

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
187208	T-1 2.0'	soil	2009-02-11	00:00	2009-02-11
187209	T-1 3.0'	soil	2009-02-11	00:00	2009-02-11
187210	T-1 4.0'	soil	2009-02-11	00:00	2009-02-11
187211	T-2 4.0'	soil	2009-02-11	00:00	2009-02-11
187212	T-2 5.0'	soil	2009-02-11	00:00	2009-02-11

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 6 pages and shall not be reproduced except in its entirety, without written approval of

TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Standard Flags

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

Case Narrative

Samples for project COG/Bonds #1 Tank Battery were received by TraceAnalysis, Inc. on 2009-02-11 and assigned to work order 9021134. Samples for work order 9021134 were received intact at a temperature of 11.6 deg. C.

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	48563	2009-02-13 at 10:02	56848	2009-02-13 at 15:03

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 9021134 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.

Analytical Report

Sample: 187208 - T-1 2.0'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56848	Date Analyzed:	2009-02-13	Analyzed By:	AR
Prep Batch:	48563	Sample Preparation:	2009-02-13	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		<200		mg/Kg	50	4.00

Sample: 187209 - T-1 3.0'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56848	Date Analyzed:	2009-02-13	Analyzed By:	AR
Prep Batch:	48563	Sample Preparation:	2009-02-13	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**258**		mg/Kg	50	4.00

Sample: 187210 - T-1 4.0'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56848	Date Analyzed:	2009-02-13	Analyzed By:	AR
Prep Batch:	48563	Sample Preparation:	2009-02-13	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**381**		mg/Kg	50	4.00

Sample: 187211 - T-2 4.0'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56848	Date Analyzed:	2009-02-13	Analyzed By:	AR
Prep Batch:	48563	Sample Preparation:	2009-02-13	Prepared By:	AR

continued ...

sample 187211 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**521**	mg/Kg	50	4.00

Sample: 187212 - T-2 5.0'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56848	Date Analyzed:	2009-02-13	Analyzed By:	AR
Prep Batch:	48563	Sample Preparation:	2009-02-13	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**407**	mg/Kg	50	4.00

Method Blank (1) QC Batch: 56848

QC Batch:	56848	Date Analyzed:	2009-02-13	Analyzed By:	AR
Prep Batch:	48563	QC Preparation:	2009-02-13	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.01	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch:	56848	Date Analyzed:	2009-02-13	Analyzed By:	AR
Prep Batch:	48563	QC Preparation:	2009-02-13	Prepared By:	AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.9	mg/Kg	1	100	<2.01	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	mg/Kg	1	100	<2.01	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: 187212

QC Batch: 56848 | Date Analyzed: 2009-02-13 | Analyzed By: AR
Prep Batch: 48563 | QC Preparation: 2009-02-13 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5560	mg/Kg	50	5000	407	103	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5640	mg/Kg	50	5000	407	105	85 - 115	1	20

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

Standard (ICV-1)

QC Batch: 56848 | Date Analyzed: 2009-02-13 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2009-02-13

Standard (CCV-1)

QC Batch: 56848 | Date Analyzed: 2009-02-13 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-02-13

Work Order #

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 115-640 3637

PROJECT NAME: COG / Bonds #1 Tank Battery

Lea County, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 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	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
187208	2/11/09		S		X	T-1 2.0'	1				X													X				
209			S		X	T-1 3.0'	1				X													X				
210			S		X	T-1 4.0'	1				X													X				
211			S		X	T-2 4.0'	1				X													X				
212	↓		S		X	T-2 5.0'	1				X													X				

RELINQUISHED BY: (Signature) — Date: 2/11/09 Time: 4:50

RECEIVED BY: (Signature) — Date: Time:

SAMPLED BY: (Print & Initial) Ray Taylor — Date: 2/11/09 Time:

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

RECEIVING LABORATORY: Trace

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: 2.11.09 TIME: 16:50

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 11.6°c

REMARKS: All tests Midland

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

Summary Report

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

Report Date: December 10, 2008

Work Order: 8120325

Project Location: Lea County, NM
Project Name: COG/Bonds #1 Tank Battery
Project Number: 115-6403637

