TETRA TECH

MAY - 5 2009

April 9, 2009

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

Re: Assessment Report and Closure Request for the St. Mary Land & Exploration Company, Geronimo Federal Injection Station, Unit F, Section 24, Township 18 South, Range 31 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. was contacted by St. Mary Land & Exploration Company (St. Mary) to assess a spill from the Geronimo Federal Injection Station, located in Unit F, Section 24, Township 18 South, Range 31 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32° 44.023', W 103° 49.314'. 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 8, 2008. Approximately 200 barrels of produced water and 8 barrels of oil were released, when during a thunder storm, electrical power was lost to the injection pump, causing the tanks to overfill. The spill was contained inside the facility berm. A vacuum truck was utilized to recover a total of 258 barrels of oil, produced water and rainwater. The initial C-141 is enclosed in Appendix A.

Groundwater

Regional groundwater data from various sources indicate the depth to water in this region to average approximately 300' below ground surface. Copies of the groundwater depth information found for this site is included in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene,

Tetra Tech
1910 North Big Spring, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

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 Results

On September 16, 2008, Tetra Tech personnel inspected and sampled the spill area. 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 inside the facility berm. 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 samples analyzed were below the RRAL for both BTEX and TPH. Chloride concentrations were defined in auger holes AH-4 and AH-5 and were confined to the first 1.0'. Chloride concentrations significantly decreased in AH-1 below 1.0' to less than 1000 mg/kg. Chloride impact in AH-1 and AH-2 were not defined. On October 29, 2009, two soil borings were installed to define the impacts in these areas. BH-1, placed between AH-2 and AH-3 showed impact to be primarily limited to the first 1.0'. BH-2, placed between AH-1 and AH-2, showed chloride concentrations declining below 250 mg/kg at 10'-11'. All sampling results are summarized in Table 1. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The spill area and the auger hole locations are shown on Figure 3.

Soil Remediation

Based upon the recommendations discussed with the NMOCD on February 19, 2009, the areas of impact were excavated to depths ranging from 1.0' to 5.0', as shown on the attached Figure 4.

Closure Request

Based upon the remedial work performed and the results of the assessment, St. Mary Land & Exploration Company requests closure of this site. A copy of the Final C-141 is included in Appendix A. If you require any additional information or have any questions or comments concerning this report, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH, Inc.

Tim Reed

Tim Reed, P.G.
Sr. Project Manager

cc: Tom Morrow – St. Mary Land
Don Riggs – St. Mary Land
Jim Amos - BLM

FIGURES

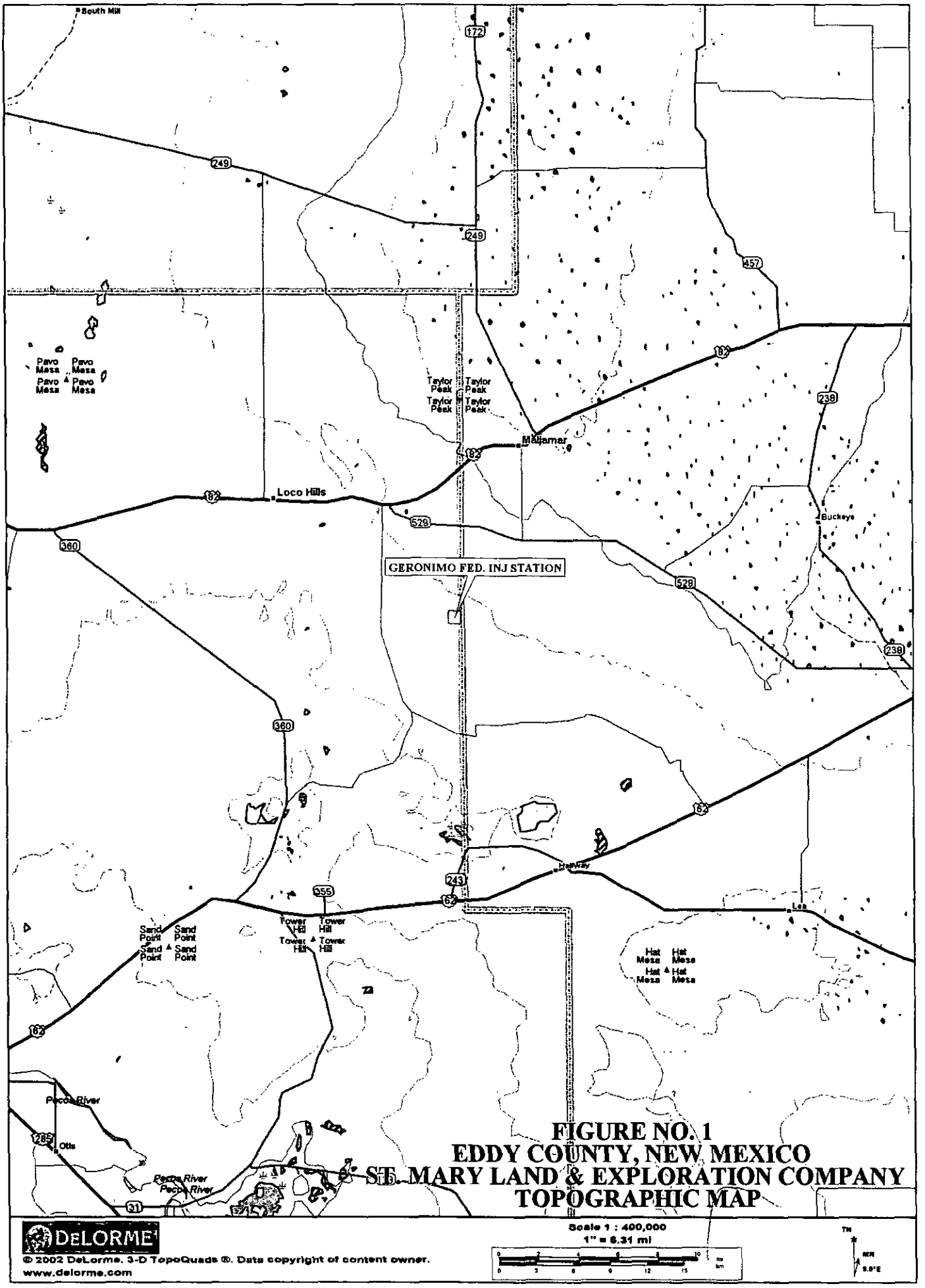


FIGURE NO. 1
EDDY COUNTY, NEW MEXICO
ST. MARY LAND & EXPLORATION COMPANY
TOPOGRAPHIC MAP

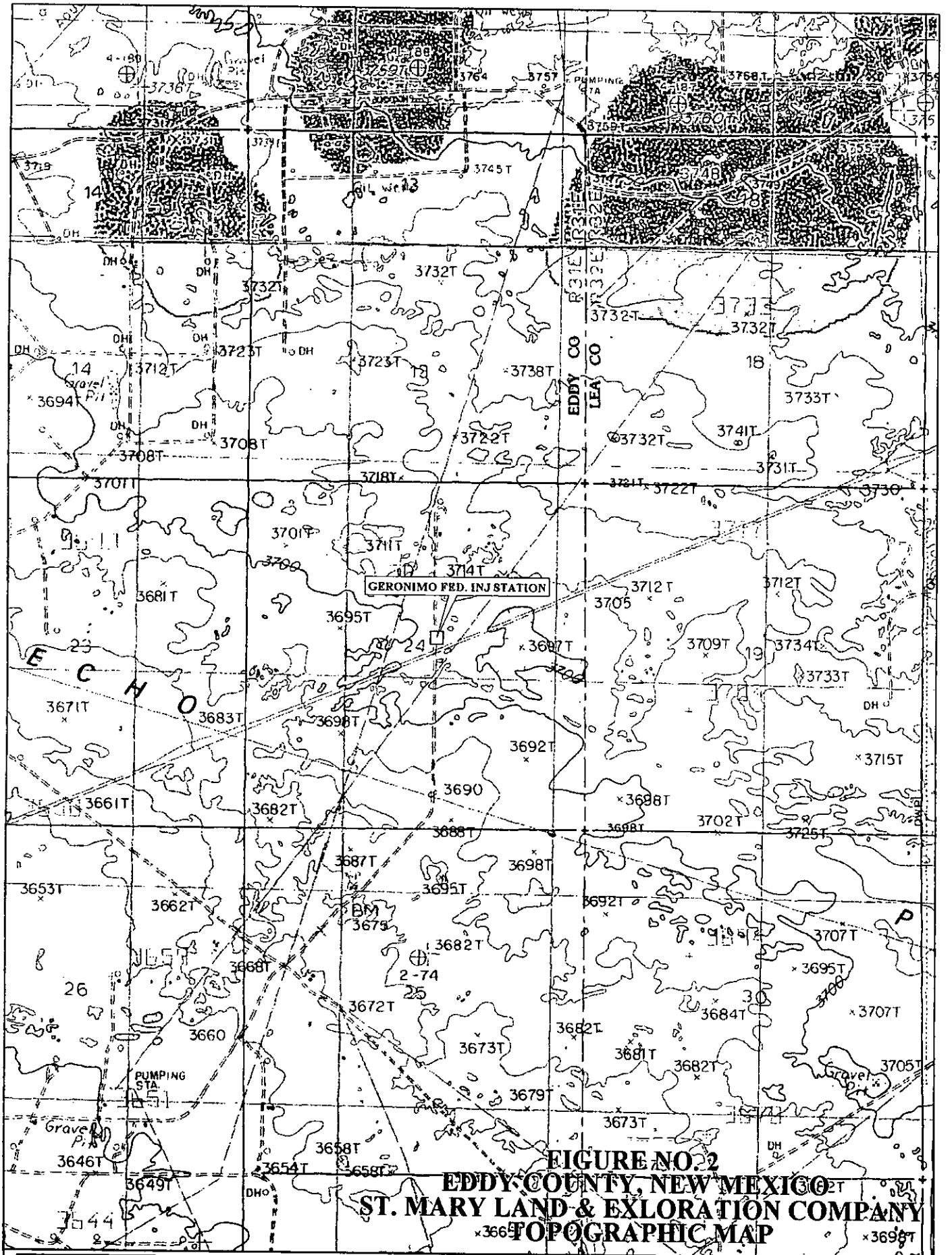
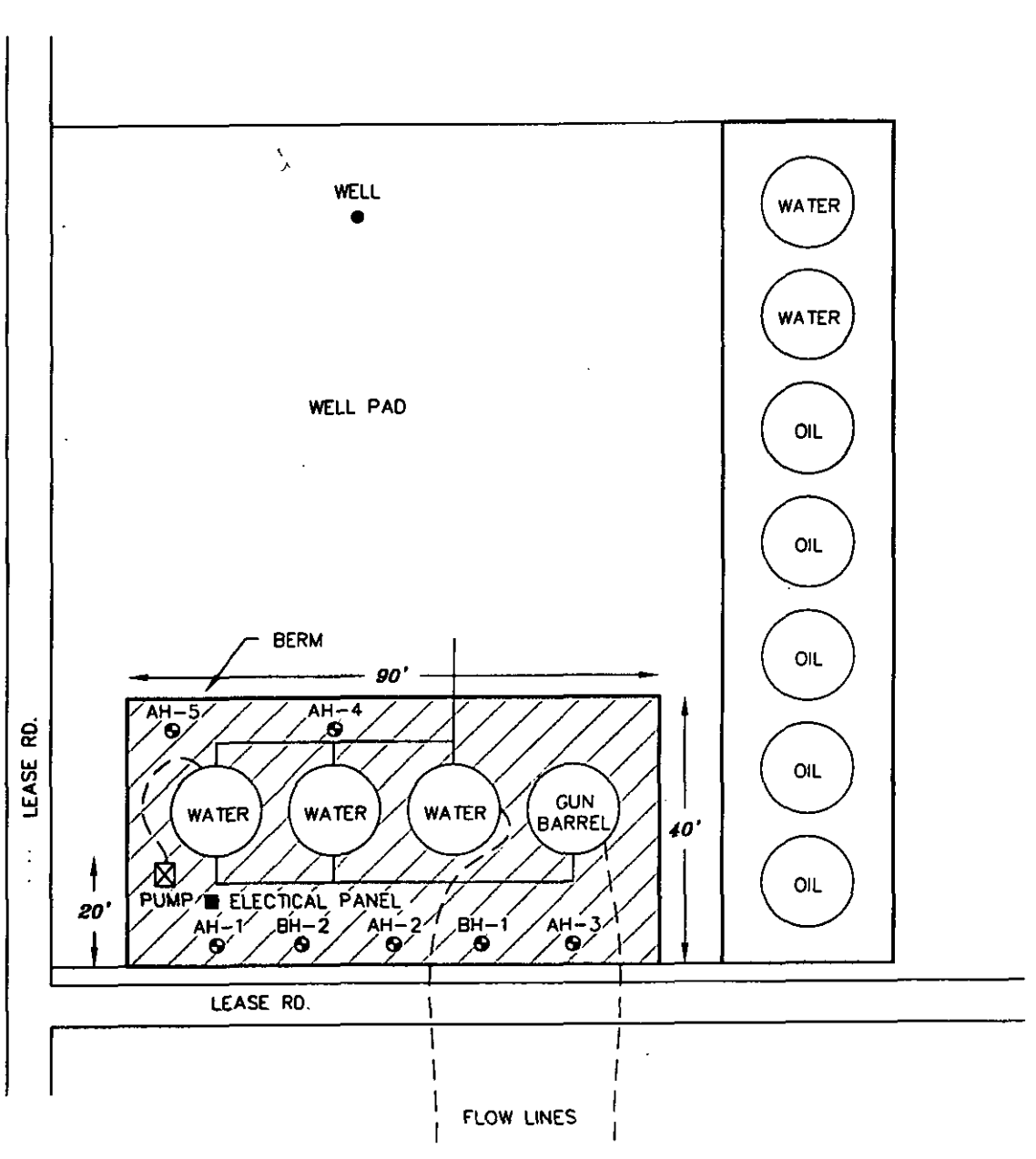


FIGURE NO. 2
EDDY COUNTY, NEW MEXICO
ST. MARY LAND & EXLORATION COMPANY
TOPOGRAPHIC MAP



SPILL AREA
AUGER HOLE
BORE HOLE

NOT TO SCALE

FIGURE NO. 3

EDDY COUNTY, NEW MEXICO

ST. MARY LAND & EXPLORATION COMPANY

GERONIMO FED. INJ STATION

DATE: 12/12/08
DWN. BY: JJ
FILE: N:\ST. MARY\3563 GERONIMO FED INJ STA

TETRA TECH, INC.
MIDLAND, TEXAS

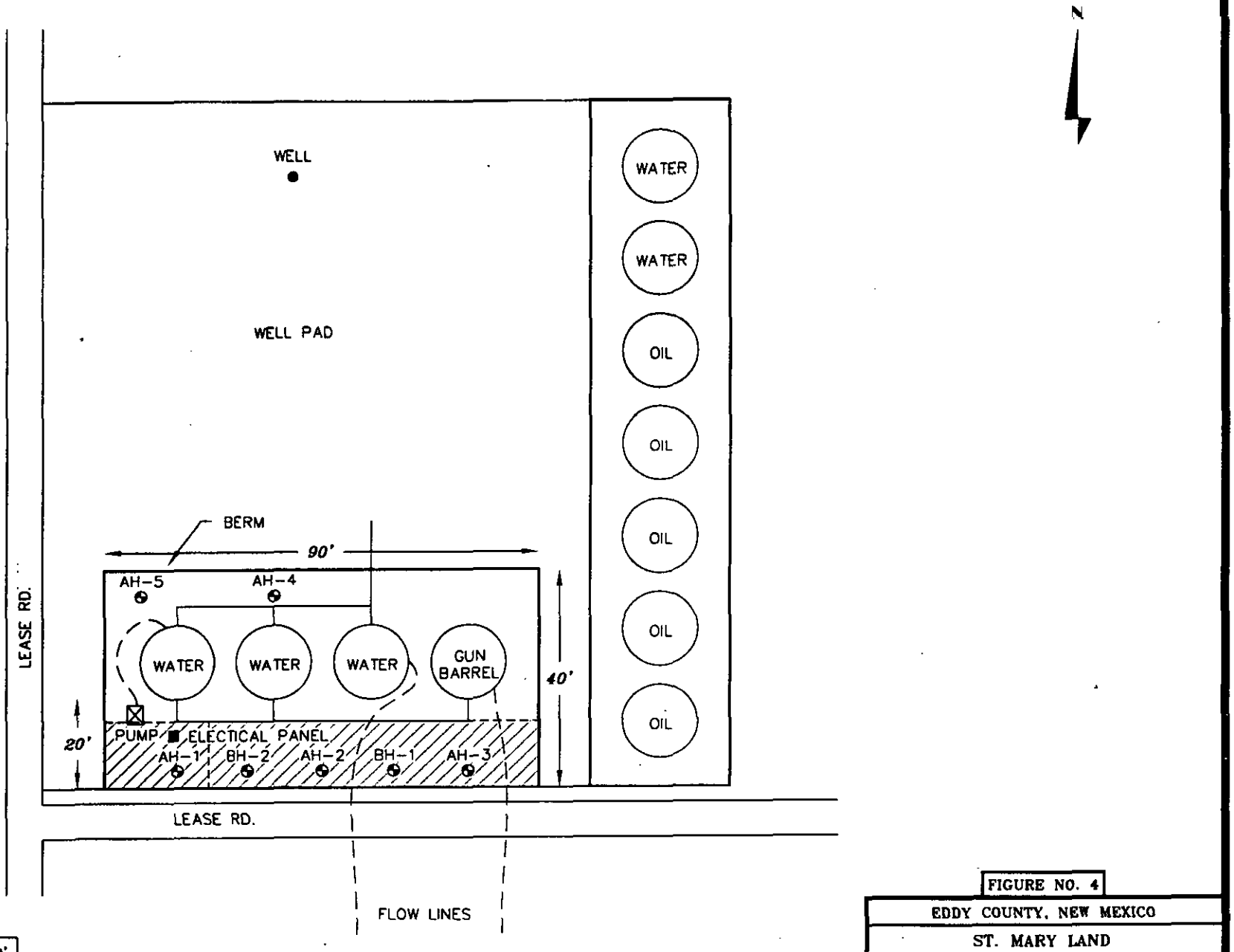


FIGURE NO. 4

EDDY COUNTY, NEW MEXICO

ST. MARY LAND & EXPLORATION COMPANY

GERONIMO FED. INJ STATION

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 4/15/09
DWN. BY: JJ
FILE: H:\ST. MARY_3583 GERONIMO FED INJ STA