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
181098	AH-1 0-1'	soil	2008-12-02	00:00	2008-12-03
181099	AH-1 1-1.5'	soil	2008-12-02	00:00	2008-12-03
181100	AH-1 2-2.5'	soil	2008-12-02	00:00	2008-12-03
181101	AH-1 2.5-3.0'	soil	2008-12-02	00:00	2008-12-03
181102	AH-2 0-1'	soil	2008-12-02	00:00	2008-12-03
181103	AH-2 1-1.5'	soil	2008-12-02	00:00	2008-12-03
181104	AH-3 0-1'	soil	2008-12-02	00:00	2008-12-03
181105	AH-3 1-1.5'	soil	2008-12-02	00:00	2008-12-03
181106	AH-3 2-2.5'	soil	2008-12-02	00:00	2008-12-03
181107	AH-4 0-1'	soil	2008-12-02	00:00	2008-12-03
181108	AH-4 1-1.5'	soil	2008-12-02	00:00	2008-12-03
181109	AH-4 2-2.5'	soil	2008-12-02	00:00	2008-12-03
181110	AH-5 0-1'	soil	2008-12-02	00:00	2008-12-03
181111	AH-5 1-1.5'	soil	2008-12-02	00:00	2008-12-03

	BTEX				TPH DRO	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
181098 - AH-1 0-1'					**63.7**	**1.97**
181102 - AH-2 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	**159**	**63.2**
181104 - AH-3 0-1'					<50.0	**13.8**
181107 - AH-4 0-1'	<0.0200	**0.175**	**0.366**	**0.343**	**135**	**88.0**
181110 - AH-5 0-1'					<50.0	**4.30**

Sample: 181098 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**780**	mg/Kg	2.00

Sample: 181099 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**801**	mg/Kg	2.00

Sample: 181100 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**1060**	mg/Kg	2.00

Sample: 181101 - AH-1 2.5-3.0'

Param	Flag	Result	Units	RL
Chloride		**1220**	mg/Kg	2.00

Sample: 181102 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**1530**	mg/Kg	2.00

Sample: 181103 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**310**	mg/Kg	2.00

Sample: 181104 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**652**	mg/Kg	2.00

Sample: 181105 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**274**	mg/Kg	2.00

Sample: 181106 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**341**	mg/Kg	2.00

Sample: 181107 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**692**	mg/Kg	2.00

Sample: 181108 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**470**	mg/Kg	2.00

Sample: 181109 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**368**	mg/Kg	2.00

Sample: 181110 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		**409**	mg/Kg	2.00

Sample: 181111 - AH-5 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**552**	mg/Kg	2.00

TRACEANALYSIS, INC.

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200 East Sunset Road Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway Suite 110 Ft Worth Texas 76132 817•201•5260
E-Mail lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: December 10, 2008

Work Order: 8120325

Project Location: Lea County, NM
Project Name: COG/Bonds #1 Tank Battery
Project Number: 115-6403637

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
181098	AH-1 0-1'	soil	2008-12-02	00:00	2008-12-03
181099	AH-1 1-1.5'	soil	2008-12-02	00:00	2008-12-03
181100	AH-1 2-2.5'	soil	2008-12-02	00:00	2008-12-03
181101	AH-1 2.5-3.0'	soil	2008-12-02	00:00	2008-12-03
181102	AH-2 0-1'	soil	2008-12-02	00:00	2008-12-03
181103	AH-2 1-1.5'	soil	2008-12-02	00:00	2008-12-03
181104	AH-3 0-1'	soil	2008-12-02	00:00	2008-12-03
181105	AH-3 1-1.5'	soil	2008-12-02	00:00	2008-12-03
181106	AH-3 2-2.5'	soil	2008-12-02	00:00	2008-12-03
181107	AH-4 0-1'	soil	2008-12-02	00:00	2008-12-03

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
181108	AH-4 1-1.5'	soil	2008-12-02	00:00	2008-12-03
181109	AH-4 2-2.5'	soil	2008-12-02	00:00	2008-12-03
181110	AH-5 0-1'	soil	2008-12-02	00:00	2008-12-03
181111	AH-5 1-1.5'	soil	2008-12-02	00:00	2008-12-03

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.