TABLE

Table 1
St. Mary Land & Exploration
Geronimo Federal Injection Station
Eddy 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	9/16/2008	0-1		X	<50.0	1.04	1.04	-	-	-	-	650
		1-1.5		X	-	-	-	-	-	-	-	<100
		2-2.5		X	-	-	-	-	-	-	-	313
		3-3.5		X	-	-	-	-	-	-	-	10,200
		3.5-4.0		X	-	-	-	-	-	-	-	11,200
AH-2	9/16/2008	0-1		X	<50.0	<1.00	<50.0	-	-	-	-	1,860
		1-1.5	X		-	-	-	-	-	-	-	635
		2-2.5	X		-	-	-	-	-	-	-	842
		3-3.5	X		-	-	-	-	-	-	-	9,400
AH-3	9/16/2008	0-1	X		74.2	16.4	90.6	<0.0100	<0.0100	<0.0100	0.0882	4,020
		1-1.5	X		-	-	-	-	-	-	-	531
		2-2.5	X		-	-	-	-	-	-	-	588
		3-3.5	X		-	-	-	-	-	-	-	964
AH-4	9/16/2008	0-1	X		<50.0	4.96	4.96	<0.0100	<0.0100	<0.0100	<0.0100	2,820
		1-1.5	X		-	-	-	-	-	-	-	268
		2-2.5	X		-	-	-	-	-	-	-	216
		3-3.5	X		-	-	-	-	-	-	-	<100
AH-5	9/16/2008	0-1	X		<50.0	1.34	1.34	<0.0100	<0.0100	<0.0100	<0.0100	1,920
		1-1.5	X		-	-	-	-	-	-	-	<100
		2-2.5	X		-	-	-	-	-	-	-	227
		3-3.5	X		-	-	-	-	-	-	-	<100
BH-1	10/29/2008	0-1		X	-	-	-	-	-	-	-	5,110
		2-3	X		-	-	-	-	-	-	-	374
		4-5	X		-	-	-	-	-	-	-	118
		6-7	X		-	-	-	-	-	-	-	219
		8-9	X		-	-	-	-	-	-	-	599
		10-11	X		-	-	-	-	-	-	-	160
		12-13	X		-	-	-	-	-	-	-	150
BH-2	10/29/2008	0-1		X	-	-	-	-	-	-	-	9,660
		2-3	X		-	-	-	-	-	-	-	513
		4-5	X		-	-	-	-	-	-	-	5,780
		6-7	X		-	-	-	-	-	-	-	1,150
		8-9	X		-	-	-	-	-	-	-	610
		10-11	X		-	-	-	-	-	-	-	<100
		12-13	X		-	-	-	-	-	-	-	<100

(-) Not Analyzed

APPENDIX A
NMOCD FORM C-141

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 St Mary Land & Exploration Co.	Contact Tom Morrow
Address 3300 N. A Street, Bldg #7 Suite 200 Midland, Texas 79705	Telephone No. (432) 688-1773
Facility Name Geronimo Federal Injection Station	Facility Type Injection Station

Surface Owner Federal	Mineral Owner Federal	Lease No. API #

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	24	18S	31E					Eddy

Latitude 32.73376 **Longitude** 103.82179

NATURE OF RELEASE

Type of Release Oil and Produced Water	Volume of Release 200 bbls	Volume Recovered 258 bbls
Source of Release Overfilled water tanks	Date and Hour of Occurrence 9/8/08 4:00 AM	Date and Hour of Discovery 9/8/08 4:00AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher	
By Whom? Bill Hearne	Date and Hour 9/8/08 12:25 P.M.	
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.*
During a thunder storm electrical power was lost to the injection pump, causing the tanks to overfill. Used vacuum trucks to pickup standing fluids inside berm Will contact Highlander(Tetra Tech) to assess the release area.

Describe Area Affected and Cleanup Action Taken.*
The fluids from the release were contained inside the facility berm. There was 8 bbls of oil and 250 bbls of produced and rain water picked up with vacuum trucks. Any necessary actions will be taken.

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: IKE Tavarez	Approved by District Supervisor:
Title: Geologist	Approval Date: / Expiration Date:
E-mail Address: IKE.Tavarez@Tetratech.com	Conditions of Approval: / Attached ☐
Date: 9-9-08 Phone: (432) 682-4559	

* 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
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Revised October 10, 2003

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Release Notification and Corrective Action

OPERATOR

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By Whom? Bill Hearne	Date and Hour 9/8/08 12:25 P.M.	
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Describe Area Affected and Cleanup Action Taken.*
The fluids from the release were contained inside the facility berm. There was 8 bbls of oil and 250 bbls of produced and rain water picked up with vacuum trucks. A site assessment was completed and the areas of impact were excavated accordingly to depths ranging from 1.0' to 5.0'.

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: Tim Reed	OIL CONSERVATION DIVISION
Printed Name: Tim Reed	Approved by District Supervisor:
Title: Senior Project Manager	Approval Date: / Expiration Date:
E-mail Address: timothy.reed@tetratech.com	Conditions of Approval: / Attached ☐
Date: 04/29/09 Phone: (432) 682-4559	

* Attach Additional Sheets If Necessary

APPENDIX B
GROUNDWATER DATA

Water Well Data
Average Depth to Groundwater (ft)
St. Mary Land & Exploration company
Geronimo Federal TB

17 South 30 East

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

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

17 South 32 East

6	5	4 **82**	3 **175**	2 **60**	1 **225**
7	8	9	10	11 **70** **88**	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 30 East

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

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 **400**
18	17	16	15	14 **317**	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 **261**	36

18 South 32 East

6	5	4 **65**	3	2	1
7 **460** **82**	8	9	10	11	12
18	17	16 **84**	15	14	13
19	20 **164**	21	22 **429**	23	24
30	29	28	27	26	25
31	32	33	34 **117**	35	36

19 South 30 East

	5	4	3	2	1
	8	9	10	11	12
	17	16	15	14	13
	20	21	22	23	24
	29	28	27	26	25
90	32	33	34	35	36

19 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 **180**	27	26	25
31	32	33 **101**	34	35	36 **130**

19 South 32 East

6	5	4	3	2	1
7	8 **365**	9	10	11	12
18	17	16	15	14	13
19 **102**	20 **345**	21	22	23	24
30	29	28	27	26	25
31	32	33	34 **250**	35	36

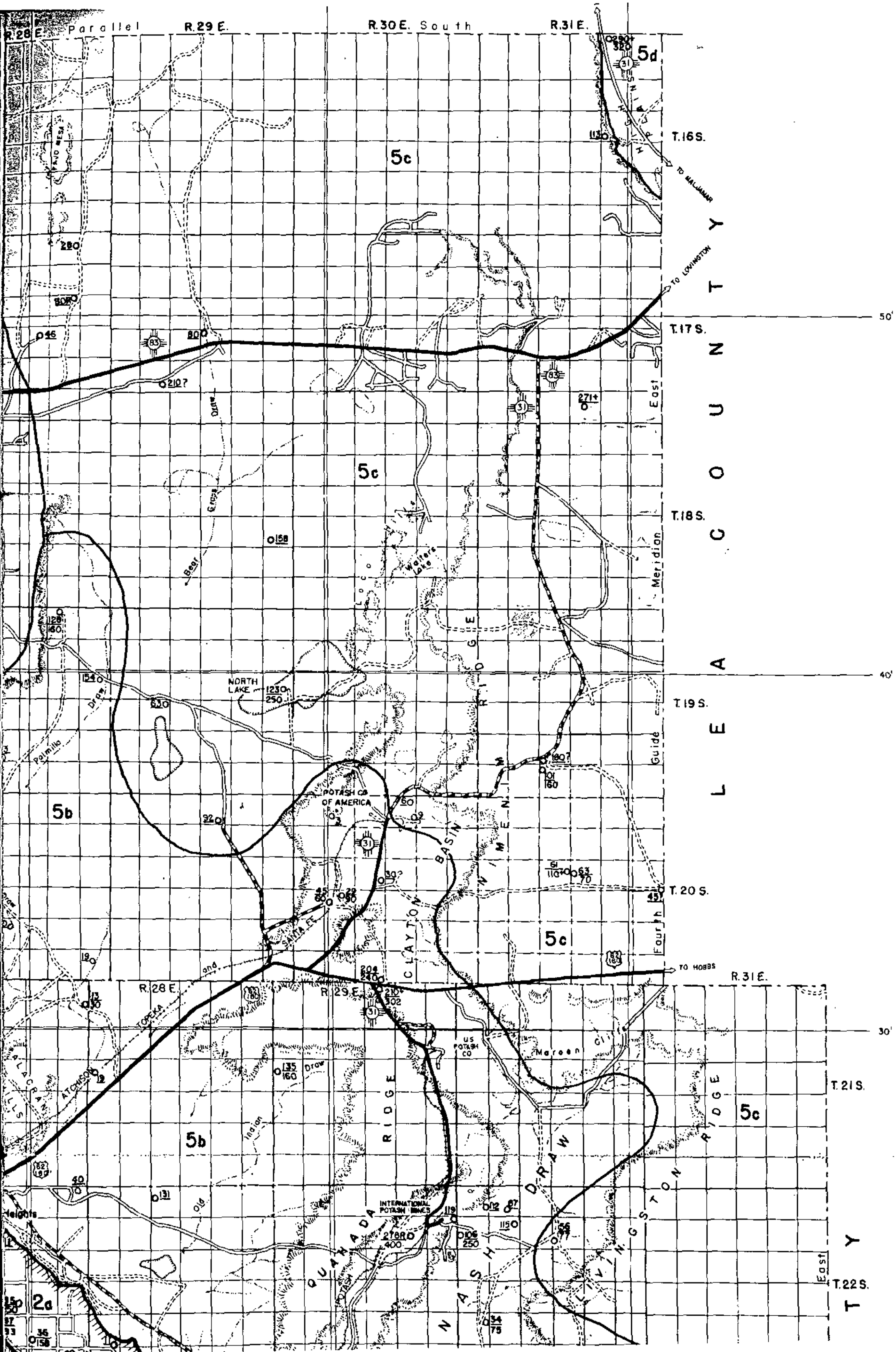
88 New Mexico State Engineers Well Reports

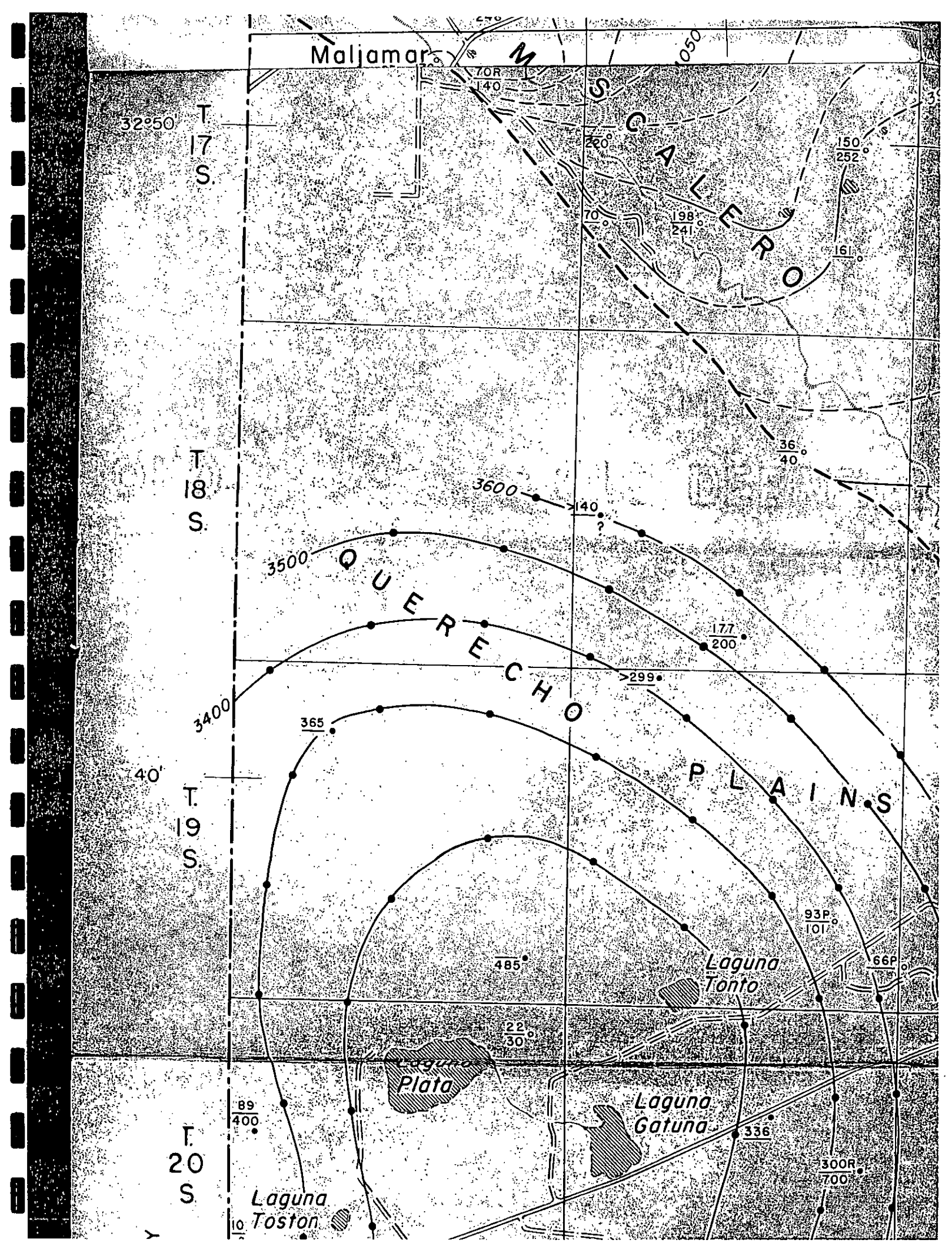
105 USGS Well Reports

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


R.28 E. Parallel
R.29 E.
R.30 E. South
R.31 E.
5d
5c
T.16 S.
TO MALJAMAR
TO LOVINGTON
T.17 S.
50'
PAJO MESA
280
46
210?
80
83
271+
31
East
Bear Grass Draw
158
T.18 S.
Meridian
Loco Hills
Walters Lake
RIDGE
NORTH LAKE
123
250
154
Palmilla Draw
T.19 S.
40'
Guide
LEA COUNTY
POTASH CO. OF AMERICA
5b
180?
101
160
BASIN
NIMENIM
CLAYTON
SANTA FE
T. 20 S.
Fourth
5c
TO HOBBS
R.31 E.
R.28 E.
R.29 E.
204
240
210
302
TOPEKA
ATCHISON
and
US POTASH CO
Maroon Cliffs
30'
135
160
Draw
T. 21 S.
ALACRAN HILLS
5b
Indian
RIDGE
5c
NASH DRAW
LIVINGSTON RIDGE
Old
INTERNATIONAL POTASH MINES
119
278R
400
106
250
115
QUAHADA
Heights
T.22 S.
2a
36
158
34
75


Maljamar
MESCALERO
QUERECHO PLAINS
Laguna Tonto
Laguna Plata
Laguna Gatuna
Laguna Toston
32°50'
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
40'
3600
3500
3400
1050
70R/140
220°
150/252°
70°
198/241°
161°
36/40°
>140
?
177/200
>299
365
485
93P/101°
66P°
22/30°
89/400
336
300R/700
10

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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

Agency code = usgs
site_no list = • 324519103474501
Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 324519103474501 18S.32E.07.44233

Lea County, New Mexico
Latitude 32°45'24",
Longitude 103°47'55" NAD27
Land-surface elevation
3,759.00 feet above sea level
NGVD29
This well is completed in the ALLUVIUM,BOLSON DEPOSITS AND OTHER SURFACE DEPOSITS (110AVMB) local aquifer.

Output formats

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

		Water level,	

Date	Time	feet below land surface	Status
1976-05-26		80.80	
1981-03-12		82.19	
1986-03-25		81.50	
1991-05-14		82.47	
1996-01-30		82.35	

Questions about sites/data?
Feedback on this web site

Top
Explanation of terms
Subscribe to NWISWeb notifications

Automated retrievals

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: 2008-12-09 17:59:34 EST
1.3 1.3 nadww01

National Water Information System: Web Interface

USGS Water Resources

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

News: Recent changes

Ground-water levels for New Mexico

Search Results -- 1 sites found

Search Criteria

Agency code = usgs
site_no list = • 324458103454301
Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 324458103454301 18S.32E.16.22433

Lea County, New Mexico
Latitude 32°45'05",
Longitude 103°45'51" NAD27
Land-surface elevation
3,796.00 feet above sea level
NGVD29
The depth of the well is 100 feet below land surface.
This well is completed in the ALLUVIUM,BOLSON DEPOSITS AND OTHER SURFACE DEPOSITS (110AVMB) local aquifer.

Output formats

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

Date	Time	Water level, feet below land surface	Status
1968-03-18		84.18	

Questions about sites/data?
Feedback on this web site

Top
Explanation of terms
Subscribe to NWISWeb notifications

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: 2008-12-09 18:07:32 EST
1.32 1.31 nadww01

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 18S Range: 32E Sections:

NAD27 X: Y: Zone: ☐ Search Radius:

County: ☐ Basin: ☐ Number: Suffix:

Owner Name: (First) (Last) ○Non-Domestic ○Domestic ◉All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 12/09/2008

								(Depth Water in Feet)		
Bsn	**Tws**	**Rng**	**Sec**	**Zone**	**X**	**Y**	**Wells**	**Min**	**Max**	**Avg**
CP	18S	32E	04				1	65	65	65
CP	18S	32E	07				1	460	460	460

Record Count: 2

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 19S Range: 32E Sections:

NAD27 X: Y: Zone: ☐ Search Radius:

County: ☐ Basin: ☐ Number: Suffix:

Owner Name: (First) (Last) ○Non-Domestic ○Domestic ◉All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 12/09/2008

(Depth Water in Feet)

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
CP	19S	32E	19				1	102	102	102
CP	19S	32E	20				1	345	345	345

Record Count: 2

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 19S Range: 31E Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) ○Non-Domestic ○Domestic ◉All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

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AVERAGE DEPTH OF WATER REPORT 12/09/2008

							(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
CP	19S	31E	36				1	130	130	130

Record Count: 1

APPENDIX C
SUMMARY REPORT
September 22, 2008

Summary Report

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

Report Date: September 22, 2008

Work Order: 8091729

Project Location: Eddy Co., NM
Project Name: St. Mary/Geronimo Federal Inj. Station
Project Number: 115-6403593