Dr. Blair Leftwich, Director

Standard Flags

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

Case Narrative

Samples for project COG/Bonds #1 Tank Battery were received by TraceAnalysis, Inc. on 2008-12-03 and assigned to work order 8120325. Samples for work order 8120325 were received intact at a temperature of 3.2 deg. C.

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

Test	Method
BTEX	S 8021B
Chloride (Titration)	SM 4500-Cl B
TPH DRO	Mod. 8015B
TPH GRO	S 8015B

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 8120325 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.

Analytical Report

Sample: 181098 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54915	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46913	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**780**		mg/Kg	50	2.00

Sample: 181098 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54883	Date Analyzed:	2008-12-04	Analyzed By:	LD
Prep Batch:	46895	Sample Preparation:	2008-12-04	Prepared By:	LD

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		**63.7**		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		122	mg/Kg	1	100	122	10 - 250.4

Sample: 181098 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54873	Date Analyzed:	2008-12-04	Analyzed By:	ME
Prep Batch:	46906	Sample Preparation:	2008-12-04	Prepared By:	ME

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		**1.97**		mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.991	mg/Kg	1	1.00	99	75 - 117.2
4-Bromofluorobenzene (4-BFB)		0.812	mg/Kg	1	1.00	81	56 - 142.8

Sample: 181099 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54915	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46913	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**801**	mg/Kg	50	2.00

Sample: 181100 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54915	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46913	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1060**	mg/Kg	50	2.00

Sample: 181101 - AH-1 2.5-3.0'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54915	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46913	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1220**	mg/Kg	50	2.00

Sample: 181102 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54871	Date Analyzed:	2008-12-04	Analyzed By:	ME
Prep Batch:	46906	Sample Preparation:	2008-12-04	Prepared By:	ME

Parameter	Flag	Result	RL Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100

continued ...

sample 181102 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.02	mg/Kg	1	1.00	102	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.04	mg/Kg	1	1.00	104	45.2 - 144.3

Sample: 181102 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54915	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46913	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1530**	mg/Kg	50	2.00

Sample: 181102 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54883	Date Analyzed:	2008-12-04	Analyzed By:	LD
Prep Batch:	46895	Sample Preparation:	2008-12-04	Prepared By:	LD

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**159**	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		103	mg/Kg	1	100	103	10 - 250.4

Sample: 181102 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54873	Date Analyzed:	2008-12-04	Analyzed By:	ME
Prep Batch:	46906	Sample Preparation:	2008-12-04	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**63.2**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.960	mg/Kg	1	1.00	96	75 - 117.2
4-Bromofluorobenzene (4-BFB)		1.01	mg/Kg	1	1.00	101	56 - 142.8

Sample: 181103 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54915	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46913	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**310**	mg/Kg	50	2.00

Sample: 181104 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54915	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46913	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**652**	mg/Kg	50	2.00

Sample: 181104 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54883	Date Analyzed:	2008-12-04	Analyzed By:	LD
Prep Batch:	46895	Sample Preparation:	2008-12-04	Prepared By:	LD

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		92.3	mg/Kg	1	100	92	10 - 250.4

Sample: 181104 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54873	Date Analyzed:	2008-12-04	Analyzed By:	ME
Prep Batch:	46906	Sample Preparation:	2008-12-04	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**13.8**	mg/Kg	2	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.60	mg/Kg	2	2.00	80	75 - 117.2
4-Bromofluorobenzene (4-BFB)		1.61	mg/Kg	2	2.00	80	56 - 142.8

Sample: 181105 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54915	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46913	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**274**	mg/Kg	50	2.00

Sample: 181106 - AH-3 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54915	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46913	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**341**	mg/Kg	50	2.00

Sample: 181107 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54871	Date Analyzed:	2008-12-04	Analyzed By:	ME
Prep Batch:	46906	Sample Preparation:	2008-12-04	Prepared By:	ME