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
173691	AH-1 0-1'	soil	2008-09-16	00:00	2008-09-17
173692	AH-1 1'-1.5'	soil	2008-09-16	00:00	2008-09-17
173693	AH-1 2'-2.5'	soil	2008-09-16	00:00	2008-09-17
173694	AH-1 3'-3.5'	soil	2008-09-16	00:00	2008-09-17
173695	AH-1 3.5'-4.0'	soil	2008-09-16	00:00	2008-09-17
173696	AH-2 0-1'	soil	2008-09-16	00:00	2008-09-17
173697	AH-2 1'-1.5'	soil	2008-09-16	00:00	2008-09-17
173698	AH-2 2'-2.5'	soil	2008-09-16	00:00	2008-09-17
173699	AH-2 3'-3.5'	soil	2008-09-16	00:00	2008-09-17
173700	AH-3 0-1'	soil	2008-09-16	00:00	2008-09-17
173701	AH-3 1'-1.5'	soil	2008-09-16	00:00	2008-09-17
173702	AH-3 2'-2.5'	soil	2008-09-16	00:00	2008-09-17
173703	AH-3 3'-3.5'	soil	2008-09-16	00:00	2008-09-17
173704	AH-4 0-1'	soil	2008-09-16	00:00	2008-09-17
173705	AH-4 1'-1.5'	soil	2008-09-16	00:00	2008-09-17
173706	AH-4 2'-2.5'	soil	2008-09-16	00:00	2008-09-17
173707	AH-4 3'-3.5'	soil	2008-09-16	00:00	2008-09-17
173708	AH-5 0-1'	soil	2008-09-16	00:00	2008-09-17
173709	AH-5 1'-1.5'	soil	2008-09-16	00:00	2008-09-17
173710	AH-5 2'-2.5	soil	2008-09-16	00:00	2008-09-17
173711	AH-5 3'-3.5'	soil	2008-09-16	00:00	2008-09-17

Sample - Field Code	BTEX Benzene (mg/Kg)	BTEX Toluene (mg/Kg)	BTEX Ethylbenzene (mg/Kg)	BTEX Xylene (mg/Kg)	TPH DRO DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
173691 - AH-1 0-1'					<50.0	**1.04**
173696 - AH-2 0-1'					<50.0	<1.00
173700 - AH-3 0-1'	<0.0100	<0.0100	<0.0100	**0.0882**	**74.2**	**16.4**
173704 - AH-4 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	**4.96**

continued ...

... continued

	BTEX				TPH DRO	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
173708 - AH-5 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	**1.34**

Sample: 173691 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**650**	mg/Kg	2.00

Sample: 173692 - AH-1 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

Sample: 173693 - AH-1 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**313**	mg/Kg	2.00

Sample: 173694 - AH-1 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		**10200**	mg/Kg	2.00

Sample: 173695 - AH-1 3.5'-4.0'

Param	Flag	Result	Units	RL
Chloride		**11200**	mg/Kg	2.00

Sample: 173696 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**1860**	mg/Kg	2.00

Sample: 173697 - AH-2 1'-1.5'

continued ...

sample 173697 continued ...

Param	Flag	Result	Units	RL

Param	Flag	Result	Units	RL
Chloride		**635**	mg/Kg	2.00

Sample: 173698 - AH-2 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**842**	mg/Kg	2.00

Sample: 173699 - AH-2 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		**9400**	mg/Kg	2.00

Sample: 173700 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**4020**	mg/Kg	2.00

Sample: 173701 - AH-3 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**531**	mg/Kg	2.00

Sample: 173702 - AH-3 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**588**	mg/Kg	2.00

Sample: 173703 - AH-3 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		**964**	mg/Kg	2.00

Sample: 173704 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**2820**	mg/Kg	2.00

Sample: 173705 - AH-4 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**268**	mg/Kg	2.00

Sample: 173706 - AH-4 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**216**	mg/Kg	2.00

Sample: 173707 - AH-4 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

Sample: 173708 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		**1920**	mg/Kg	2.00

Sample: 173709 - AH-5 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

Sample: 173710 - AH-5 2'-2.5

Param	Flag	Result	Units	RL
Chloride		**227**	mg/Kg	2.00

Sample: 173711 - AH-5 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

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
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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: September 22, 2008

Work Order: 8091729

Project Location: Eddy Co., NM
Project Name: St. Mary/Geronimo Federal Inj. Station
Project Number: 115-6403593

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
173691	AH-1 0-1'	soil	2008-09-16	00:00	2008-09-17
173692	AH-1 1'-1.5'	soil	2008-09-16	00:00	2008-09-17
173693	AH-1 2'-2.5'	soil	2008-09-16	00:00	2008-09-17
173694	AH-1 3'-3.5'	soil	2008-09-16	00:00	2008-09-17
173695	AH-1 3.5'-4.0'	soil	2008-09-16	00:00	2008-09-17
173696	AH-2 0-1'	soil	2008-09-16	00:00	2008-09-17

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
173697	AH-2 1'-1.5'	soil	2008-09-16	00:00	2008-09-17
173698	AH-2 2'-2.5'	soil	2008-09-16	00:00	2008-09-17
173699	AH-2 3'-3.5'	soil	2008-09-16	00:00	2008-09-17
173700	AH-3 0-1'	soil	2008-09-16	00:00	2008-09-17
173701	AH-3 1'-1.5'	soil	2008-09-16	00:00	2008-09-17
173702	AH-3 2'-2.5'	soil	2008-09-16	00:00	2008-09-17
173703	AH-3 3'-3.5'	soil	2008-09-16	00:00	2008-09-17
173704	AH-4 0-1'	soil	2008-09-16	00:00	2008-09-17
173705	AH-4 1'-1.5'	soil	2008-09-16	00:00	2008-09-17
173706	AH-4 2'-2.5'	soil	2008-09-16	00:00	2008-09-17
173707	AH-4 3'-3.5'	soil	2008-09-16	00:00	2008-09-17
173708	AH-5 0-1'	soil	2008-09-16	00:00	2008-09-17
173709	AH-5 1'-1.5'	soil	2008-09-16	00:00	2008-09-17
173710	AH-5 2'-2.5	soil	2008-09-16	00:00	2008-09-17
173711	AH-5 3'-3.5'	soil	2008-09-16	00:00	2008-09-17

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 St. Mary/Geronimo Federal Inj. Station were received by TraceAnalysis, Inc. on 2008-09-17 and assigned to work order 8091729. Samples for work order 8091729 were received intact at a temperature of 3.7 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 8091729 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: 173691 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52542	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45030	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**650**		mg/Kg	50	2.00

Sample: 173691 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	52479	Date Analyzed:	2008-09-18	Analyzed By:	LD
Prep Batch:	44990	Sample Preparation:	2008-09-18	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		184	mg/Kg	1	100	184	10 - 250.4

Sample: 173691 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	52503	Date Analyzed:	2008-09-18	Analyzed By:	DC
Prep Batch:	45007	Sample Preparation:	2008-09-18	Prepared By:	DC

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO	*B*	**1.04**		mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.01	mg/Kg	1	1.00	101	67.5 - 135.2
4-Bromofluorobenzene (4-BFB)		1.03	mg/Kg	1	1.00	103	63.8 - 141

Sample: 173692 - AH-1 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52542	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45030	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<100	mg/Kg	50	2.00

Sample: 173693 - AH-1 2'-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52542	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45030	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**313**	mg/Kg	50	2.00

Sample: 173694 - AH-1 3'-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52542	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45030	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**10200**	mg/Kg	50	2.00

Sample: 173695 - AH-1 3.5'-4.0'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52542	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45030	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**11200**	mg/Kg	50	2.00

Sample: 173696 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52542	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45030	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1860**	mg/Kg	50	2.00

Sample: 173696 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	52479	Date Analyzed:	2008-09-18	Analyzed By:	LD
Prep Batch:	44990	Sample Preparation:	2008-09-18	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		156	mg/Kg	1	100	156	10 - 250.4

Sample: 173696 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	52503	Date Analyzed:	2008-09-18	Analyzed By:	DC
Prep Batch:	45007	Sample Preparation:	2008-09-18	Prepared By:	DC

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.935	mg/Kg	1	1.00	94	67.5 - 135.2
4-Bromofluorobenzene (4-BFB)		0.944	mg/Kg	1	1.00	94	63.8 - 141

Sample: 173697 - AH-2 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52542	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45030	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**635**	mg/Kg	50	2.00

Sample: 173698 - AH-2 2'-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52542	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45030	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**842**	mg/Kg	50	2.00

Sample: 173699 - AH-2 3'-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52542	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45030	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**9400**	mg/Kg	50	2.00

Sample: 173700 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	52533	Date Analyzed:	2008-09-18	Analyzed By:	DC
Prep Batch:	45007	Sample Preparation:	2008-09-18	Prepared By:	DC

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 173700 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		**0.0882**	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.921	mg/Kg	1	1.00	92	68 - 136.9
4-Bromofluorobenzene (4-BFB)		0.981	mg/Kg	1	1.00	98	48.2 - 155

Sample: 173700 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52542	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45030	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**4020**	mg/Kg	50	2.00

Sample: 173700 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	52479	Date Analyzed:	2008-09-18	Analyzed By:	LD
Prep Batch:	44990	Sample Preparation:	2008-09-18	Prepared By:	LD

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**74.2**	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		141	mg/Kg	1	100	141	10 - 250.4

Sample: 173700 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	52503	Date Analyzed:	2008-09-18	Analyzed By:	DC
Prep Batch:	45007	Sample Preparation:	2008-09-18	Prepared By:	DC

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**16.4**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.944	mg/Kg	1	1.00	94	67.5 - 135.2
4-Bromofluorobenzene (4-BFB)		0.904	mg/Kg	1	1.00	90	63.8 - 141

Sample: 173701 - AH-3 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52543	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45032	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**531**	mg/Kg	50	2.00

Sample: 173702 - AH-3 2'-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52543	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45032	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**588**	mg/Kg	50	2.00

Sample: 173703 - AH-3 3'-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52543	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45032	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**964**	mg/Kg	50	2.00

Sample: 173704 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	52533	Date Analyzed:	2008-09-18	Analyzed By:	DC
Prep Batch:	45007	Sample Preparation:	2008-09-18	Prepared By:	DC

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
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)		0.968	mg/Kg	1	1.00	97	68 - 136.9
4-Bromofluorobenzene (4-BFB)		1.01	mg/Kg	1	1.00	101	48.2 - 155

Sample: 173704 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52543	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45032	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2820	mg/Kg	50	2.00

Sample: 173704 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	52479	Date Analyzed:	2008-09-18	Analyzed By:	LD
Prep Batch:	44990	Sample Preparation:	2008-09-18	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		156	mg/Kg	1	100	156	10 - 250.4

Sample: 173704 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	52503	Date Analyzed:	2008-09-18	Analyzed By:	DC
Prep Batch:	45007	Sample Preparation:	2008-09-18	Prepared By:	DC

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	B	**4.96**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.01	mg/Kg	1	1.00	101	67.5 - 135.2
4-Bromofluorobenzene (4-BFB)		1.04	mg/Kg	1	1.00	104	63.8 - 141

Sample: 173705 - AH-4 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52543	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45032	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**268**	mg/Kg	50	2.00

Sample: 173706 - AH-4 2'-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52543	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45032	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**216**	mg/Kg	50	2.00

Sample: 173707 - AH-4 3'-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52543	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45032	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<100	mg/Kg	50	2.00

Sample: 173708 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	52533	Date Analyzed:	2008-09-18	Analyzed By:	DC
Prep Batch:	45007	Sample Preparation:	2008-09-18	Prepared By:	DC

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
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)		0.918	mg/Kg	1	1.00	92	68 - 136.9
4-Bromofluorobenzene (4-BFB)		0.910	mg/Kg	1	1.00	91	48.2 - 155

Sample: 173708 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52543	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45032	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1920**	mg/Kg	50	2.00

Sample: 173708 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	52479	Date Analyzed:	2008-09-18	Analyzed By:	LD
Prep Batch:	44990	Sample Preparation:	2008-09-18	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		153	mg/Kg	1	100	153	10 - 250.4

Sample: 173708 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	52503	Date Analyzed:	2008-09-18	Analyzed By:	DC
Prep Batch:	45007	Sample Preparation:	2008-09-18	Prepared By:	DC

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	B	**1.34**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.967	mg/Kg	1	1.00	97	67.5 - 135.2
4-Bromofluorobenzene (4-BFB)		0.914	mg/Kg	1	1.00	91	63.8 - 141

Sample: 173709 - AH-5 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52543	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45032	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<100	mg/Kg	50	2.00

Sample: 173710 - AH-5 2'-2.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52543	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45032	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**227**	mg/Kg	50	2.00

Sample: 173711 - AH-5 3'-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	52544	Date Analyzed:	2008-09-19	Analyzed By:	AR
Prep Batch:	45033	Sample Preparation:	2008-09-19	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<100	mg/Kg	50	2.00

Method Blank (1) QC Batch: 52479

QC Batch:	52479	Date Analyzed:	2008-09-18	Analyzed By:	LD
Prep Batch:	44990	QC Preparation:	2008-09-18	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		70.5	mg/Kg	1	100	70	30.9 - 146.4

Method Blank (1) QC Batch: 52503

QC Batch:	52503	Date Analyzed:	2008-09-18	Analyzed By:	DC
Prep Batch:	45007	QC Preparation:	2008-09-18	Prepared By:	DC

Parameter	Flag	MDL Result	Units	RL
GRO		0.922	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.974	mg/Kg	1	1.00	97	39.2 - 135.2
4-Bromofluorobenzene (4-BFB)		0.923	mg/Kg	1	1.00	92	16.8 - 138.1

Method Blank (1) QC Batch: 52533

QC Batch:	52533	Date Analyzed:	2008-09-18	Analyzed By:	DC
Prep Batch:	45007	QC Preparation:	2008-09-18	Prepared By:	DC

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00580	mg/Kg	0.01
Toluene		<0.00470	mg/Kg	0.01
Ethylbenzene		<0.00530	mg/Kg	0.01
Xylene		<0.0136	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.961	mg/Kg	1	1.00	96	48.3 - 132.5
4-Bromofluorobenzene (4-BFB)		0.940	mg/Kg	1	1.00	94	37.7 - 128.9

Method Blank (1) QC Batch: 52542

QC Batch: 52542 | Date Analyzed: 2008-09-19 | Analyzed By: AR
Prep Batch: 45030 | QC Preparation: 2008-09-19 | Prepared By: AR

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

Method Blank (1) QC Batch: 52543

QC Batch: 52543 | Date Analyzed: 2008-09-19 | Analyzed By: AR
Prep Batch: 45032 | QC Preparation: 2008-09-19 | Prepared By: AR

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

Method Blank (1) QC Batch: 52544

QC Batch: 52544 | Date Analyzed: 2008-09-19 | Analyzed By: AR
Prep Batch: 45033 | QC Preparation: 2008-09-19 | Prepared By: AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 52479 | Date Analyzed: 2008-09-18 | Analyzed By: LD
Prep Batch: 44990 | QC Preparation: 2008-09-18 | Prepared By: LD

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	206	mg/Kg	1	250	<15.8	82	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	198	mg/Kg	1	250	<15.8	79	27.8 - 152.1	4	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	128	113	mg/Kg	1	100	128	113	38 - 130.4

Laboratory Control Spike (LCS-1)

QC Batch: 52503 | Date Analyzed: 2008-09-18 | Analyzed By: DC
Prep Batch: 45007 | QC Preparation: 2008-09-18 | Prepared By: DC

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	8.79	mg/Kg	1	10.0	0.922	79	57.5 - 106.4

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
GRO	9.40	mg/Kg	1	10.0	0.922	85	57.5 - 106.4	7	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)	1.00	0.966	mg/Kg	1	1.00	100	97	63.8 - 134.3
4-Bromofluorobenzene (4-BFB)	0.958	0.936	mg/Kg	1	1.00	96	94	53.3 - 123.6

Laboratory Control Spike (LCS-1)

QC Batch: 52533 | Date Analyzed: 2008-09-18 | Analyzed By: DC
Prep Batch: 45007 | QC Preparation: 2008-09-18 | Prepared By: DC

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.951	mg/Kg	1	1.00	<0.00580	95	73.3 - 116.6
Toluene	0.944	mg/Kg	1	1.00	<0.00470	94	78.6 - 115.1
Ethylbenzene	0.927	mg/Kg	1	1.00	<0.00530	93	77.4 - 114.9
Xylene	2.78	mg/Kg	1	3.00	<0.0136	93	78.2 - 114.7

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	1.01	mg/Kg	1	1.00	<0.00580	101	73.3 - 116.6	6	20
Toluene	1.00	mg/Kg	1	1.00	<0.00470	100	78.6 - 115.1	6	20
Ethylbenzene	1.00	mg/Kg	1	1.00	<0.00530	100	77.4 - 114.9	8	20
Xylene	3.01	mg/Kg	1	3.00	<0.0136	100	78.2 - 114.7	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)	0.929	0.953	mg/Kg	1	1.00	93	95	45 - 124.2
4-Bromofluorobenzene (4-BFB)	0.930	0.954	mg/Kg	1	1.00	93	95	47.2 - 130.4

Laboratory Control Spike (LCS-1)

QC Batch: 52542 | Date Analyzed: 2008-09-19 | Analyzed By: AR
Prep Batch: 45030 | QC Preparation: 2008-09-19 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.8	mg/Kg	1	100	<0.500	99	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	99.6	mg/Kg	1	100	<0.500	100	85 - 115	1	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: 52543 | Date Analyzed: 2008-09-19 | Analyzed By: AR
Prep Batch: 45032 | QC Preparation: 2008-09-19 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	100	mg/Kg	1	100	<0.500	100	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	102	mg/Kg	1	100	<0.500	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: 52544 | Date Analyzed: 2008-09-19 | Analyzed By: AR
Prep Batch: 45033 | QC Preparation: 2008-09-19 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.2	mg/Kg	1	100	<0.500	99	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	99.6	mg/Kg	1	100	<0.500	100	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: 173691

QC Batch: 52479 | Date Analyzed: 2008-09-18 | Analyzed By: LD
Prep Batch: 44990 | QC Preparation: 2008-09-18 | Prepared By: LD

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	283	mg/Kg	1	250	<15.8	113	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	262	mg/Kg	1	250	<15.8	105	18 - 179.5	8	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	122	123	mg/Kg	1	100	122	123	34.1 - 158

Matrix Spike (MS-1) Spiked Sample: 173708

QC Batch: 52503 | Date Analyzed: 2008-09-18 | Analyzed By: DC
Prep Batch: 45007 | QC Preparation: 2008-09-18 | Prepared By: DC

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	10.2	mg/Kg	1	10.0	1.338	89	10 - 139.3

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	[1]	20.6	mg/Kg	1	10.0	1.338	193	10 - 139.3	68	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)	0.966	1.01	mg/Kg	1	1	97	101	21.3 - 119
4-Bromofluorobenzene (4-BFB)	0.932	0.989	mg/Kg	1	1	93	99	52.5 - 154