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.0200		mg/Kg	2	0.0100
Toluene		**0.175**		mg/Kg	2	0.0100
Ethylbenzene		**0.366**		mg/Kg	2	0.0100
Xylene		**0.343**		mg/Kg	2	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.05	mg/Kg	2	2.00	102	49 - 129.7
4-Bromofluorobenzene (4-BFB)		2.15	mg/Kg	2	2.00	108	45.2 - 144.3

Sample: 181107 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54915	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46913	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**692**		mg/Kg	50	2.00

Sample: 181107 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54883	Date Analyzed:	2008-12-04	Analyzed By:	LD
Prep Batch:	46895	Sample Preparation:	2008-12-04	Prepared By:	LD

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		**135**		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		112	mg/Kg	1	100	112	10 - 250.4

Sample: 181107 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54873	Date Analyzed:	2008-12-04	Analyzed By:	ME
Prep Batch:	46906	Sample Preparation:	2008-12-04	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**88.0**	mg/Kg	2	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.74	mg/Kg	2	2.00	87	75 - 117.2
4-Bromofluorobenzene (4-BFB)		2.83	mg/Kg	2	2.00	142	56 - 142.8

Sample: 181108 - AH-4 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54916	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46914	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**470**	mg/Kg	50	2.00

Sample: 181109 - AH-4 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54916	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46914	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**368**	mg/Kg	50	2.00

Sample: 181110 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54916	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46914	Sample Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**409**		mg/Kg	50	2.00

Sample: 181110 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54902	Date Analyzed:	2008-12-08	Analyzed By:	LD
Prep Batch:	46928	Sample Preparation:	2008-12-08	Prepared By:	LD

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		159	mg/Kg	1	100	159	10 - 250.4

Sample: 181110 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54873	Date Analyzed:	2008-12-04	Analyzed By:	ME
Prep Batch:	46906	Sample Preparation:	2008-12-04	Prepared By:	ME

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		**4.30**		mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.803	mg/Kg	1	1.00	80	75 - 117.2
4-Bromofluorobenzene (4-BFB)		0.818	mg/Kg	1	1.00	82	56 - 142.8

Sample: 181111 - AH-5 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54916	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46914	Sample Preparation:	2008-12-05	Prepared By:	AR

continued ...

sample 181111 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**552**	mg/Kg	50	2.00

Method Blank (1) QC Batch: 54871

QC Batch: 54871 Date Analyzed: 2008-12-04 Analyzed By: ME
Prep Batch: 46906 QC Preparation: 2008-12-04 Prepared By: ME

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00800	mg/Kg	0.01
Toluene		<0.00800	mg/Kg	0.01
Ethylbenzene		<0.00820	mg/Kg	0.01
Xylene		<0.00960	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.00	mg/Kg	1	1.00	100	65.6 - 130.6
4-Bromofluorobenzene (4-BFB)		0.984	mg/Kg	1	1.00	98	51.9 - 128.1

Method Blank (1) QC Batch: 54873

QC Batch: 54873 Date Analyzed: 2008-12-04 Analyzed By: ME
Prep Batch: 46906 QC Preparation: 2008-12-04 Prepared By: ME

Parameter	Flag	MDL Result	Units	RL
GRO		0.774	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.822	mg/Kg	1	1.00	82	58.3 - 129.3
4-Bromofluorobenzene (4-BFB)		0.815	mg/Kg	1	1.00	82	57 - 124.9

Method Blank (1) QC Batch: 54883

QC Batch:	54883	Date Analyzed:	2008-12-04	Analyzed By:	LD
Prep Batch:	46895	QC Preparation:	2008-12-04	Prepared By:	LD

Parameter	Flag	MDL Result	Units	RL
DRO		<15.8	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		118	mg/Kg	1	100	118	30.9 - 146.4

Method Blank (1) QC Batch: 54902

QC Batch:	54902	Date Analyzed:	2008-12-08	Analyzed By:	LD
Prep Batch:	46928	QC Preparation:	2008-12-08	Prepared By:	LD

Parameter	Flag	MDL Result	Units	RL
DRO		<15.8	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		122	mg/Kg	1	100	122	30.9 - 146.4