Matrix Spike (MS-1) Spiked Sample: 173825

QC Batch: 52533 | Date Analyzed: 2008-09-18 | Analyzed By: DC
Prep Batch: 45007 | QC Preparation: 2008-09-18 | Prepared By: DC

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.31	mg/Kg	1	1.00	<0.00580	131	62.2 - 134.3
Toluene	1.31	mg/Kg	1	1.00	<0.00470	131	62.6 - 145.4
Ethylbenzene	1.30	mg/Kg	1	1.00	<0.00530	130	64.6 - 146.4
Xylene	3.90	mg/Kg	1	3.00	0.0272	129	64.3 - 148.8

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
Benzene	[2]	0.816	mg/Kg	1	1.00	<0.00580	82	62.2 - 134.3	46	20
Toluene	[3]	0.807	mg/Kg	1	1.00	<0.00470	81	62.6 - 145.4	48	20
Ethylbenzene	[4]	0.818	mg/Kg	1	1.00	<0.00530	82	64.6 - 146.4	46	20
Xylene	[5]	2.45	mg/Kg	1	3.00	0.0272	82	64.3 - 148.8	46	20

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

[1] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[2] MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.
[3] MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.
[4] MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.
[5] MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.923	0.892	mg/Kg	1	1	92	89	38.8 - 127.5
4-Bromofluorobenzene (4-BFB)	0.936	0.895	mg/Kg	1	1	94	90	49.3 - 142.4

Matrix Spike (MS-1) Spiked Sample: 173700

QC Batch: 52542 | Date Analyzed: 2008-09-19 | Analyzed By: AR
Prep Batch: 45030 | QC Preparation: 2008-09-19 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	8580	mg/Kg	50	5000	4017	91	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	8680	mg/Kg	50	5000	4017	93	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: 173710

QC Batch: 52543 | Date Analyzed: 2008-09-19 | Analyzed By: AR
Prep Batch: 45032 | QC Preparation: 2008-09-19 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5360	mg/Kg	50	5000	227	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	5430	mg/Kg	50	5000	227	104	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: 173711

QC Batch: 52544 | Date Analyzed: 2008-09-19 | Analyzed By: AR
Prep Batch: 45033 | QC Preparation: 2008-09-19 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5020	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	5080	mg/Kg	50	5000	<25.0	101	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: 52479 Date Analyzed: 2008-09-18 Analyzed By: LD

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	278	111	85 - 115	2008-09-18

Standard (CCV-1)

QC Batch: 52479 Date Analyzed: 2008-09-18 Analyzed By: LD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	264	106	85 - 115	2008-09-18

Standard (ICV-1)

QC Batch: 52503 Date Analyzed: 2008-09-18 Analyzed By: DC

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.06	106	85 - 115	2008-09-18

Standard (CCV-1)

QC Batch: 52503 Date Analyzed: 2008-09-18 Analyzed By: DC

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.14	114	85 - 115	2008-09-18

Standard (ICV-1)

QC Batch: 52533 | Date Analyzed: 2008-09-18 | Analyzed By: DC

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0943	94	85 - 115	2008-09-18
Toluene		mg/Kg	0.100	0.0942	94	85 - 115	2008-09-18
Ethylbenzene		mg/Kg	0.100	0.0931	93	85 - 115	2008-09-18
Xylene		mg/Kg	0.300	0.281	94	85 - 115	2008-09-18

Standard (CCV-1)

QC Batch: 52533 | Date Analyzed: 2008-09-18 | Analyzed By: DC

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0965	96	85 - 115	2008-09-18
Toluene		mg/Kg	0.100	0.0962	96	85 - 115	2008-09-18
Ethylbenzene		mg/Kg	0.100	0.0971	97	85 - 115	2008-09-18
Xylene		mg/Kg	0.300	0.291	97	85 - 115	2008-09-18

Standard (ICV-1)

QC Batch: 52542 | Date Analyzed: 2008-09-19 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	103	103	85 - 115	2008-09-19

Standard (CCV-1)

QC Batch: 52542 | Date Analyzed: 2008-09-19 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	96.7	97	85 - 115	2008-09-19

Standard (ICV-1)

QC Batch: 52543 | Date Analyzed: 2008-09-19 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.9	99	85 - 115	2008-09-19

Standard (CCV-1)

QC Batch: 52543 Date Analyzed: 2008-09-19 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	2008-09-19

Standard (ICV-1)

QC Batch: 52544 Date Analyzed: 2008-09-19 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.1	99	85 - 115	2008-09-19

Standard (CCV-1)

QC Batch: 52544 Date Analyzed: 2008-09-19 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	2008-09-19

Analysis Request of Chain of Custody Record

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

CLIENT NAME: St Mary Land & Exploration
SITE MANAGER: Ike Tavarez
PROJECT NO.: 115-640 3593
PROJECT NAME: St Mary / Geronimo Federal Injection Station Eddy Co, 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. (Ext. to C35) TX1005	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
173691	9/16/08		S		X	AH-1 0-1'	1				X			X											X				
692			S		X	AH-1 1'-1.5'	1				X														X				
693			S		X	AH-1 2'-2.5'	1				X														X				
694			S		X	AH-1 3'-3.5'	1				X														X				
695			S		X	AH-1 3.5'-4.0'	1				X														X				
696			S		X	AH-2 0'-1'	1				X			X											X				
697			S		X	AH-2 1'-1.5'	1				X														X				
698			S		X	AH-2 2'-2.5'	1				X														X				
699			S		X	AH-2 3'-3.5'	1				X														X				
700			S		X	AH-3 0-1'	1				X			X											X				

RELINQUISHED BY: (Signature) — Date: 9/17/08 Time: 3:00
RECEIVED BY: (Signature) — Date: Time:
RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:

SAMPLED BY: (Print & initial) Ray Taylor / Gerald Carrillo — Date: 9/17/08 Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: 9.17.08 TIME: 15:00

TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.7°C
REMARKS: If TPH Exceeds a total of 1,000 mg/kg run deeper Horizon, Run 3 BTEX on highest TPH's 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.

Analysis Request of Chain of Custody Record

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

CLIENT NAME: St Mary Landd Exploration
SITE MANAGER: Ike Tavarez
PROJECT NO.: 115-640 3593
PROJECT NAME: St Mary / Geronimo Federal Injection Station Eddy co, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	ANALYSIS REQUEST: BTEX 8021B	TPH 8015 MOD. (Ext. to C35) TX1005	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
173701	9/16/08		S		X	AH-3 1'-1.5'	1				X													X				
702	"		S		X	AH-3 2'-2.5'	1				X													X				
703	"		S		X	AH-3 3'-3.5'	1				X													X				
704	"		S		X	AH-4 0-1'	1				X			X										X				
705	"		S		X	AH-4 1'-1.5'	1				X													X				
706	"		S		X	AH-4 2'-2.5'	1				X													X				
707	"		S		X	AH-4 3'-3.5'	1				X													X				
708	"		S		X	AH-5 0-1'	1				X			X										X				
709	"		S		X	AH-5 1'-1.5'	1				X													X				
710	↓		S		X	AH-5 2'-2.5'	1				X													X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) — Date: 9/17/08 Time: 3:00
RECEIVED BY: (Signature) — Date: Time:
SAMPLED BY: (Print & Initial) Ray Taylor & Gerald Corrillo — Date: 9/17/08 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:
TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: 9-17-08 TIME: 15:00
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.7°C Intact
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.

Analysis Request of Chain of Custody Record

PAGE: 3 OF: 3

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

CLIENT NAME: St Mary Land & Exploration

SITE MANAGER: Ike Tavarez

PROJECT NO.: 115-640 3593

PROJECT NAME: St Mary/Geronimo Federal/Injection Station Eddy Co. NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
173711	9/16/08		S		X	AH-5 3'-3.5'	1				X	

ANALYSIS REQUEST (Circle or Specify Method No.)

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				

RELINQUISHED BY: (Signature) — Date: 9/17/08 Time: 2:00

RECEIVED BY: (Signature) — Date: Time:

SAMPLED BY: (Print & Initial) Ray Taylor/Gerald Camillo — Date: 9/16/08 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:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RECEIVING LABORATORY: Trace

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: 9.17.08 TIME: 15:00

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.7°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: November 7, 2008

Work Order: 8103117

Project Location: Eddy Co., NM
Project Name: St. Mary/Geronimo Federal Inj. Station
Project Number: 115-6403593

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
177816	BH-1 0-1'	soil	2008-10-29	00:00	2008-10-31
177817	BH-1 2-3'	soil	2008-10-29	00:00	2008-10-31
177818	BH-1 4-5'	soil	2008-10-29	00:00	2008-10-31
177819	BH-1 6-7'	soil	2008-10-29	00:00	2008-10-31
177820	BH-1 8-9'	soil	2008-10-29	00:00	2008-10-31
177821	BH-1 10-11'	soil	2008-10-29	00:00	2008-10-31
177822	BH-1 12-13'	soil	2008-10-29	00:00	2008-10-31
177825	BH-2 0-1'	soil	2008-10-29	00:00	2008-10-31
177826	BH-2 2-3'	soil	2008-10-29	00:00	2008-10-31
177827	BH-2 4-5'	soil	2008-10-29	00:00	2008-10-31
177828	BH-2 6-7'	soil	2008-10-29	00:00	2008-10-31
177829	BH-2 8-9'	soil	2008-10-29	00:00	2008-10-31
177830	BH-2 10-11'	soil	2008-10-29	00:00	2008-10-31
177831	BH-2 12-13'	soil	2008-10-29	00:00	2008-10-31

Sample: 177816 - BH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**5110**	mg/Kg	2.00

Sample: 177817 - BH-1 2-3'

Param	Flag	Result	Units	RL
Chloride		**374**	mg/Kg	2.00

Sample: 177818 - BH-1 4-5'

Param	Flag	Result	Units	RL
Chloride		**118**	mg/Kg	2.00

Sample: 177819 - BH-1 6-7'

Param	Flag	Result	Units	RL
Chloride		**219**	mg/Kg	2.00

Sample: 177820 - BH-1 8-9'

Param	Flag	Result	Units	RL
Chloride		**599**	mg/Kg	2.00

Sample: 177821 - BH-1 10-11'

Param	Flag	Result	Units	RL
Chloride		**160**	mg/Kg	2.00

Sample: 177822 - BH-1 12-13'

Param	Flag	Result	Units	RL
Chloride		**150**	mg/Kg	2.00

Sample: 177825 - BH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**9660**	mg/Kg	2.00

Sample: 177826 - BH-2 2-3'

Param	Flag	Result	Units	RL
Chloride		**513**	mg/Kg	2.00

Sample: 177827 - BH-2 4-5'

Param	Flag	Result	Units	RL
Chloride		**5780**	mg/Kg	2.00

Sample: 177828 - BH-2 6-7'

Param	Flag	Result	Units	RL
Chloride		**1150**	mg/Kg	2.00

Sample: 177829 - BH-2 8-9'

Param	Flag	Result	Units	RL
Chloride		**610**	mg/Kg	2.00

Sample: 177830 - BH-2 10-11'

Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

Sample: 177831 - BH-2 12-13'

Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

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: November 7, 2008

Work Order: 8103117

Project Location: Eddy Co., NM
Project Name: St. Mary/Geronimo Federal Inj. Station
Project Number: 115-6403593

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
177816	BH-1 0-1'	soil	2008-10-29	00:00	2008-10-31
177817	BH-1 2-3'	soil	2008-10-29	00:00	2008-10-31
177818	BH-1 4-5'	soil	2008-10-29	00:00	2008-10-31
177819	BH-1 6-7'	soil	2008-10-29	00:00	2008-10-31
177820	BH-1 8-9'	soil	2008-10-29	00:00	2008-10-31
177821	BH-1 10-11'	soil	2008-10-29	00:00	2008-10-31
177822	BH-1 12-13'	soil	2008-10-29	00:00	2008-10-31
177825	BH-2 0-1'	soil	2008-10-29	00:00	2008-10-31
177826	BH-2 2-3'	soil	2008-10-29	00:00	2008-10-31
177827	BH-2 4-5'	soil	2008-10-29	00:00	2008-10-31

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
177828	BH-2 6-7'	soil	2008-10-29	00:00	2008-10-31
177829	BH-2 8-9'	soil	2008-10-29	00:00	2008-10-31
177830	BH-2 10-11'	soil	2008-10-29	00:00	2008-10-31
177831	BH-2 12-13'	soil	2008-10-29	00:00	2008-10-31

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 St. Mary/Geronimo Federal Inj. Station were received by TraceAnalysis, Inc. on 2008-10-31 and assigned to work order 8103117. Samples for work order 8103117 were received intact at a temperature of 3.5 deg. C.

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

Test	Method
Chloride (Titration)	SM 4500-Cl B

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 8103117 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: 177816 - BH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53968	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46167	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**5110**		mg/Kg	50	2.00

Sample: 177817 - BH-1 2-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53968	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46167	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**374**		mg/Kg	50	2.00

Sample: 177818 - BH-1 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53968	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46167	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**118**		mg/Kg	50	2.00

Sample: 177819 - BH-1 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53968	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46167	Sample Preparation:	2008-11-05	Prepared By:	AR

continued ...

sample 177819 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**219**	mg/Kg	50	2.00

Sample: 177820 - BH-1 8-9'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53968	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46167	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**599**	mg/Kg	50	2.00

Sample: 177821 - BH-1 10-11'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53968	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46167	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**160**	mg/Kg	50	2.00

Sample: 177822 - BH-1 12-13'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53968	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46167	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**150**	mg/Kg	50	2.00

Sample: 177825 - BH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53968	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46167	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**9660**	mg/Kg	50	2.00

Sample: 177826 - BH-2 2-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53968	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46167	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**513**	mg/Kg	50	2.00

Sample: 177827 - BH-2 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53969	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46168	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**5780**	mg/Kg	50	2.00

Sample: 177828 - BH-2 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53969	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46168	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1150**	mg/Kg	50	2.00

Sample: 177829 - BH-2 8-9'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53969	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46168	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**610**	mg/Kg	50	2.00

Sample: 177830 - BH-2 10-11'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53969	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46168	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<100	mg/Kg	50	2.00

Sample: 177831 - BH-2 12-13'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	53969	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46168	Sample Preparation:	2008-11-05	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<100	mg/Kg	50	2.00

Method Blank (1) QC Batch: 53968

QC Batch:	53968	Date Analyzed:	2008-11-05	Analyzed By:	AR
Prep Batch:	46167	QC Preparation:	2008-11-05	Prepared By:	AR

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

Method Blank (1) QC Batch: 53969

QC Batch: 53969 | Date Analyzed: 2008-11-05 | Analyzed By: AR
Prep Batch: 46168 | QC Preparation: 2008-11-05 | Prepared By: AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 53968 | Date Analyzed: 2008-11-05 | Analyzed By: AR
Prep Batch: 46167 | QC Preparation: 2008-11-05 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.2	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	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: 53969 | Date Analyzed: 2008-11-05 | Analyzed By: AR
Prep Batch: 46168 | QC Preparation: 2008-11-05 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.7	mg/Kg	1	100	<0.500	99	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	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: 177826

QC Batch: 53968 | Date Analyzed: 2008-11-05 | Analyzed By: AR
Prep Batch: 46167 | QC Preparation: 2008-11-05 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5780	mg/Kg	50	5000	513	105	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	5920	mg/Kg	50	5000	513	108	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: 177890

QC Batch: 53969 | Date Analyzed: 2008-11-05 | Analyzed By: AR
Prep Batch: 46168 | QC Preparation: 2008-11-05 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9170	mg/Kg	50	5000	4130	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	9310	mg/Kg	50	5000	4130	104	85 - 115	2	20

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

Standard (ICV-1)

QC Batch: 53968 | Date Analyzed: 2008-11-05 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.1	99	85 - 115	2008-11-05

Standard (CCV-1)

QC Batch: 53968 | Date Analyzed: 2008-11-05 | 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	2008-11-05

Standard (ICV-1)

QC Batch: 53969 | Date Analyzed: 2008-11-05 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.3	99	85 - 115	2008-11-05

Standard (CCV-1)

QC Batch: 53969 | Date Analyzed: 2008-11-05 | 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	2008-11-05

Analysis Request of Chain of Custody Record

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

CLIENT NAME: St Mary Land & Exploration
SITE MANAGER: Ike Tavarez
PROJECT NO.: 115-640 3593
PROJECT NAME: St Mary / Geronimo Federal INJ Station Eddy 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
177816	10/29/08		S		X	BH-1 0-1'	1				X	
817	"		S		X	BH-1 2'-3'	1				X	
818			S		X	BH-1 4'-5'	1				X	
819			S		X	BH-1 6'-7'	1				X	
820			S		X	BH-1 8'-9'	1				X	
821			S		X	BH-1 10'-11'	1				X	
822			S		X	BH-1 12'-13'	1				X	
823			S		X	BH-1 14'-15'	1				X	
824			S		X	BH-1 16'-17'	1				X	
825	↓		S		X	BH-2 0-1'	1				X	

ANALYSIS REQUEST (Circle or Specify Method No.)

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				
												X				
												X				
												X				
												X				
												X				
												X				
												X				

RELINQUISHED BY: (Signature) Date: 10/30/08 Time: 10:05
RECEIVED BY: (Signature) Date: Time:
SAMPLED BY: (Print & Initial) Ray Taylor Date: 10/30/08 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:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland, TX STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: 10.31.08 TIME: 10:05
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.5°C intact
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.

Analysis Request of Chain of Custody Record

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

CLIENT NAME: St Mary Land & Exploration
SITE MANAGER: Ike Tavarez
PROJECT NO.: 115-640 3593
PROJECT NAME: St Mary / Geronimo Federal Inj Station Eddy 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
177826	10/29/08		S		X	BH-2 2'-3'	1				X	
827			S		X	BH-2 4'-5'	1				X	
828			S		X	BH-2 6'-7'	1				X	
829			S		X	BH-2 8'-9'	1				X	
830			S		X	BH-2 10'-11'	1				X	
831	↓		S		X	BH-2 12-13'	1				X	

ANALYSIS REQUEST (Circle or Specify Method No.)

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				
												X				
												X				
												X				

RELINQUISHED BY: (Signature) — Date: 10/31/08 Time: 10:30
RECEIVED BY: (Signature) — Date: — Time:
SAMPLED BY: (Print & Initial) Ray Tyler — Date: — 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:
TETRA TECH CONTACT PERSON: Ike Tavarez — Results by: — RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: 10.31.08 TIME: 10:35

SAMPLE CONDITION WHEN RECEIVED: 3.5° C intact
REMARKS:

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