Method Blank (1) QC Batch: 54915

QC Batch:	54915	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46913	QC Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.500	mg/Kg	2

Method Blank (1) QC Batch: 54916

QC Batch:	54916	Date Analyzed:	2008-12-08	Analyzed By:	AR
Prep Batch:	46914	QC Preparation:	2008-12-05	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.500	mg/Kg	2

Laboratory Control Spike (LCS-1)

QC Batch: 54871 | Date Analyzed: 2008-12-04 | Analyzed By: ME
Prep Batch: 46906 | QC Preparation: 2008-12-04 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.992	mg/Kg	1	1.00	<0.00800	99	72.7 - 129.8
Toluene	0.990	mg/Kg	1	1.00	<0.00800	99	71.6 - 129.6
Ethylbenzene	1.00	mg/Kg	1	1.00	<0.00820	100	70.8 - 129.7
Xylene	3.00	mg/Kg	1	3.00	<0.00960	100	70.9 - 129.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.954	mg/Kg	1	1.00	<0.00800	95	72.7 - 129.8	4	20
Toluene	0.956	mg/Kg	1	1.00	<0.00800	96	71.6 - 129.6	4	20
Ethylbenzene	0.970	mg/Kg	1	1.00	<0.00820	97	70.8 - 129.7	3	20
Xylene	2.91	mg/Kg	1	3.00	<0.00960	97	70.9 - 129.4	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.990	0.968	mg/Kg	1	1.00	99	97	65.9 - 132
4-Bromofluorobenzene (4-BFB)	0.995	0.993	mg/Kg	1	1.00	100	99	55.2 - 128.9

Laboratory Control Spike (LCS-1)

QC Batch: 54873 | Date Analyzed: 2008-12-04 | Analyzed By: ME
Prep Batch: 46906 | QC Preparation: 2008-12-04 | Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	7.35	mg/Kg	1	10.0	<0.171	74	70 - 130

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	7.38	mg/Kg	1	10.0	<0.171	74	70 - 130	8	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)	0.860	0.837	mg/Kg	1	1.00	86	84	70 - 130
4-Bromofluorobenzene (4-BFB)	0.855	0.843	mg/Kg	1	1.00	86	84	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 54883 | Date Analyzed: 2008-12-04 | Analyzed By: LD
Prep Batch: 46895 | QC Preparation: 2008-12-04 | Prepared By: LD

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	187	mg/Kg	1	250	<15.8	75	27.8 - 152.1

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	184	mg/Kg	1	250	<15.8	74	27.8 - 152.1	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	79.1	78.5	mg/Kg	1	100	79	78	38 - 130.4

Laboratory Control Spike (LCS-1)

QC Batch: 54902 | Date Analyzed: 2008-12-08 | Analyzed By: LD
Prep Batch: 46928 | QC Preparation: 2008-12-08 | Prepared By: LD

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	197	mg/Kg	1	250	<15.8	79	27.8 - 152.1

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	185	mg/Kg	1	250	<15.8	74	27.8 - 152.1	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-Triacontane	88.2	78.4	mg/Kg	1	100	88	78	38 - 130.4

Laboratory Control Spike (LCS-1)

QC Batch: 54915 | Date Analyzed: 2008-12-08 | Analyzed By: AR
Prep Batch: 46913 | QC Preparation: 2008-12-05 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.6	mg/Kg	1	100	<0.500	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	mg/Kg	1	100	<0.500	100	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: 54916 | Date Analyzed: 2008-12-08 | Analyzed By: AR
Prep Batch: 46914 | QC Preparation: 2008-12-05 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	102	mg/Kg	1	100	<0.500	102	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	101	mg/Kg	1	100	<0.500	101	85 - 115	1	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: 181128

QC Batch: 54871 | Date Analyzed: 2008-12-04 | Analyzed By: ME
Prep Batch: 46906 | QC Preparation: 2008-12-04 | Prepared By: ME

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	[1]	<0.00800	mg/Kg	1	1.00	<0.00800	0	58.6 - 165.2
Toluene	[2]	<0.00800	mg/Kg	1	1.00	<0.00800	0	64.2 - 153.8
Ethylbenzene	[3]	<0.00820	mg/Kg	1	1.00	<0.00820	0	61.6 - 159.4
Xylene	[4]	<0.00960	mg/Kg	1	3.00	<0.00960	0	64.4 - 155.3

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

continued ...

[1]SPECIAL-Prep error MS/MSD was not spiked. Use LCS/LCSD to demonstrate method under control. •
[2]SPECIAL-Prep error MS/MSD was not spiked. Use LCS/LCSD to demonstrate method under control. •
[3]SPECIAL-Prep error MS/MSD was not spiked. Use LCS/LCSD to demonstrate method under control. •
[4]SPECIAL-Prep error MS/MSD was not spiked. Use LCS/LCSD to demonstrate method under control. •

matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene [5]	<0.00800	mg/Kg	1	1.00	<0.00800	0	58.6 - 165.2	0	20
Toluene [6]	<0.00800	mg/Kg	1	1.00	<0.00800	0	64.2 - 153.8	0	20
Ethylbenzene [7]	<0.00820	mg/Kg	1	1.00	<0.00820	0	61.6 - 159.4	0	20
Xylene [8]	<0.00960	mg/Kg	1	3.00	<0.00960	0	64.4 - 155.3	0	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)	0.972	1.02	mg/Kg	1	1	97	102	76 - 127.9
4-Bromofluorobenzene (4-BFB)	0.986	1.01	mg/Kg	1	1	99	101	72 - 127.8

Matrix Spike (MS-1) Spiked Sample: 181104

QC Batch: 54873 | Date Analyzed: 2008-12-04 | Analyzed By: ME
Prep Batch: 46906 | QC Preparation: 2008-12-04 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	20.5	mg/Kg	2	20.0	<0.342	102	22.3 - 134.6

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	21.0	mg/Kg	2	20.0	<0.342	105	22.3 - 134.6	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.79	1.83	mg/Kg	2	2	90	92	68.4 - 113.1
4-Bromofluorobenzene (4-BFB)	1.72	1.66	mg/Kg	2	2	86	83	66.7 - 134.3

Matrix Spike (MS-1) Spiked Sample: 180690

QC Batch: 54883 | Date Analyzed: 2008-12-04 | Analyzed By: LD
Prep Batch: 46895 | QC Preparation: 2008-12-04 | Prepared By: LD

[5]SPECIAL-Prep error MS/MSD was not spiked. Use LCS/LCSD to demonstrate method under control. •
[6]SPECIAL-Prep error MS/MSD was not spiked. Use LCS/LCSD to demonstrate method under control. •
[7]SPECIAL-Prep error MS/MSD was not spiked. Use LCS/LCSD to demonstrate method under control. •
[8]SPECIAL-Prep error MS/MSD was not spiked. Use LCS/LCSD to demonstrate method under control. •

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	201	mg/Kg	1	250	<15.8	80	18 - 179.5

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	212	mg/Kg	1	250	<15.8	85	18 - 179.5	5	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-Triacontane	86.0	83.1	mg/Kg	1	100	86	83	34.1 - 158

Matrix Spike (MS-1) Spiked Sample: 181110

QC Batch: 54902 | Date Analyzed: 2008-12-08 | Analyzed By: LD
Prep Batch: 46928 | QC Preparation: 2008-12-08 | Prepared By: LD

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	146	mg/Kg	1	250	<15.8	58	18 - 179.5

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	136	mg/Kg	1	250	<15.8	54	18 - 179.5	7	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-Triacontane	97.7	96.2	mg/Kg	1	100	98	96	34.1 - 158

Matrix Spike (MS-1) Spiked Sample: 181107

QC Batch: 54915 | Date Analyzed: 2008-12-08 | Analyzed By: AR
Prep Batch: 46913 | QC Preparation: 2008-12-05 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5730	mg/Kg	50	5000	692	101	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5350	mg/Kg	50	5000	692	93	85 - 115	7	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: 181119

QC Batch: 54916 | Date Analyzed: 2008-12-08 | Analyzed By: AR
Prep Batch: 46914 | QC Preparation: 2008-12-05 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	4980	mg/Kg	50	5000	<25.0	100	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5120	mg/Kg	50	5000	<25.0	102	85 - 115	3	20

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

Standard (ICV-1)

QC Batch: 54871 | Date Analyzed: 2008-12-04 | Analyzed By: ME

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.104	104	85 - 115	2008-12-04
Toluene		mg/Kg	0.100	0.104	104	85 - 115	2008-12-04
Ethylbenzene		mg/Kg	0.100	0.105	105	85 - 115	2008-12-04
Xylene		mg/Kg	0.300	0.316	105	85 - 115	2008-12-04

Standard (CCV-1)

QC Batch: 54871 | Date Analyzed: 2008-12-04 | Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0986	99	85 - 115	2008-12-04
Toluene		mg/Kg	0.100	0.0969	97	85 - 115	2008-12-04
Ethylbenzene		mg/Kg	0.100	0.0956	96	85 - 115	2008-12-04
Xylene		mg/Kg	0.300	0.288	96	85 - 115	2008-12-04

Standard (ICV-1)

QC Batch: 54873 | Date Analyzed: 2008-12-04 | Analyzed By: ME

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.894	89	85 - 115	2008-12-04

Standard (CCV-1)

QC Batch: 54873 | Date Analyzed: 2008-12-04 | Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.878	88	85 - 115	2008-12-04

Standard (CCV-2)

QC Batch: 54883 | Date Analyzed: 2008-12-04 | Analyzed By: LD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	229	92	85 - 115	2008-12-04

Standard (CCV-3)

QC Batch: 54883 | Date Analyzed: 2008-12-04 | Analyzed By: LD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	223	89	85 - 115	2008-12-04

Standard (ICV-1)

QC Batch: 54902 | Date Analyzed: 2008-12-08 | Analyzed By: LD

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	214	86	85 - 115	2008-12-08

Standard (CCV-1)

QC Batch: 54902 | Date Analyzed: 2008-12-08 | Analyzed By: LD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	223	89	85 - 115	2008-12-08

Standard (ICV-1)

QC Batch: 54915 | Date Analyzed: 2008-12-08 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.8	99	85 - 115	2008-12-08

Standard (CCV-1)

QC Batch: 54915 | Date Analyzed: 2008-12-08 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2008-12-08

Standard (ICV-1)

QC Batch: 54916 | Date Analyzed: 2008-12-08 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2008-12-08

Standard (CCV-1)

QC Batch: 54916 | Date Analyzed: 2008-12-08 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2008-12-08

012525

Analysis Request of Chain of Custody Record

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 115-640 3637

PROJECT NAME: COG/ Bonds #1 Tank Battery Lea County, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
181098	12/2/08		S		X	AH-1 0-1'	1				X	
099			S		X	AH-1 1'-1.5'	1				X	
100			S		X	AH-1 2'-2.5'	1				X	
101			S		X	AH-1 2.5'-3.0'	1				X	
102			S		X	AH-2 0-1'	1				X	
103			S		X	AH-2 1'-1.5'	1				X	
104			S		X	AH-3 0-1'	1				X	
105			S		X	AH-3 1'-1.5'	1				X	
106			S		X	AH-3 2'-2.5'	1				X	
107	↓		S		X	AH-4 0-1'	1				X	

ANALYSIS REQUEST	BTEX 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	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	X	X											X				

RELINQUISHED BY: (Signature) — Date: 12/3/08 Time: 12:30
RECEIVED BY: (Signature) Lindsey — Date: 12-3-08 Time: 12:50
SAMPLED BY: (Print & Initial) Ray Taylor & Robert Grubbs — Date: 12/3/08 Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 32

REMARKS: If TPH Exceeds 1,000 mg/kg run deeper Interval, Run 2 DTEX on Highest TPH's

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

All tests Midland

01L0525

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 2

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

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 115-640 3637

PROJECT NAME: COG/Bonds #1 Tank Battery

Lea County, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD.	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	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
181108	12/2/08		S		X	AH-4 1'-1.5'	1				X															X				
109	12/2/08		S		X	AH-4 2'-2.5'	1				X															X				
110	12/2/08		S		X	AH-5 0-1'	1				X			X												X				
111	12/2/08		S		X	AH-5 1'-1.5'	1				X															X				

ANALYSIS REQUEST
(Circle or Specify Method No.)

RELINQUISHED BY: (Signature) — Date: 12/3/08 Time: 12:30
RECEIVED BY: (Signature) Lindsey Welch — Date: 12-3-08 Time: 12:30
SAMPLED BY: (Print & Initial) Max Tavarez & Robert Grubbs — Date: 12/3/08 Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.2

REMARKS: All tests Midland

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

APPENDIX C

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

State of New Mexico
Energy Minerals and Natural Resources

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

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 Kanicia Carrillo
Address 550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No. 432-685-4332
Facility Name – Bonds #1	Facility Type- PRODUCTION

Surface Owner BLM	Mineral Owner	Lease No.API# 30-025-25275

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	20	9S	35E	1650	North	330	East	Lea ~~Eddy~~

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release-Produced water	Volume of Release-45bbls	Volume Recovered- 40bbls
Source of Release-Kill switch malfunction	Date and Hour of Occurrence- 10/30/08- 5:00am	Date and Hour of Discovery 10/30/08-9:30 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Larry Johnson	
By Whom? Kanicia Carrillo	Date and Hour October 30,2008, 2:18 am.	
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.*
The kill switch on the water tank did not operate properly causing the overflow. We replaced a headswitch and reset the lease kill to shut pumping unit down when tank gauge gets to 12'.

Describe Area Affected and Cleanup Action Taken.*
All the fluids were contained within the firewall, estimated footage of 30' x 50'. Vacuum truck is onsite to pickup water. Soil samples and final report will be submitted by Tetra Tech.

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: Kanicia Carrillo	Approved by District Supervisor:
Title: Regulatory Analyst	Approval Date: / Expiration Date:
E-mail Address: kandicarrillo@conchoresources.com	Conditions of Approval: / Attached ☐
Date: 10/31/08 Phone: 432-685-4332	

Attach Additional Sheets If Necessary

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

State of New Mexico
Energy Minerals and Natural Resources

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

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 1300 Midland, TX 79701*	Telephone No. *432-686-3023*
Facility Name *Bonds #1*	Facility Type *Production*

Surface Owner *BLM*	Mineral Owner	Lease No. API# 30-025-25275

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	*20*	*9S*	*35E*	*1650*	*North*	*330*	*East*	*Lea*

Latitude 33 deg. 31.333' **Longitude** 103 deg. 22.513'

NATURE OF RELEASE

Type of Release *Produced Water*	Volume of Release *45 BW*	Volume Recovered *40 BW*
Source of Release *Kill switch malfunction*	Date and Hour of Occurrence *10/30/08 5:00 AM*	Date and Hour of Discovery *10/30/08 9:30 AM*
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? *Larry Johnson w/NMOCD*	
By Whom? *Kanicia Carrillo*	Date and Hour *10/30/08 2:18 PM*	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

WATER @ 150'

Describe Cause of Problem and Remedial Action Taken.*
Cause: The kill switch on the water tank did not operate properly causing the overflow.
Remedial Action: Replaced the headswitch and reset the lease kill to shut pumping unit down when tank gauge gets to 12 ft.

Describe Area Affected and Cleanup Action Taken.* *Spill Area: 30' x 50' in area, 45 bbls of produced water spilled, all contained within firewall. Picked up 40 bbls with vacuum truck = Net Loss 5 bbls. of water. Tetra Tech delineated and sampled spill site. All TPH and BTEX sample results below regulatory limits and chlorides delineated to 381 mg/kg at depth of 4 ft.*

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez (agent for COG)	Approved by ~~District Supervisor:~~ ENV ENGINEER Jeoffrey Loking	
Title: Project Manager	Approval Date: 10/05/09	Expiration Date: —
E-mail Address: ike.tavarez@tetratech.com	Conditions of Approval:	Attached ☐ IRP-2008
Date: 8/13/2009 Phone: 432-682-4559		

* Attach Additional Sheets If Necessary

FGRL0927855786